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ALLUETAIN ETHNOECOLOGY AND TRADITIONAL ECONOMY: THE PROCUREMENT AND PRODUCTION OF PLANT RESOURCES IN THE NORTHERN FRENCH ALPS

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Alluetain Ethnoecology and Traditional Economy: The Procurement and Production of Plant Resources in the Northern French Alps

by

BRIEN A. MEILLEUR

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Abstract

ALLUETAIN ETHNOECOLOGY AND TRADITIONAL ECONOMY: THE PROCUREMENT AND PRODUCTION OF PLANT RESOURCES IN THE NORTHERN FRENCH ALPS

By Brien A. Meilleur

Chairperson of the Supervisory Committee:
Professor Eugene Hunn
Department of Anthropology

This dissertation is an ethnoecological study of land and botanical resource use in the French northern alpine commune of Les Allues. It is based on at least two years of field research and extensive use of regional archives. The primary goals were two: to reconstruct a detailed description of the agro-pastoral system of subsistence production, with an emphasis on cultivation and gathering, and to demonstrate one manner in which folk knowledge of the environment was applied by alpine peasants toward the goals of procuring or producing botanical resources. By recognizing and defining 20-some folk biotopes, or emic habitat categories, and describing how these categories were "used" to order biotic space in conjunction with 250-some folk botanical taxa, this dissertation describes one aspect of the imbrication between cognitive process (gnosis) and practical action (praxis) in economic behavior. It is suggested that the folk biotope would be a useful concept in analyzing subsistence production in any small-scale society with close ties to the land. Several detailed accounts of Alluetain agricultural strategies were provided as a contribution to regional ethnography.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

ACKNOWLEDGEMENTS

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Hudry provided continual enlightened but "tough" conversation and access to unpublished diocesan documents; Philippe Paillard and his staff of the Archives Départementales de la Savoie in Chambéry helped me to locate scores of unpublished documents; M. Piercy of the Office National des Forêts in Albertville furnished me with original documents concerning the Alluetain forest. These people and organizations, and the many others too numerous to mention personally, I thank for their time and competence. Christian Abry knows I don't need to thank him, but for all his time and help on Alluetain dialect and many other topics, I gratefully thank him. Last, but not least, I express my appreciation and love to my wife Sylvie and to my father, Peter, both of whom stood by me through this entire process.

DEDICATION

In memory of

Marijane Bird Meilleur

CHAPTER 1

Introduction

This study is concerned with folk knowledge and its relationship to subsistence economic behavior in the high mountain peasant community of Les Allues in the northern French Alps. While considerable anthropological interest has been shown toward human adaptation in mountainous areas of the world in the last two decades, to a large degree this research has been sociologically oriented. Identification of resources and description of the mechanics of making a living, while often provided in some detail, have generally been subordinated to questions such as settlement pattern, land tenure and inheritance, demographics, networks of exchange, politics, and other social relationships which are important elements of high altitude human ecology (Brush 1977; Cole & Wolf 1974; Friedl 1974; Netting 1981; Weinberg 1975, etc.). Though these topics--what Godelier calls "the social relations of production" of the "infrastructure" (1978:763+)--are essential to understanding human adaptation in mountainous ecosystems, they are no more important than an understanding of the subsistence activities themselves and of the native concepts of the biotic world toward which these activities are directed--what Godelier calls "the productive forces" of the "infrastructure" (op. cit.).

This study is based on the premise that the cognitive investment in structuring abiotic and biotic space (gnosis) is as important to making a living as is the practical investment in management,

technology and human labor directed at such space (praxis). In the high mountain peasant community of Les Allues, as in all small-scale societies where individual men and women are in direct and constant contact with the land and its resources for economic reasons, activities related to production represent the basis for most human-environment relations. Where short growing season, difficult weather conditions and other factors placed a premium on effective use of time, effort and space, short term economic success--and undoubtedly long term adaptive success--were ultimately dependent upon sophisticated knowledge of the physical environment, of the wild and domesticated plants and animals, and upon the efficient organization and application of that knowledge. By creating a diverse landscape which permitted sufficient and sustained production of the resources needed for continuous social reproduction, past generations of Alluetains transformed their alpine valley into a stable ethnoecosystem that has endured for well over 500 years. The description of traditional Alluetain ecological representations and ordering of this landscape, of the actions related to vegetal production and procurement within this space and an attempt to show analytically how these two aspects of behavior--gnosis and praxis--were interrelated in the production process, constitute the core of this work.

While I prefer to call this account an ethnoecological case study in an adaptationist context, it is also a "micro-economic" report on production. Detailed descriptions of traditional high mountain productive activities, with a particular emphasis on the agricultural

rather than the pastoral, are provided in an effort to counterbalance the overwhelming bias toward pastoralism in the published literature on the French northern alpine economy (see, e.g., Arbos 1922; Blanchard 1943; Mougin 1919; Rey 1930). I found several unexpected land use patterns in Les Allues and I will describe these as a contribution to regional ethnography. A second bias in the published literature, toward regional syntheses rather than detailed community studies, has also hindered recognition of the pertinent levels of production within the hundreds of agro-pastoral communities of this geographical area. While I have been able to identify at least eight levels at which production and/or management of property was organized and regulated in Les Allues (individual, nuclear family, interpersonal, hamlet, quarter, community, intercommunity, national government), the bulk of economic action was planned and operationalized at the level of the nuclear family household. Only rarely was this found to be the case at the level of the entire community, as is often inferred in regional syntheses (see, e.g., Collomb & Raulin 1979:121). All evidence indicates that 90% or more of what the average Alluetain household consumed in a given year was also produced by it. During what I call the traditional period (up to 1950 or so), it was overwhelmingly at the levels of the individual and the nuclear family, albeit with some important concessions to larger collectivities, that day-to-day management, decision making, and the application of folk knowledge occurred. Economic studies of "productive forces"

and of "social relations of production" in the northern Alps should focus on these levels, as Netting (1981) and others have done.

Time and space constraints did not permit descriptions of all productive sectors of the traditional Alluetain economy. Many aspects of production--bee-keeping, fishing, hunting and trapping, quarrying and use of rock and other mineral substances, milling, periodic wage labor, etc.--have not been addressed here due to my focus on the collection and cultivation of plants. Furthermore, my abbreviated treatment of the pastoral sector of production in Chapter 10 did not do justice to its fundamental importance in Alluetain socio-economic success. However, more than adequate descriptions of the most common regional pastoral types elsewhere (Arbos 1922; Rey 1930) allowed me to describe several of the more neglected features of the pastoral regimen. I hope to have the opportunity to close these gaps by further research so that a complete record of this intriguing ethnoecosystem will be available.

Methods

I use the past tense to refer to Alluetain productive activities, for the mixed mountain economy practiced some thirty years ago in this community no longer exists as a functionally integrated system. As peasants turned to wage labor after World War II by providing services for two rapidly growing ski resorts, major changes in the management of land, in the use of resources and in the settlement pattern occurred. The conversion from subsistence agriculture to a money economy, dominated by market consumption, was mostly completed within

a short twenty-year period (1950-1970 approximately). However, many details of the past continue to exist in the memories, and sometimes in the practices, of the older Alluetain men and women who lived the traditional way of life in their youth. Corroborative data have also been found in historical records. These sometimes provide astonishingly detailed information about agricultural production and land use.

The initial task of locating knowledgeable informants within the valley was facilitated by my Alluetain heritage. A first visit in 1965 with my parents, when I was sixteen, introduced me to my paternal great aunt and to many other community members, some of them distant cousins. This visit to the home of my paternal grandparents established me in many peoples' eyes as an "enfant du pays" and upon my return in the late 1970s to do fieldwork, most doors were opened to me. Over the course of the next few years I established cordial working relations with a number of families and individuals which endure today, in some cases, as close friendships.

While it soon became apparent that there was relatively little occupational specialization in Les Allues during the traditional period, there had been a marked sexual division of labor in several productive sectors, most notably gardening, a woman's domain, and forest-related activities, a man's domain. Of my seven primary informants (those I visited regularly), four were men and three were women, including two married couples. Of the remaining five people (my secondary informants) whom I visited less often, three were men and two were women (see Acknowledgements). All these individuals were

over 65 years of age when I first began working with them. The description of Alluetain folk ecological and botanical knowledge presented in this account is an idealized synthesis generated by hundreds of hours of interviews with these twelve, and other, elderly people, mostly in their homes, but not infrequently outdoors in traditional economic contexts. Most data--terms in Francoprovençal dialect..."that stand for concepts" (Hunn 1977:3)[1]--were obtained verbally through both scheduled and spontaneous conversations in French. My focus on traditional knowledge of plants and the floristic environment ensured that most such words mapped to some segment of the real world. Toward the goal of establishing circumscribed semantic fields for words used to refer to botanical "space," I had to familiarize myself with the local flora. The regional vascular plant inventory of Gensac (1974) and the French flora of Fournier (1977) were of greatest use to me. For all but a few cases, that are so noted, the folk botanical taxa that I describe in Sections 4.a. through 10.a. were positively identified in dialect by at least two consultants, independently, from plant species either seen in the field in my presence, or from fresh samples that I brought to people in their homes. During fieldwork, some 1200 numbered voucher specimens were collected and determined by myself (but see Acknowledgements). It was mostly upon this set of plants that my elderly Alluetain colleagues defined core and range of meaning of their plant names, which label some 250 folk botanical taxa. The bulk of these

collections has been deposited at the herbarium of the Conservatoire et Jardin Botaniques in Geneva, Switzerland.

In Chapters 2 and 3, I introduce the "folk biotope," a folk ecological category analagous to the vegetation ecologists' combined concepts of habitat and floristic community. In most cases, verbal descriptions from memory--primarily of physical features, floristic content and use--were the bases for the definitions of the 20-some folk biotopes recognized by my elderly informants. However, because they do not equate by nature--as did the bulk of the folk botanical taxa--with such easily determined, discontinuous entities as Linnean species, core and range of meaning of the folk biotopes were considerably more difficult to establish. Ideally, local definitions of such Alluetain concepts as "deciduous coppice," "moderate wetland" or "household garden," for example, should have been determined through repeated in-field informant identifications and descriptions of biotic space. However, considering the age of my informants and the deterioration of the traditional landscape which had occurred in the last thirty years or so, this was not usually practical.

Accounts of traditional economic life, and most notably of production and procurement strategies and actions directed toward folk biotopes and folk botanical taxa, were similarly derived from informant interviews, but were also balanced by hundreds of hours of archival research. The Archives Départementales de la Savoie, in Chambéry, and to a much lesser extent, other sources (see Acknowledgements), provided access to scores of published government-sponsored

reports and questionnaires on economic conditions and production statistics dated primarily to the eighteenth and nineteenth centuries. It is thus the collective memory of some twelve elderly men and women for the period before the Second World War, recollections collaborated and complemented by consultations in local archives, that constitutes the data base for this study. The archival documents survey, which took place during the same period as the field observations and personal interviews, helped to create a sort of dynamic feedback between myself and my Alluetain partners. By jogging their memories about many aspects of traditional economic behavior long since abandoned, archival material permitted me both directly and indirectly to formulate better questions. This reciprocal give-and-take allowed us together to more effectively "salvage" the traditional folk knowledge, economic activities and land use patterns still dominant in the early decades of this century, for the most part foresaken today.

This imbrication of informant-derived data, attributed to the early twentieth century, and the historical information dating to as far back as the late fourteenth century, presents a potential problem to the reader in identifying the "ethnographic present." While I do not specifically address this problem at any other place in this study, all evidence--mostly conclusions on my part about economic stability and longevity and demographic saturation--suggests that Les Allues had reached socio-economic "climax" by at least the late Middle Ages. While clearly there were important changes to the socio-economic pattern between the fourteenth and early twentieth centuries (e.g.,

the introduction of the potato in the late eighteenth century), I have no reason to believe that a fundamental socio-economic break had occurred before the middle decades of this century. What is presented here is thus, in most cases, an idealized, synchronic account of folk knowledge as it related to plant production and procurement at some undetermined moment during the traditional period: it is the reconstruction of the basic form of a system of production that operated in a once-remote alpine valley for over 500 years. The archival materials support this claim for continuity. The elderly Alluetains that I spent so many hours interviewing experienced the final stages of this system before its destruction.

NOTES: CHAPTER 1

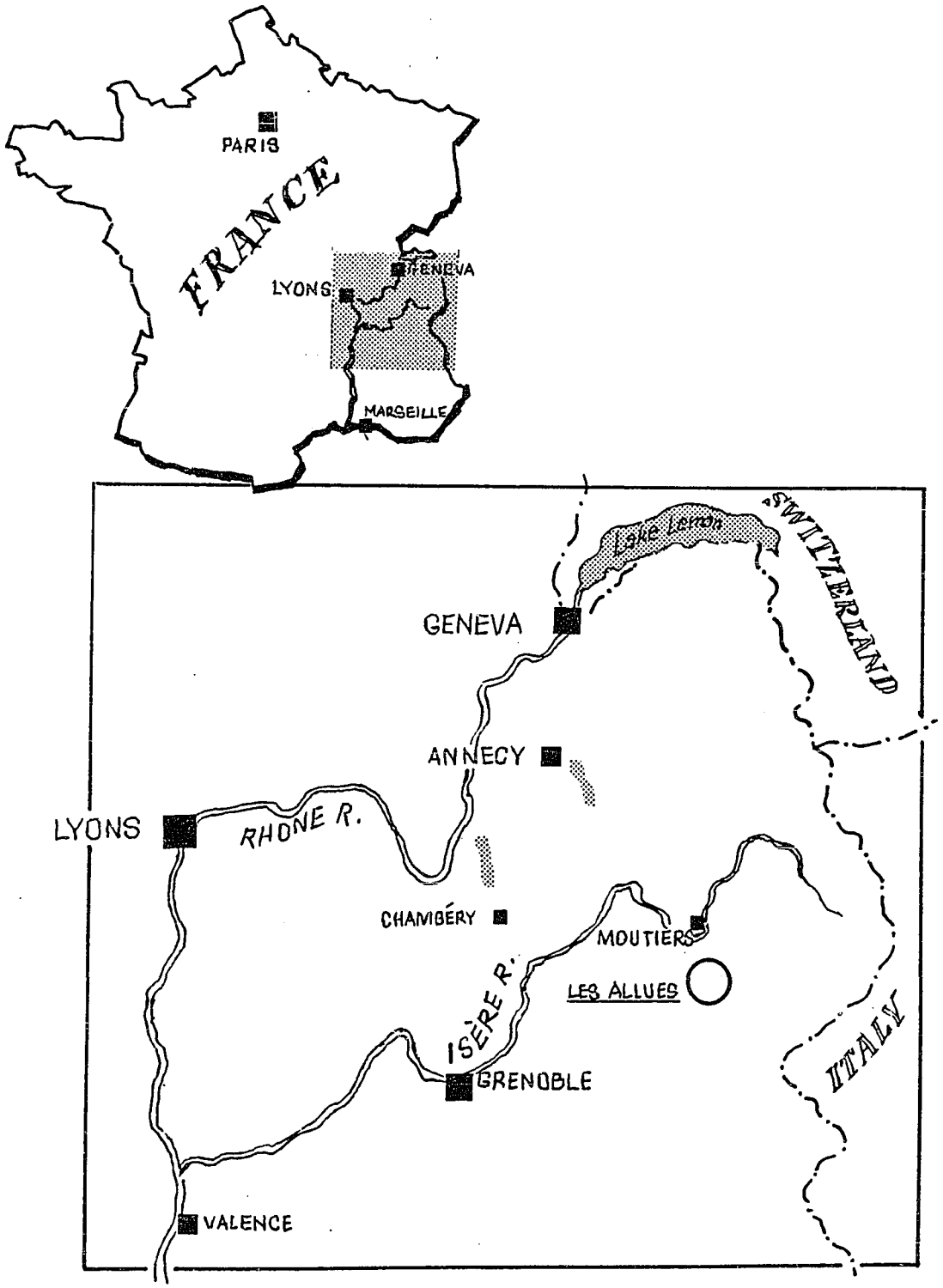
1. Francoprovençal was first recognized as a distinct linguistic group by Ascoli (1878). Since then it has mostly been characterized either as a latin-based language, or as a highly independent dialect group of French. It has been described by Tuaillon (1972:334-335), for example, as "proto-French little affected by certain northerly innovations (of French or 'langue d'oil')." This conservatism resulted in its separation from the parental stock sometime between the 5th and 8th centuries A.D. However, zones of significant intergradiation with French to the north and with Provençal to the south have regularly been noted. Pre-celtic, celtic and greek influences (as "substrats"), germanic, burgundian and francic influences (as "superstrats") and alemanic, piédmontais and provençal influences (as "adstrats") have all been documented (Abry 1979). The Francoprovençal domain stretches from Neuchatel and Friebourg to the northeast in Switzerland, south to Aoste in Italy and to the Mt. Cenis Franco-Italian frontier, then west to St. Etienne and Roanne in France. The major cities of Geneva, Grenoble, Chambéry, Bourg-en-Bresse and Lyon are within this geographical-linguistic boundary, as are the Mt. Cenis, Petit St. Bernard and Grand St. Bernard mountain passes. Only sporadically written during the late Middle Ages and early Modern periods, Francoprovençal is rapidly being lost. Even in the least accessible rural communes where it has persisted among the elderly, French, and to a lesser degree, Italian, are today--and have been for some time--replacing the rural Francoprovençal dialects among the younger generations. Many writing systems have been used by scholars, but up until recently, there has been little consensus in these efforts. In order to remain neutral, I have used the International Phonetic Alphabet (I.P.A.) for dialectal notation in this dissertation. The definite articles are lo and lu (mas. sing. and plural) and la and le (fem. sing. and plural). The syllable following the apostrophe is accented. A phonemic analysis was not undertaken and undoubtedly idiosyncratic elements of speech have crept into this transcription. Two Francoprovençal linguists recently joined forces to propose a standardized notation system called "la graphie de Conflans pour le Savoyard" (Abry and Tuaillon 1985), but time did not permit me to convert to this system.

CHAPTER 2

Introduction to the Physical and Socio-Economic Environment of Les Allues

Beginning in the spectacular Vanoise Massif in the northwestern, Graian Alps, and fed by a myriad of glaciers flanked by many peaks over 3000 meters, the Isère River zigzags through narrow gorges and widened plains as it descends to the Rhone River some 250 kilometers to the southwest near Valence. The upper and middle reaches of the river--from the Galise Glacier to Albertville--constitute the high mountain region and "petit pays" of the Tarentaise (average altitude of 1985 m, Blanchard 1943:435), in what is today the French department of Savoie (see Figure 2a). A former Roman province (Darantasia), an independent Earldom during the Middle Ages (Comté de Tarentaise, to 1560), then a province of the Duchy of Savoie (1560-1713), and later of the Kingdom of Sardinia (1713-1860), the Tarentaise now has no political validity. But while wars, alliances and other forms of state maneuvering resulted in considerable administrative and boundary changes in the Tarentaise over the last 1500 years, the smaller level socio-political units--those of "community"--appear to have remained mostly the same. Since at least the late Middle Ages, from the period when the earliest local documents are available, up to this very moment, the five "mandements" and now cantons of the Tarentaise have been made up of some 60 to 70 small scale semi-autonomous peasant communities, each with a self-defined social and political reality,

Fig. 2a: Les Allues, Savoie, France



each speaking a form of the highly distinct dialect group of French known as Francoprovençal. With its fourteen hamlets (at one time, fifteen) and 90 km^2 of territory, Les Allues is one of ten such communities that constitute the southernmost of the Tarentaise cantons, that of Bozel.

In the contemporary French administration, the community of Les Allues with its 14 hamlets and 1218 inhabitants (in 1982) is known as a commune, the smallest unit in the national administrative hierarchy. But from the 13th through the 15th centuries, at the time the Archbishop, Count of Tarentaise, held Les Allues in fief, and long before Les Allues, the Tarentaise and Savoie definitely became a part of France (in 1860), the general head term communitatis ("community") or the ecclesiastical term parochie ("parish") were already being used on official documents to refer to such socio-political groups as the Alluetain community (e.g., communitatis allodiorum, see Appendix 1). When the administrative language switched to French, after the Dukes of Savoie brought all of the Tarentaise within their jurisdiction (late 16th century), these latin head terms were replaced by equivalent terms in French (communauté, paroisse). Not until the late 18th century and Bonaparte's occupation of Savoie (then a province of the Kingdom of Sardinia), did the term commune come into regular use. But whether it was called a community, parish or commune, Les Allues has clearly constituted--from at least the Middle Ages and probably from a much earlier period--what Wolf (1957) then Netting (1981:VII) have called a "closed corporate community," characterized by a high

rate of endogamy and exclusive or near-exclusive rights of community members to land and resource use within the valley (see Perouse 1911 for details of the origins and defining features of the Tarentaise communities).[1] All evidence indicates that an agro-pastoral, hunting and gathering mixed economy, based primarily on the objective of self-subsistence, was practiced from the time that the valley was permanently settled in the late Bronze Age/early Iron Age (500 B.C. approximately) until the early decades of this century.

The physical environment

The valley of Les Allues (45°26'N, 6°34'E) exhibits many physical and climatic similarities to other temperate zone alpine valleys (see esp. Burns 1963; Rhoades & Thompson 1975). Long and narrow (approximately 21 kilometers by 4.5 km in average width = 90 km^2), and rising from 600 m to 3563 m on a slightly off-center N-S axis, the valley is equivalent to a natural physiographic and hydrographic entity on the western side of the Vanoise Massive (see Fig. 2b). It is drained by the Doron des Allues, a once rapid little torrent (now dammed and mostly diverted for hydroelectric purposes) which originates in the Gebroulaz Glacier at the southern extremity of the commune and empties into the Doron de Bozel at Brides-les-Bains, 1 km north of its current administrative boundary. Les Allues and the valleys to the north and east form a larger hydrographic unit drained by the Doron de Bozel which, 5 km to the west, joins the Isère River at Moutiers, the commercial and once administrative metropolis of the Tarentaise.

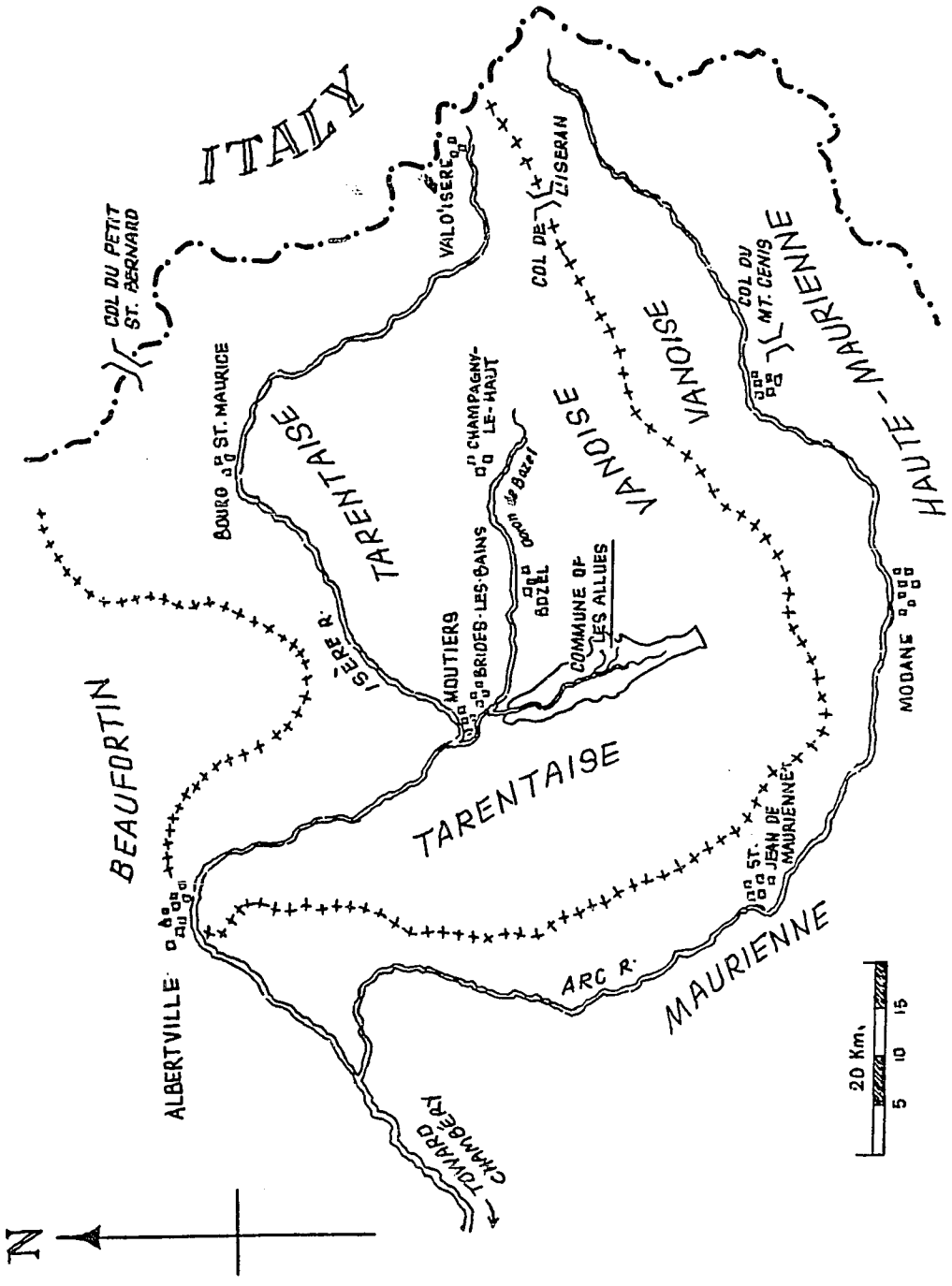
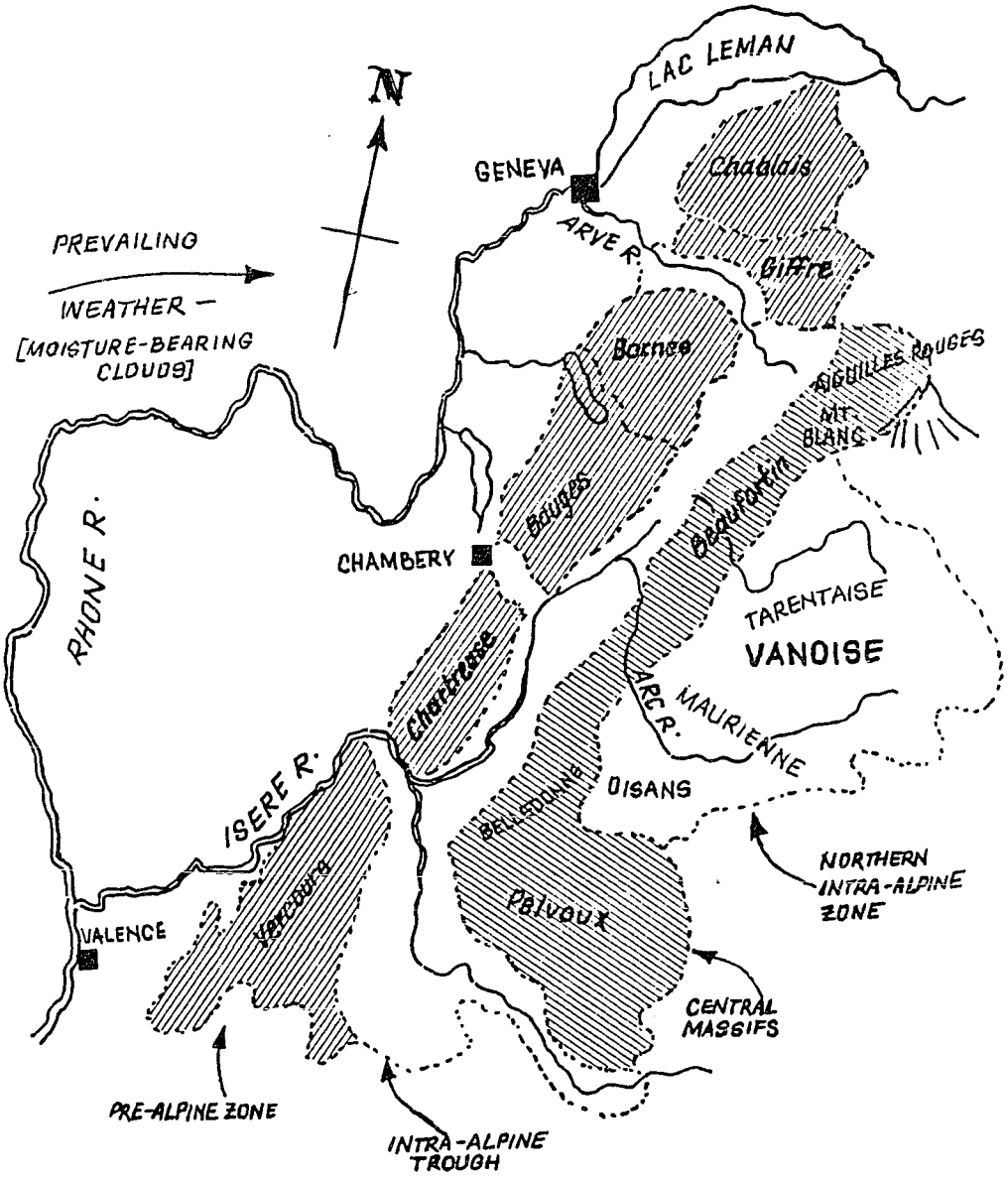


Fig. 2b: The Vanoise Massif

The neighboring Maurienne (1966 km^2), the most distant Oisans (1077 km^2), and the Tarentaise (1894 km^2) together form what geographers call the northern French intra-alpine zone (Blanchard ibid.:189, Fig. 2c). Though climatic and vegetational differences have long been noted between these three regions, biogeographers often group them with the Val d'Aoste and the Val de Suse in Italy to the east and with the Valais in Switzerland to the northeast to form the larger climatically and floristically distinct Austro-Occidental Alps (Briquet 1891; Onde 1938b). This northern interior alpine area is dominated by a dry continental climate and this, along with the presence of considerable numbers of thermophilic plant species, distinguishes it from the pre-alpine regions and central massifs immediately to the west.

Precipitation ordinarily arrives in this zone by way of westerly oceanic winds bearing rain and snow, but in general moisture-laden clouds release most of their charges on contact with the first alpine massifs encountered (especially the massifs of les Bauges, la Chartreuse, le Beaufortin and le Belledonne...see Fig. 2c). Entrenched behind these massifs, the three intra-alpine regions are much drier. Les Allues (main hamlet, 1190 m) receives approximately 900 mm of precipitation per year (mostly in spring and fall), while only 45 km to the west at Grande Chartreuse, over 2000 mm are annually recorded. Valleys further east are even drier; Termignon (1290 m) in the Haute Maurienne, and less than 20 km from Les Allues, receives approximately 700 mm of precipitation per year (Balseinte 1955).

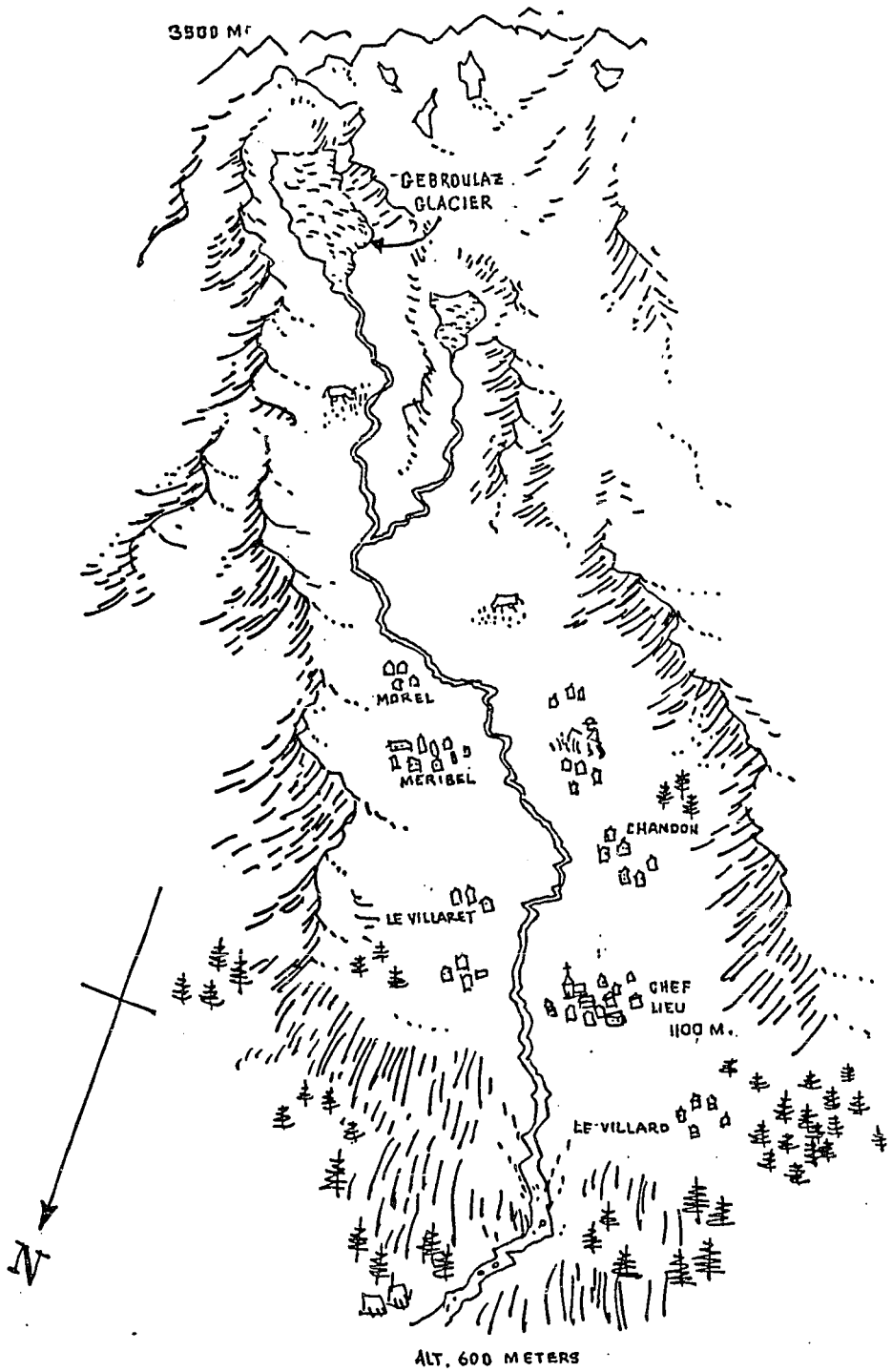
Fig. 2c: The Intra-alpine Zone of the Northern French Alps



In winter, precipitation generally occurs as snow which forms snowpacks of varying depths from valley to valley. Though exact information is not available, snow remains on the ground in the habitation zone of Les Allues (1000 m - 1550 m) for approximately 4.5 to 5 months of the year (December to April). However, the valley is well exposed in winter to sun and mild winds and is clearly more favorably situated in comparison to valleys of the pre-alpine zone and central massifs to the west which are subjected in winter to much heavier snowpacks and to regular bouts of cloudy and foggy weather. Les Allues is also well disposed in relation to many of its close neighboring communes within the Tarentaise. Valleys oriented on east-west axes and/or those more narrowly constricted physiographically may be without sun for several weeks to several months of the year (Blanchard 1943:518). Champagny-le-Haut, for example, less than 10 km to the east, because of its deeper and narrower valley walls, is snow-covered for six months of the year on the average. Val d'Isere, the highest commune in the Tarentaise (1855 m), is annually snow-covered for an even longer period.

Since the valley of Les Allues rises from 600 m to nearly 3600 m, snow depth within the commune itself also varies a good deal. Where the Peclet-Polset glacial system extends into the upper reaches of the valley at its southernmost extremity, the 5 km long Gebroulaz Glacier averages 40 m in depth (see Fig. 2d). This contrasts sharply with the lower parts of the commune, which are often mostly snow-free for much of the cold season. In the middle reaches of the valley, differential

Fig. 2d: Bird's-eye View of the Valley of Les Allues



altitude, topography and exposition result in irregular rates of snow depth and melt from site to site.

While it is well known that the region surrounding Moutiers is geologically complex (Blanchard 1943:509; Goguel & Pachoud 1979), the valley of Les Allues is atypical in having a fairly uniform carboniferous (coal bearing) sedimentary bedrock, though calcareous formations can also regularly be found. Surface soils of varying depths, formed principally from shale and sandstone, are mostly acidic. The crumbly nature of these soft coal-bearing rocks allowed for significant glacial action during the Pleistocene. The result is a widened syncline at several points in the valley. This physiographic feature, along with the N-S orientation of the valley, contributes to greater insolation and better aeration than many of the neighboring valleys. Relief is nevertheless highly variable, ranging from medium to small plateaus and mild to steeply sloped hillsides to rock outcroppings, precipices and craggy mountain peaks.

The flora

While primarily engendered by temperate zone continentality (= medio-european influence), the spontaneous flora of Les Allues and that of the intra-alpine zone in general are also influenced by two secondary climatic forces: mediterranean and nordic (Bartoli 1966: 98). On the northern margin of the Mediterranean rim, the Tarentaise provides many examples of a mediterranean flora that have apparently penetrated the region by way of the lower mountain passes. At the other end of the climatic scale, nordic influences are even more

marked, the result of snow, ice and cold common in the upper reaches of the elevated communes like Les Allues. High altitude has much the same effect on vegetational configuration as does high latitude and it is normal in the Vanoise for many features of the arctic-alpine flora to descend considerable distances down into the valleys where cooler microclimates permit. Despite greater average altitude, the more open and heavily glaciated landscape and protected character of the intra-alpine valleys makes for more favorable growing conditions than in the more tightly constricted valleys of the lower, wetter massifs to the west (e.g., Chartreuse, Belledonne). Better insolation and mild winds in the intra-alpine zone, coupled with shallower snowpacks, ensure an earlier and more rapid spring melt, and thus more precocious and vigorous plant growh (Blanchard ibid.:228+).

If one stood earlier this century at a vantage point from where most of the length of the valley could be seen, the most striking feature of the spontaneous Alluetain flora would undoubtedly have been the natural vegetational zonation (from upper foothill to arctic-alpine ecological zones), the result of the narrowly compressed climatic gradient.

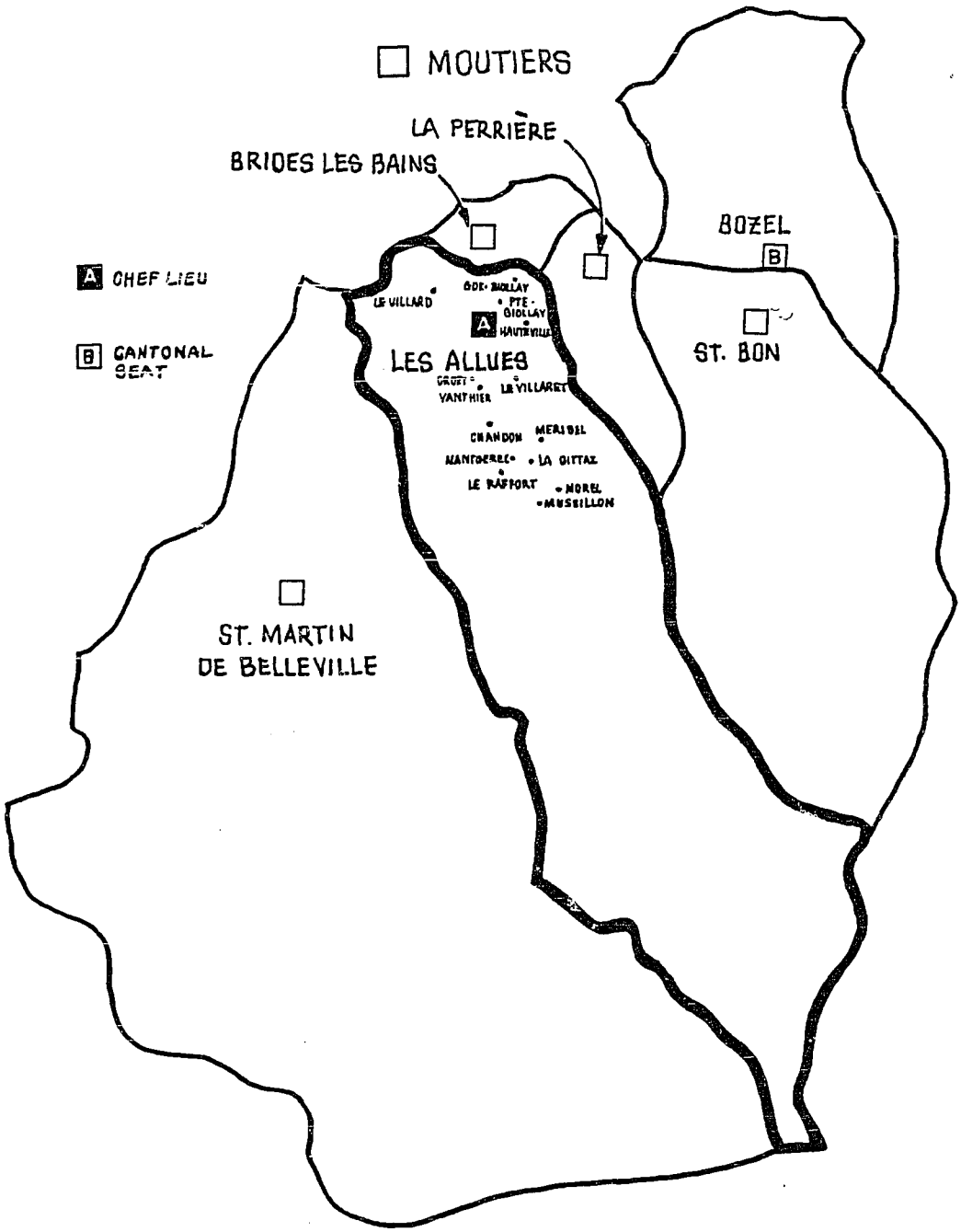
As in all alpine valleys, natural ecological zonation in Les Allues actually occurs on two planes (Burns 1961:23), from the northern mouth of the valley (600 m) lengthwise for some 20 km to the southern uppermost extremity of the valley (3500+ m), and perpendicular to this plane, a much more narrowly compressed gradient exists between the Doron floor and the near parallel crests of the V-shaped

valley. In the lower reaches of the commune, one can climb from around 600 m in the upper foothill zone tc above timberline and into the alpine zone (1800 - 2000 m) in less than 3 km simply by proceeding from the valley floor up the east or west-facing valley walls to the ridges separating Les Allues from the neighboring communes of St. Martin de Belleville and St. Bon (see Fig. 2e). Primarily, therefore, because of the limitations created by the steep climatic gradient, but also because of differential exposure, drainage, snow melt and soil conditions, etc., natural species distribution is highly variable, though predictably so, within the commune. Approximately forty phytosociological groupings (type Braun-Blanquet, organized at several levels of inclusion) have been recognized within the five major ecological zones (foothill, montane, subalpine, alpine, arctic-alpine... adapted from Marcuzzi 1979; see Gensac 1974 for the phytosociological groupings of the valley).

The socio-economic environment: early formation

The natural topographic, geologic and floristic diversity of Les Allues and other intra-alpine valleys attracted human beings soon after the ice sheets of the Wurm glaciation receded to approximate contemporary form (10000 - 9000 B.C., Rousset 1976). It is generally believed that for the next 6000 years or so hunting and gathering bands moved into the alpine valleys in summer and returned to winter at lower elevations (Bocquet 1976a). The durable features of this seasonal economy suggest that Mesolithic people gathered at least snails (Helix ssp., Boone 1976) and hunted several mammalian species

Fig. 2e: Les Allues and Adjacent Communes



on the order of those reported for the middle Neolitic by Bocquet (1976a), especially roe deer (Capreolus capreolus) and red deer (Cervus elaphus), alpine ibex (Capra ibex), chamois (Rupicapra rupicapra), wild boar (Sus scrofa) and beaver (Castor fiber) (but see Clarke 1976, for a description of the role of gathering). But by perhaps the fourth millenium B.C. the economic base was changing in the alpine regions. Knowledge of agriculture and domestication of animals was progressing north through the Rhone River valley from the Mediterranean base where it had been established since approximately 6000 B.C. (Courtin et al. 1976). By 4500 B.C., a second independent Neolithic movement was making its way into northeastern France by way of the Danubian corridor. Somewhat later during the Bronze and Iron Ages (1800 B.C. - Birth of Christ), the Cordial (Mediterranean) and Danubian movements met and became indistinguishable in Switzerland, eastern France and northwestern Italy.

In general, by around 3000 B.C. much of France's arable land was under cultivation (op. cit.). The Alps were also occupied by agricultural populations. Often called Ligurians (e.g., Dechelette 1924), these agriculturalists were present in the mountainous regions of the northern Alps from the Copper Age (2500 B.C.) according to Bocquet (1976a:296), but evidence is not available to specify precisely when and to what extent these pre-celtic people first installed themselves in the higher valleys like Les Allues. Actual sites found at the higher elevations are uncommon before the Bronze Age (1800 - 700 B.C.).

There is archeological evidence which clearly shows that the valley of Les Allues was permanently inhabited by human beings by the Iron Age (700 B.C.+...Prieur 1977). But generalizing from neighboring valleys where the prehistoric record is more complete, it is probable that human groups practicing a mixed agro-pastoral/hunting and gathering economy occupied Les Allues from at least the late Bronze Age: 1200 - 700 B.C. (Bocquet 1976b). Over the next 2500 years or so the inhabitants of Les Allues successfully colonized, used and transformed the natural environment and acquired the knowledge necessary to stabilize the economic potential of their alpine valley at a level which sustained significant population densities through the mid-19th century (see Table 2a). Such socio-economic success appears to have been achieved primarily by the transformation of the natural landscape into arable and pasturable lands. In most cases this necessitated extensive deforestation, the removal of other woody and herbaceous species from their natural habitats, the displacement of hundreds of tons of rocks and sometimes the canalization of small watercourses. Cleared areas have been used for agriculture (as cultivated fields, gardens, hemp plots, hayfield-orchards, vineyards), for haymaking and grazing (montane and subalpine hayfields and subalpine and alpine pastures) and for construction of habitations and other buildings. Not only has there been an important movement of domesticated and invasive plants into the commune since prehistoric times--to complement the approximately 1000 native plant species (Gensac, pers. comm.) --but many habitats and plant communities have been created in the

Table 2a: Population of Les Allues and Density per km^2 (based on surface area of 91 km^2 before 1857, 86 km^2 after 1857)

Year	Population	Source	Density (inh./km^2)
1561	1322	La Gabelle du Sel, ADS, SA 2086	14.6
1755	967	ADS, C579	10.6
1756	967	Rousseau 1960	10.6
1757	965	Rousseau 1960	10.6
1758	1025	Rousseau 1960	11.3
1773	1205	Hudry (Pers.comm.)	13.2
1776	1066	Rousseau 1960	11.7
1789	1262	ADS, 1FS594	13.9
1798 ("An VIII")	800	Rousseau 1960	8.8
1799 ("An IX")	1167	Rousseau 1960	12.8
1801	1132	Rousseau 1960	12.4
1806	1291	Rousseau 1960	14.2
1819	1300	ADS, 1FS594	14.3
1822	1306	Rousseau 1960	14.4
1838	1299	Rousseau 1960	14.3
1848	1362	Rousseau 1960	15.0
1858	1396	ADS, 1FS594	16.2
1861	1029	Rousseau 1960	12.0
1876	920	ADS, M125	10.7
1881	855	ADS, M125	9.9
1886	797	ADS, M125	9.3
1891	811	ADS, M125	9.4
1896	784	ADS, M125	9.1
1901	771	ADS, M125	9.0
1906	752	ADS, M125	8.7
1911	724	ADS, M125	8.4
1921	606	ADS, M125	7.0
1926	571	ADS, M125	6.6
1931	534	ADS, M125	6.2
1936	522	ADS, M125	6.0
1946	505	A.S.A.D.A.C.	5.9
1954	648	A.S.A.D.A.C.	7.5
1962	716	A.S.A.D.A.C.	8.3
1968	812	A.S.A.D.A.C.	9.4
1975	1008	A.S.A.D.A.C.	11.7
1982	1218	A.S.A.D.A.C.	14.2

different ecological zones directly or indirectly as a result. A rapid survey of northwestern alpine archeological and early ethnohistorical evidence indicates that, with the exception of the potato (introduced in the 18th century), all the major resource groups and productive activities of the traditional agro-pastoral period--as they were known in Les Allues from the 18th through the early 20th centuries--were potentially in place by the second century A.D. at the latest (Meilleur n.d.). While technological, demographic, resource and management changes occurred over the years, it would appear that the basic agro-pastoral mixed subsistence economy changed little over the next seventeen centuries until its collapse in the mid-twentieth century and its replacement by a tourism-oriented service-based economy.

Generalities of settlement, land use and making a living in mountainous Savoie: 18th through the early 20th centuries

Settlement pattern, land use and traditional economic life in the mountains of Savoie were first directly studied or reported in a scholarly way in the 18th century (Costa 1773) and especially in the 19th century (Tochon 1871; Verneilh 1807). The dependence of mountain populations upon the combined production of cereal grain agriculture and cow, sheep and goat pastoralism was immediately recognized in this early work. Considerable detail was provided of the different land types used, of management strategies, of the tools and technologies employed, of the crops planted and of the domesticated animals. Rarely, however, were these management techniques, crop plants, etc.,

attributed to specific localities. The reader was often left to wonder where, in the great ecological diversity of Savoie, technique "x" was practiced or crop "y" was grown.

Two small turn-of-the-century "ethnobotanical" monographs added significantly to knowledge of traditional domesticated, and up until then little known, wild plant use in the mountains of Savoie (Chabert 1897; Constantin & Gave 1908). The latter publication even cited place names, plant names in dialect and occasionally the provenance of the data. More was added to the growing body of knowledge related to traditional land use and economy in the northern French Alps, and particularly in Savoie, in the decades that preceded and followed the Second World War (1920 - 1960): geographers associated with the Institute of Alpine Geography (Institut de Géographie Alpine) at the University of Grenoble, as well as several local agronomists, contributed numerous articles and several impressive monographs on land use, technology and productive activities. Much of this work, however, as was the case earlier, can best be appreciated at the "macro" level. French scholars interested in land use and economy in the northern Alps have been primarily concerned with large human populations, their implantation in large geographically recognized zones and with general economic strategies employed in such zones (see especially the geographers Blanchard 1943; Onde 1938a, b). This work has been complemented by studies on Savoyard demographics (Préau 1963; Rousseau 1960), agricultural technology and land use (Collomb 1976; 1977a; Collomb & Raulin 1979) and by several quite detailed descriptions of

domesticated plants and animals (Cadoret 1918, 1929; Guicherd 1930). A number of studies concerning specific sectors of production also exist (e.g. the forests of Savoie...Mougin 1919; the vineyards of the alpine regions and of Savoie...Blanchard 1930, Perrier de la Bathie 1897, Tochon 1887; the pastoral economy of the alpine regions and in Savoie...Arbos 1922, Rey 1930; fishing in the major Savoyard lakes... Collomb 1977b, Plagnat 1956; crop rotation in the cultivated fields in the western Alps...Monheim 1954; etc.). However, in all this very considerable amount of work, we are only rarely treated to glimpses of settlement pattern, land use and economic activity at the community level or below; that is, of the organization of settlement, land use and production in the context of individual socio-economic systems. In this part of the world where the insider's view of such activity and strategy has been mostly ignored by researchers, it is not surprising that geographers, agronomists, historians and ethnographers alike have not recognized (or have chosen not to recognize) the levels at which most traditional production was actually occurring. For, as we will see, even while significant amounts of surplus have long been reported as being generated for the market at the levels of region, canton or community (especially milk products and livestock, both from the pastoral sector of production, see Chpt. 10), in Les Allues and apparently in virtually all mountain communities in the northern Alps, most peasant economic effort was oriented toward self-sufficiency of individual households without mediation by exchange of any kind, and

it was overwhelmingly at this level that production was traditionally organized (see especially Netting 1981; Niederer 1980).

Introduction to traditional Alluetain settlement, land use and economy

As far as can be determined from a reading of local historical documents, the settlement pattern, land use and economic activities as they were found in the early decades of the 20th century were, with the exception of the 19th century amputation of one hamlet and of potato cultivation, little changed from that which existed in Les Allues some 500 years earlier (see Appendix 1; Meilleur 1980). After the coming of the railroad to Moutiers in 1878 and the installation of several electro-metallurgical factories along the Isère River at and below this town and in the upper Bozel valley, the conversion of peasant subsistence agro-pastoralists to "worker-peasants" (Franklin 1969) appears to have been the first major shift in economic evolution in many of the communes in the cantons of Moutiers and Bozel since perhaps prehistoric times. Alluetains, however, were only sporadically attracted to this somewhat distant wage labor opportunity, preferring either to practice agro-pastoral activities or to emigrate indefinitely to other regions of France or to other countries in hopes of finding better paying jobs. In the early 20th century, though local jobs were had by some in road construction and maintenance, logging, gardening or in odd jobs at the thermal station of Brides-les-Bains, etc., the dramatic break with the traditional land use and economic past did not occur until after World War II with the rapid

installation of a mountain and ski tourism service-based economy. Before this, a peasant mode of production predominated in the many individual households of the 14 Alluetain hamlets (see especially Chayanov 1967; Thorner 1962).[2]

Alluetain settlement pattern

The traditional Alluetain settlement pattern of 15 dispersed hamlets, as elsewhere in the Alps (Netting 1981:42+), appeared to be dictated at least in part by the natural potentialities of the environment and by the related cultural constraints which emerged as the economic system developed over time (following Alland 1975:66). Limitations imposed on the placement of village sites by steepness or by the presence of year-round ice and snow, or those imposed by similar factors on the growing of certain crops, must be considered in attempting to understand settlement pattern.

Today the valley of Les Allues is occupied by fourteen hamlets dispersed within a 1.5 km wide and 5 km long section of mid-commune between 1000 m and 1520 m above sea level. Approximately 7.5 km^2 (of 90 km^2) or about 8% of total communal territory can thus be called the habitation zone. Several of the contemporary hamlet names were found cited in documents dating to the late mediaeval period (e.g. in 1390, see Appendix 1) suggesting that the colonization of the valley was completed by that time, if not much earlier (all 15 original hamlets were cited in 1560, see "la Gabelle du Sel," ADS, SA 2086; the "Cadastre Sarde" of 1731 placed all hamlets in their contemporary locations, ADS, Mappe 445). Eight hamlets--Grande Biollay (1000 m),

Petit Biollay (1020 m), Le Villaret (1175 m), Hauteville (1228 m), La Gittaz (1316 m), Mussillon (1350 m), Méribel (1395 m) and Morel (1520 m)--were inserted at distinct intervals on the east valley wall. Of the remaining six hamlets located on the west valley wall, five--the Chef-lieu (1100 m), Le Cruet/Vanthier (1200 m), Chandon (1257 m), Nantgerel (1310 m) and Le Raffort (1345 m)--were more closely grouped; the sixth--Le Villard (1217 m)--was found several kilometers to the north on a large well exposed plateau (see Fig. 2d). A fifteenth very small hamlet, Bridaz, was located at the northernmost point of the valley, near the confluence of the Doron des Allues and the Doron de Bozel (600 m). Though historically part of the commune, the discovery nearby of hot mineral springs in 1818 led to the incorporation of Bridaz, in 1847, into the new commune of Brides-les-Bains, which has now been transformed into a thermal spa and small summer resort. All traces of the original hamlet have disappeared.

The most populous hamlet, today called Les Allues by the younger generation but known by the older people as the "Chef-lieu" ("Chief-place") and in some historical documents as the "village avec l'église" ("village with the church"), was distinguished from the other hamlets by the presence of the (Roman Catholic) church, the cemetary and the presbytery, and more recently, by the mayoral building, several shops and one or two small hotels. This largest village is otherwise similar to the remaining hamlets. With the exception of Le Villard, all hamlets were situated within 500 meters of the Doron des Allues, the traditional source of mechanical power in the commune.

Along this watercourse and its major affluents were located the 12 water-powered flour mills and the several sawmills and forges which transformed raw materials into consumable products for Alluetain families. All fifteen hamlets were connected by a rough carriage road and by a web of footpaths which linked each with all other regularly visited areas of the valley. Only the steepest and densest forest tracts, or the highest snow-covered or rocky corners of the commune, were not joined to this network.

The Alluetain hamlet

The Alluetain hamlet was essentially an agglomeration of barns, stables and single family residences that was occupied all year round. This contrasts with the pattern found in many mountain communities elsewhere in Savoie where the households--or parts of households--predictably moved to several different intra-communal residences throughout the year (Arbos 1922; Meilleur 1985). In all Alluetain hamlets, the constructed area was concentrated around one or more small public squares or "places," each of which was furnished with a freshwater basin and a bread oven. Interspersed among the buildings were lanes and family gardens. Somewhere on a margin within or near this mass of buildings, lanes and gardens, one or more apiaries might also be found, as would be the retting pits for curing hemp fiber. A chapel was situated in or near each hamlet.

Canalized water was found in all hamlets in the early decades of this century. The technology involved in bringing water to the many public basins appears to be very old. Catchment holes--usually lined

and covered with wooden planks--were dug at natural springs some distance above each hamlet and the water was brought to the basins in shallowly buried wooden pipes. These simple hydraulic networks needed periodic upkeep, and like all communal property upon which collectivities of different size depended, the group of people directly affected maintained the system by corvée labor. Each hamlet, depending on its size, had one to several basins with fresh year-round running water. Dirty clothes, and all sorts of tools and utensils were cleaned there.

In each hamlet, bread was baked in the communally owned oven once every two weeks in summer and once a month in winter. While people waited to bake, communal and hamlet news--usually posted on a bulletin board on one of the oven walls--might be discussed along with other events. Baking, constant need for water and continual movement between houses and barns/stables brought people into frequent contact at the central squares. Travelling merchants would set up here, and it was in these small "places" that animals would be assembled in spring and fall before being taken into the communal grazing lands or "commons" (see Chpt. 10).

While free standing houses occurred in the hamlets, the houses were more commonly adjoined in east-west (upslope-downslope) rows. These often paralleled the fall-line and were perpendicular to the general orientation of the hamlet squares, the carriage roads and the N-S length of the valley. Such house rows were staggered in a way that permitted the orientation of most facades--with their small

wooden balconies--toward the south. This layout ensured good water runoff via the lanes which separated the house rows. Houses themselves were usually multi-storied but simple. Most were equipped with a cellar below, a kitchen/parlor on the main floor and two to several bedrooms and a granary on the second floor. A square wooden outhouse, often with its entrance on the second story balcony, and extending to the ground to permit easy cleaning, completed the structure. Older houses were built almost entirely of local materials. Rock and mortar walls, sometimes up to one meter thick, ensured good insulation. The exterior was rough-cast with local plaster, usually whitewashed and sometimes painted with a single brighter color around the doors and windows. A wooden upper frame supported the roof, traditionally of local slate, spruce shingles or sometimes of rye thatching (see also ADS, C870).

The combined barn/stables, considerably more voluminous than the houses, were imposing structures, usually passing 10 meters in height. Like the houses, they were constructed of local materials: a massive rock and mortar foundation insulated the stabled animals in winter, while a complicated wooden frame above was designed to allow controlled air flow over the hay stored for winter fodder, usually on two levels. Normally the barn/stable was covered with shingles, wood chips or thatch, but because of the presence of several factories at Moutiers since the 19th century, many can be found today covered with flattened metal barrel lids "gleaned" from these enterprises. Like the houses, barn/stables were often joined in rows paralleling the

fall-line, with their fronts facing south for warmth and drying winds. Unlike other regions of the Alps where human and animal living space was literally interconnected (Burns 1959:578), in Les Allues and other communes in the canton of Bozel the two environments were distinctly separated (see also Robert 1939). While most families did pass the winter evenings in the stables with the animals to conserve fuel, often in animated groups of friends and relations (= la veja/"la veillée"), each family would return to its own house to sleep.

The traditional Alluetain economic unit--the nuclear family-- and the organization of production: an ethnoecological approach

While the classic combination of cereal grain (winter rye, spring barley) and potato agriculture, cow, sheep and goat pastoralism and hay-making (Burns 1963:134 = "mixed mountain agriculture") formed the productive core of the Alluetain economy early this century, significant effort was also directed toward the production of a number of lesser known resources in the cultivated fields, toward several less well known agricultural sectors (fruit tree arboriculture, gardening, viticulture, bee-keeping, etc.) and toward such non-agricultural activities as gathering, hunting and fishing whose economic contributions have rarely been adequately documented. Even though work in some of these economic sectors was regulated by collectivities of varying size (hamlet, quarter, commune, intercommunal special-interest groups), the fundamental unit of production in Les Allues was clearly the nuclear family.

The Alluetain nuclear family was similar in its configuration--ideally husband, wife and children, residing independently--and in its use of land, resources and technology from one hamlet to another, from the lowest in the commune, Grand Biollay at 1000 m, to the highest, Morel, at 1520 m.[3] There was not a great deal of intra-community specialization, though the specific ecological situations of the hamlets, wealth differences among families, and personal preference in the selection and use of some resources, contributed to making each household's productive strategies more or less unique. Apart from the small income derived from the summer rental of milk-producing animals to cheese-making specialists, from the sale of livestock, timber and other small surpluses, and from occasional wages or payments in kind earned in "non-agricultural" trades (such as miller, blacksmith, rope-maker, healer, logger, housebuilder, castrator, etc.), most economic effort was expended by the nuclear families in producing or procuring themselves the foods and other commodities each would consume during a given year.

Because of the limits imposed upon population expansion and land use by the proximity of similarly organized neighboring communities, the great majority of economic effort expended by the Alluetain families took place within the 90 km^2 of the valley of Les Allues. This communal space was partitioned by Alluetains into some twenty natural and human modified locally defined and named habitat types or folk biotopes (see Chpt. 3). While of obvious significance to the cognitive organization of the valley as an intellectually perceived

physical and biotic environment, in most cases each was also a land use category of importance in structuring economic activity (the major folk biotopes being the cultivated field, hayfield, garden, hemp plot, hayfield-orchard, vineyard, deciduous coppice, coniferous forest and pastureland). Maintenance of the nuclear family was achieved mostly as a result of work directed by the household members--through conjugal cooperation and a sex and age division of labor--toward the land each would gain access to in the various folk biotopes. Work was, in most cases, oriented toward the production or procurement of folk botanical taxa--in the form of cultural resources--which were variously associated with the folk biotopes. In fact, some 250 folk botanical taxa were recognized and named in Les Allues and subsets of these taxa were associated with each folk biotope. Each subset was unique and constituted the folk phytocoenosis of the folk biotope to which it was perceptually linked.

The dispersal of the twenty-some folk biotopes within the communal territory was conditioned both by natural ecological parameters and by such cultural factors as settlement pattern and the evolved economic system. In effect, while concrete environmental constraints limited or relegated certain folk biotopes to specific localities within the effective economic space (e.g., vineyards to below 1000 m), other folk biotopes were more easily manipulated by humans. Each of the 14 hamlets within the 1000 m - 1520 m habitation zone was surrounded by a more or less similar set of some 15 natural and domesticated folk biotopes. Clearly, over time there had been a

conscious effort on the part of the inhabitants of Les Allues to structure space and biota in this manner, and in fact, with several notable exceptions, it was toward the folk biotopes situated within several hundred yards of the hamlet of residence that each nuclear family directed the majority of its productive energies.

Land use within and around the habitation zone

The 14 hamlets were not only centers of social, sometimes political and during the rogation period, religious activity, they were also centers of intense economic activity. It was in the hamlets that nearly all domesticated animals were wintered and where nearly all the animal and vegetable products were stored and/or transformed for consumption. Small fenced gardens were also important features of each Alluetain hamlet. As we will see, two variants of this folk biotope (lo kurti, see Chpt. 5) can be distinguished. Most households possessed at least one garden parcel within the confines of the hamlet of residence, ordinarily in front of the house or in close proximity to it. Other gardens, often grouped together and sometimes collectively fenced, could be found at the periphery of each hamlet.

The vast majority of all land immediately surrounding the hamlets had long since been transformed into many highly productive folk biotopes that were disposed in a generally predictable fashion in relation to each hamlet. Household gardens were found within, or at the exterior margins, of the hamlets. In most cases, they gave way immediately to a localized group of hemp plots (lu tsnavje, see Chpt. 5), then, in all directions surrounding the hamlets, to the cultivated

fields (lu tsã, see Chpt. 4) where the staple crops were grown (winter rye, spring barley and since the late eighteenth century, potato). These were succeeded in turn by the hayfields (lu pra, see Chpt. 8), critical to the production of fodder necessary to overwinter livestock, and in the hamlets below 1250 m, by hayfield-orchards (lu vɛrdʒe, lu pra, see Chpt. 6), where up to 15 different varieties of apples and pears were grown. Beyond the hayfields, but also in areas of more difficult microrelief closer in, could be found deciduous coppice (lo rɛbje, see Chpt. 9). From this folk biotope was drawn a part of the Alluetain family's fuel needs.

With a few exceptions, almost all the land in the entire commune that could be grouped into these six folk biotopes (cultivated field, garden, hemp plot, hayfield-orchard, hayfield, deciduous coppice) was dispersed in this manner, generally within a 500 meter radius of each hamlet. The land incorporated into these six folk biotopes was highly fragmented into thousands of parcels, most of which were privately owned and directly exploited by their owners and/or their spouses. The inhabitants of a given hamlet constituted the majority owners of those properties in and around this same hamlet, thus linking them by ownership and by constant use to the various folk biotopes which surrounded their residences. Early this century, both men and women inherited equal amounts of properties within all folk biotopes of the parental estate.[4] Upon marriage, the properties brought to the union by both partners were formed into a new familial estate and it was toward these properties that the bulk of each couple's productive

effort was directed during the course of their lives. Clearly, if the two spouses came from widely separated hamlets, some arrangement had to be made. The common solution was to exchange properties with people in similar, but inverse, situations.

Beyond the hayfields and the deciduous coppice, usually more than 500 m from the hamlets and generally upslope from them, were the mid-elevation communal grazing areas or commonlands (lu kmɔ̃/"les communaux"/"the commons") formed mostly of the pastureland folk biotope (lo paturadzo, see Chpt. 10). It was in these commons that animals were pastured for several weeks--in spring and fall--before and after the specialized summer milk-producing season in which animals were moved into the alpine pastures (le mɔ̃tɛ̯e) at higher elevations. On the lower margins of the commonlands were found many privately owned "montagnettes" (le mɔ̃de), each composed of an austere house and stable, usually surrounded on their downslope sides by privately owned hayfields and occasionally by privately owned pastureland. Most Alluetain families either owned a montagnette at the commons closest to the hamlet of residence or could gain access to one through family ties. There were five or six communally owned grazing areas of this kind. They corresponded to the five or six "quarters" (lu kart(e/"les quartiers") into which the fourteen hamlets were formed for political representation and in cases like this, for economic reasons.[5] The juxtaposition of commons and privately owned montagnettes allowed the Alluetain families to graze their animals during the intermediate seasons (spring, fall) in collective herds on collectively owned land

in daylight hours, then to shelter themselves and their animals and produce cheese and butter on private property without having to return every night to the hamlet of residence.

Communal pasturelands were either interspersed within or succeeded by both privately and communally owned forest (la fore, see Chpt 9). Earlier this century, extensive forested land could be found in many areas of the commune from 600 m to over 2000 m. Forests were generally the dominant folk biotope on very steep and/or rocky terrain below timberline. Such natural areas of the valley would not permit, or would allow only with difficulty, the conversion of forest to one or another of the domesticated folk biotopes. However, forest presence in certain parts of the valley also appeared to be conditioned by cultural factors related at least in part to the protection that could be provided to the hamlets against avalanches and landslides by standing timber. In some cases, land directly upslope of the hamlets, while appearing to be potentially arable or pasturable, was clearly maintained in forest for this purpose. Although a good number of forested parcels were privately owned, most forest land belonged to the Alluetain collectivity which closely regulated its exploitation (see Chpt. 9). Apart from what they provided in avalanche and slide protection and other forms of hydrographic stability, the various types of Alluetain forests also formed a major folk biotope with several variants. From these a wide range of both woody and herbaceous resources were drawn.

Because of this regular disposition of mostly similar sets of folk biotopes in and around each of the hamlets, because of the ownership pattern, and because of the relation of commonlands to each of the hamlet quarters, in several ways each hamlet and quarter constituted a "part-community" that was economically independent of its neighboring hamlets and quarters. The group of nuclear families of a given hamlet thus directed the major part of its economic effort, practicing mostly the same productive activities and utilizing similar technologies, toward much the same set of folk biotopes as did the other nuclear families in the other hamlets. This conscious positioning of similar folk biotopes (both domesticated and natural) in and around each hamlet resulted in several advantages to the Alluetain households. For one, it ensured that the travel times and energy costs involved in going to and coming from different work sites, sometimes with heavy equipment, were on the average much less for each community member than they would have been had the lands of each folk biotope been concentrated in only one area of the commune. Such an arrangement also allowed the inhabitants of each hamlet, who were also the owners and workers of lands surrounding each hamlet, to much more closely monitor their properties throughout the year. It is interesting to speculate at this point about what role the "edge effect"--that is, the increase in biotic diversity which results from habitat diversification--might have had in the development of this land-use pattern. As we will see in the following chapter, Nabhan et al. (1982) found species diversity to be significantly increased in a

Native American (Papago) agricultural landscape in which many plant communities and habitats had been established through human activities, in comparison to a similar, but non-human-modified landscape. Could this phenomenon of increased biotic diversity associated with habitat diversification and "edge effect" also somehow be implicated in an explanation of the formation of the repetitive pattern of settlement and land-use that was found in Les Allues? While a closer look at this pattern in relation to natural species diversity in a controlled situation would be necessary, it would seem that if indeed "edge effect" would similarly increase biotic diversity in an alpine setting, it would have been advantageous for Alluetains to multiply the result of this phenomenon fourteen times as they did.

While the use of most folk biotopes immediately surrounding the hamlets was planned and operationalized at the familial level, the use and management of two of these folk biotopes (cultivated fields, hayfields) was also in part regulated at the hamlet level, and for the commonlands, at the level of the quarter. Despite this familial and low-level collective autonomy, two economic zones located well away from the habitation zone--the high mountain pasturable domain or "alpage" zone and the vineyard zone--were regulated, like the communal forests, at higher collective levels. Communally owned alpages were regulated at the community level while the Alluetain vineyard holdings were regulated in part by the intercommunal collectivity of viticulturalists who owned parcels within the communal territory in which their holdings were located (e.g. Alluetain men were members of such a

collectivity, along with men from neighboring communes, in the commune of Brides-les-Bains).

Land use at the altitudinal extremes

Two major economic zones, the vineyard zone and the high altitude pasturable zone, were located at the lowest and highest altitudinal limits of effective Alluetain space. Each was composed of a major folk biotope and several minor folk biotopes (see Chpts. 7 and 10). Because of the particular climatic conditions at these valley extremities, several of the folk biotopes comprising these zones were much more highly localized than those folk biotopes that were disposed within and around the habitation zone.

At the northern, one-time lowest point of the commune--on the full south-facing hillside opposite the confluence of the Doron des Allues and the Doron de Bozel--was situated the Alluetain vineyard (la vno, see Chpt. 7). Regular production of several varieties of wine grapes--the economic focus of this zone--was mostly limited here to below 800 m (from approx. 600 m to 900 m, near the regional upper limit of the wine grape's productive possibilities). This vineyard, mostly located within the territory of the commune of Brides-les-Bains, consisted of thousands of independently owned vineyard parcels, the majority of which belonged to Alluetains. At the opposite, southern end of the valley, beginning at mid-commune on the higher sections of valley walls, could be found the high altitude pasturable zone (between approx. 1800 m and 2500 m, see Chpt. 10). This huge area was broken into a number of productive units, or "alpages" (le

mõtɑne). Herds of milk producing animals were pastured there in summer and milk products were made. In 1822, for example, 12 alpages could be found in the commune; eight were owned by private individuals, while four were owned by the collectivity. During the traditional period, each was separately managed during the summer months by an alpage team under the well known local pattern, "grande montagne à lait" ("large, milk-producing alpage"). The sale of the butter and cheese produced in this high altitude zone has often been described as the major economic orientation of the Savoyard mountain populations. However, even though total revenues might have been significant at the level of the entire community, those earned by individual households after the distribution of profits clearly represented only a small part of each family's annual income. While access to vineyard parcels was assured by direct ownership (as in all privately owned lands, some renting occurred), access to the communally owned alpages was gained as a guarantee of community membership. Access to the privately owned alpages was worked out as a commercial arrangement between the owners or managers of these properties and the individual Alluetain households who placed their livestock in one or the other of the alpage herds in summer.

* * * *

Although it is possible to say that many traditional economic activities were more or less independent of land, especially those activities related to the transformation of products for consumption,

the bulk of economic action in Les Allues was oriented toward procuring or producing consumable commodities directly from the land. This productive effort was overwhelmingly directed toward a combination of private properties--brought to the marriage by both spouses --and public properties--access to which was gained by community membership--in all, or nearly all, folk biotopes. As a result of agricultural, pastoral, hunting or gathering activities, each folk biotope supplied a part of the total annual consumer, and in the case of marketed items, monetary needs, of each household. In most cases, with the notable exception of alpine pastureland and vineyards, these properties were dispersed around or in relative proximity to the hamlets of residence which thus constituted socio-economic foci. Achieving the ideal of access to all folk biotopes, whether in the form of privately or publicly owned properties, thus assured each family the potential to produce, procure or otherwise come into contact with the full set of some 250 wild and domesticated folk botanical taxa. Even though some of these taxa were of no economic importance, were weeds, or were best known as children's toys, etc., the various wild and domesticated vegetal resources upon which each nuclear family depended for its survival were also members of this complete set. However, while productive success in each household thus appeared to depend to a great extent upon a sufficient, though undetermined, holding of property in all privately owned folk biotopes and access to the publicly owned ones, in at least two of the traditional economic sectors ("full" field agriculture and haymaking), it

also appeared to depend upon the dispersal of individually held parcels at different sites and/or elevations within the areas allotted to the related folk biotopes (cultivated fields and hayfields, see Chpts. 4 and 8). In addition, even though day-to-day economic decision-making and longer term management of most folk biotopes rested largely in the hands of the individual households, lands in three folk biotopes (cultivated fields, hayfields and vineyards) were also subjected to collectively-imposed management regulations while maintaining the principle of private property. Despite significant surface areas in the high mountain pasturable domain and in the forest owned and managed exclusively by private individuals, large amounts of land in the associated folk biotopes (pastureland, forest) were also owned and managed by the entire Alluetain community through collective acceptance of self-imposed regulatory accords. Responsibility for organizing the use and maintenance of the five or six commonlands (composed mostly of pastureland) rested in the hands of the quarter collectivities.

The partition of communal space into many folk biotopes, the ownership of, or access to, land in each by Alluetain families, the management of properties in each by these same families, in several cases in conjunction with smaller collectivities or by the entire collectivity alone, and the dispersal over the year of the household's productive energies among these same folk biotopes, ensured--given hard work and normal luck--the production or procurement of sufficient resources to sustain the household at any moment during the

traditional period. And this appeared to be so even after the collapse any given year of some part of total production in one or even in several of the economic sectors. While many other factors are involved, this imbrication of complex management strategies, folk biotopes and productive activities appeared to be successful in large part because of an intimate and inextricable relation between sophisticated local perception and structuring of the natural and human-modified environment--what I call the Alluetain ethnoecosystem--and the traditional economic effort. A more detailed analysis of this relation is provided in Chapter 3. In Chapters 4 through 10, this analytical framework is then used to structure descriptions of the various Alluetain productive sectors.

NOTES: CHAPTER 2

1. While small-scale ownership of property by non-community members also occurred within the commune during the last several centuries of the traditional period, communal and private, peasant tenure appeared to dominate in Les Allues since the late Middle Ages (see, for example, Chpt. 9). Because both non-peasant and especially large-scale private, peasant tenure occurred, a strict adherence to Wolf's definition of the "closed corporate community" as an entity dominated by communal tenure of land would disqualify Les Allues from inclusion in this category. But as Netting (1981:63) found in Torbel (Valais, Switzerland), with this one exception, most other features of the Alluetain community--as it existed since the late Middle Ages--seem to fit Wolf's model. It is, however, more difficult to know about the types of land tenure which existed during earlier periods. Few details, for example, are available about ownership and use rights to property during the feudal period in the Tarentaise. It is not clear to what degree land was communally or privately controlled by the peasantry or by nobles or to what extent feudal relations existed in Les Allues, or what form such relations might have taken. It has been proposed (Coutem 1883) that the community of Les Allues was released very early from the bulk of feudal obligations. But up to the 18th century, feudal relations still existed in Les Allues (Academie de la Val d'Isere 1866 (Tome 1):46, 58-68, 659-660; (Tome 2):48, 56; ADS, C1982; etc.). While it does appear that Alluetains were released at some undetermined earlier period from many obligations, the extent and form of these "franchises" and the liberties they conferred on the peasantry have yet to be adequately determined. Nevertheless, prior to the late 16th century, when the House of Savoie consolidated its power over the communes of the Tarentaise previously held in fief by the Archbishop of Tarentaise--including Les Allues--historical evidence suggests that the feudal relationship between the ecclesiastical lord and these communities was much more "easy-going" than those relations between the lay lord and the communities he held in fief (Hudry, pers. comm.). A reading of the Ordinance (Appendix 1) regulating communal property in Les Allues in 1390 also seems to suggest a considerable independence in the control of communal property. Nevertheless, reference to the liability of "masters of those who commit property damage," and allusion to the involvement of the "Officers of the Archbishop of Tarentaise" as a threat to ensure conformity to the collective regulations, indicate that Alluetains were probably at no time within the last 1000 years at least, solely responsible for their own destinies.

2. All evidence indicates that the fundamental Alluetain unit of production was the peasant family household and that this unit mostly oriented its productive effort toward satisfying its own internal consumer needs. Such categories as wages and profits appeared to have little bearing on most economic calculations during most of the traditional period. Clearly, however, there were ever-increasing shifts in this direction during the latter decades of this period until the collapse of the peasant mode of production after the Second World War.

3. Considering the fundamental nature of the peasant family household in traditional mountain production in the northern Alps, the lack of scholarly interest in the structure of the peasant family, in residence patterns and in inheritance rules (see Note 4) is surprising. My conclusion that the married couple with children, residing independently, was the dominant household type is based on impressions; a systematic study of household configuration was not undertaken. However, this impression tends to be supported by the findings of Devos (1977) and by those of Netting (1981). Devos in a brief demographic study of a 1561 Faucigny (Haute-Savoyard) community, and Netting in a much more comprehensive study of traditional marriage, demographics and economy in a Valais (Switzerland) community, both found the dominant household type to be the nuclear family. Burns' claim (1963:142-143) that the "stem-family" was the dominant household type in the "circumalpine culture area" does not appear to apply to the northern Alps.

4. Little is known about patterns of inheritance in the mountainous regions of Savoie. Before the reforms legally obligating strict partible inheritance were imposed by Napoleon, it is thought by some (Devos, pers. comm.) that the lowland patterns of female dowry and male primogeniture or male-only partibility, as practiced by nobles and bourgeois, were also practiced in the high mountain communes by the peasantry. Male primogeniture was thought to be the dominant inheritance pattern in the "circumalpine culture area" by Burns (1963:142-143). However, Perouse (1933:270) found that in 15th century Savoie, "notamment dans les villages de Tarentaise, on ne perçoit aucun mouvement en ce sens (toward male-only inheritance and female dowry); on y voit des pères qui traitent, en testant, leurs filles comme leurs fils... on y voit donc des femmes mariées, ou des veuves, qui ont leur patrimoine personnel, et qui en disposent à leur tour, en faveur de leur propre famille si elles n'ont pas d'enfants, sans que rien diminue leur pleine indépendence." Both Friedl (1973) and Netting (1981) also found partible inheritance practiced in the cantons of Valais, Ticino and Grisons in Switzerland. An appreciation of pre-Napoleonic Tarentaise and Alluetain inheritance patterns must await further study. Although a systematic enquiry was not done during fieldwork, inheritance of equal lots

by all siblings was said to be practiced in Les Allues this century. Lo kar ("le quart"/"the quarter") was also said to occur. Parents transferring property through a combination of partibility and lo kar favored one child (usually a boy) with one-quarter of the entire parental estate before each child received his equal share of the remaining three-quarters of the inheritance.

5. This short note on the Alluetain quarters is based on fragmentary data and should be seen as preliminary and in part speculative. Lo kartʃe ("le quartier"/"the quarter") as a political and economic sub-unit of high mountain Savoyard communities has not been described. Informant interviews led me to conclude that Les Allues had been partitioned into quarters during the traditional period for political representation and for several economic purposes. By early this century, the practice had mostly been abandoned. Each quarter consisted of one to several hamlets and the number of quarters seemed to fluctuate over time from 5 to 7. It appeared, for example, that the municipal council, responsible for community policy-making, was represented by one member from each quarter, called l ɔmo di kartʃe ("l'homme du quartier"/"the man of the quarter"). This person was charged with defending the rights of his quarter before the collectivity, with participating in community-wide decision-making, with organizing corvée labor for the upkeep of community property within the quarter (water supply, basins, bread-making ovens, etc.), and with ensuring that access to and use of the community pastureland associated with the quarter was equitable and that this land was not degraded by overuse. Each quarter was thus linked to a common pastureland (lo kmɔ̃, see Chpt. 10) and it was said that only quarter members were allowed to graze their animals in this commons. It was the individual members of the quarter who owned the "montagnettes" on the lower margins of this same commons (see Chpt. 10). The population of each quarter also appeared to collectively own the bull used to inseminate the cows of the quarter. Care of this bull seemed to rotate among the wealthier men of the quarter, though ideally all men were expected somehow to participate in its upkeep. Several historical references from archival and other materials tend to support this hypothetical scenario. Communal archives refer on several occasions to quarters and to their organization. In 1793, for example, the commune was subdivided into 6 quarters, each with political representation: "le quartier du chef-lieu, un officier municipal et trois notables, Villards et Bride, un officier municipal et deux notables, le quartier de Creuet, Vanthier, Chandon, Nantgerel et Raffort, un officier municipal et 3 notables, Morel et Mussillon un officier municipal et un notable, la Gitte et Meribel, un officier municipal et 1 notable, Villaret, Hauteville et Biolai, 1 officier municipal et 2 notables" (AC, Series D, No. 1). It is possible that these 6 "officier municipal" had much the same

responsibilities as the five men called "procureurs" described in the 1390 "Ordinance of the Commune of Les Allues" (see Appendix 1), and that in the late 14th century the commune was similarly partitioned into quarters, though perhaps into only five at that time (?). It is possible that the 7 "garde-champetres" named 1 August 1870 indicate that the organization of the commune that year was into 7 quarters. The following year, 1871, it is explained that the upkeep of basins falls upon the quarter or hamlet interested (AC, Series D, No. 6). At least two published sources seem to refer to such quarters elsewhere in the Tarentaise. Onde (1942: 34), for example, sees in "des quartiers des paroisses primitives, quartiers pourvus d'une large autonomie administrative et religieuse...l'organisation en quartiers, demeurée très vivante en moyenne Tarentaise...." Though he does not call them quarters, Perouse (1911:9) seems to be describing the organization and rights of quarters much as I have attempted to describe them.

CHAPTER 3

The Framework for Analysis: The Structure and Role of Folk Ecological Knowledge in Small-Scale Traditional Societies

> "Men have evidently been much the same in habits of thought and irrationalities during all of recorded history, so it must be recorded somewhere that men of cultures other than our own had the explicit idea of an ecosystem. Ideas are expressed in language. Man as an animal has been at least a part of the wild natural scene and many of the terms in languages succinctly encapsulate the idea of a particular kind of ecosystem. The English terms carr, moss, fen, and heath have very precise meanings in terms of kinds of plants concerned, habitat factors, and resulting landscapes. Siberian terms for regionally extensive ecosystems, such as tundra and taiga, are now universally used....Muskeg is a local Chippewa Indian term for a kind of ecosystem within the taiga....Every Old World Mediterranean country has a term for a shrubby, aromatic, usually sclerophyllous plant formation formed by man from forest vegetation....The names are different, but the aspect of the ecosystem, the dominant habitat factors, and often even many plants are the same." (Major 1969:10).

Since the recent publications of Hays (1982) and Hunn (1982) concerning the implications of a utilitarian perspective in folk biological classification, ethnologists have begun to show greater interest in what Dreschel has called the "product" of such classification rather than in its "substance" alone (in, Comments to Brown, 1985:55). Beginning with the pioneering work of Harold Conklin in the 1950s and of Brent Berlin in the 1960s and 1970s, folk biological theory has been attempting to account primarily for the internal logical structure of "native" or "folk" systems of biological classification (flora, fauna). This effort resulted in highly useful models of

folk classificatory behavior and demonstrated what were often striking similarities between such behavior and "western" scientific taxonomies, and as such contributed to a better understanding of human psychology. Other than generally admitting their utility (Hays 1982: 90; Hunn 1982:831), however, little energy had been spent by ethnobiologists in studying in detail what functional role, if any, these often elaborate knowledge systems might play in human societies. This has been so despite the application of functional explanations to problems of internal classification structure (see esp. Hunn 1982; Posey 1984). This chapter will shift the utilitarian focus from internal structure of folk biological classification to that of folk ecological knowledge in use. To this end, the functional relation between such knowledge and economic behavior in the high mountain peasant community of Les Allues will be explored. The goal will be to demonstrate that only insofar as there is a continuous application of folk ecological knowledge in the productive process can economic actions be consistently successful, and thus in the long term, adaptive. A more specific goal will be to show how folk botanical knowledge, represented by the set of folk botanical taxa or discrete, locally perceived units of the flora, is perceptually and practically linked to folk ecological knowledge, represented by the set of locally perceived higher order units analagous to the scientific ecologists' habitat and biotic community. Terminology and concepts adapted from ecology will be introduced as frameworks for this analysis and as a guide to understanding the "production" component of the production-

distribution-consumption economic triad. Such an approach will then be used in the remaining chapters to demonstrate the cognitive and practical linkage between the various productive activities regularly engaged in by the Alluetain household families: "full" field agriculture, gardening and hemp growing, fruit-tree arboriculture, viticulture, hay-making, forestry, stock-raising and cheese-making, and gathering and hunting.

As we saw in the preceding chapter, most economic effort related to these activities took place within the confines of the 90 km^2 of the valley of Les Allues. The Alluetain community employed several classificatory systems to order both natural and human modified biotic and abiotic space within this territory. Lexical sets used to refer to topographic, geologic, hydrographic and geographic sites and formations as well as to biological and ecological phenomena were identified. The combination of these lexical sets, along with that set of terms employed to refer to constructed space (for shelter, industry, intra-communal displacement, etc.), as well as an elaborate set of place names, constituted a perceptual and semantic grid which permitted Alluetains to communicate about and to direct productive energy toward properties, work sites, natural resources, etc., within the valley. But before describing the specific manner in which the Alluetains structured abiotic and biotic space and the relation between this order and the productive process, I would like to look briefly at three of only a very small number of studies--by a human geographer, by an ecological anthropologist, and by a group of

ecologists--which have attempted to describe the order that humans have responded to in, and imposed upon, abiotic and biotic space above the level of the botanical or zoological domains. While none of the analytical frameworks employed in these cases was adequate to account for the structure that Alluetains brought to biotic and abiotic space at this level of perception, each contributed a part in helping me formulate my own analysis. The inability of these three attempts to account for my data can be explained in part by the different questions that each was asking. Depending on the example, furthermore, there was 1) a basic misunderstanding about the pertinent social level where such structure is applied and used by human groups; 2) an inability to adequately separate folk ecological categories from folk geographic, topographic or other categories; and 3) the confounding of "etic" categories with "emic" categories. While in no way pretending to resolve such overriding issues, I will propose several new concepts to help account for data pertinent to folk ecological ordering at levels above the botanical and zoological domains in Les Allues and by extension in any small-scale traditional society whose economic activity brings people into close contact with the land.

Example 1. In 1967, D. Gade published a doctoral dissertation in Geography at the University of Wisconsin titled Plant Use and Folk Agriculture in the Vilcanota Valley of Peru: A Cultural-Historical Geography of Plant Resources. The goal of this research, the author states, was "to determine the spatial, temporal, and ecological patterns of domesticated and wild plants in one Andean valley and to

explain man's use and cultural associations of these plants in a series of different environments..." (p. iv). In Chapter 7, titled "Distributional Analysis and Landscape Synthesis of Useful Plants," Gade presents his findings concerning "the spatial dimension of useful plants...." He recognizes four "scales" at which this dimension "may be approached": 1. crop assemblages in individual fields and gardens, 2. crop growing farm units, 3. elevation zones of useful plants, and 4. plant-use complexes. Scale 1 presents Gade's observations concerning the variable floristic content of similar land use types; Scale 2 notes the contrasting productive orientations and land holding strategies between haciendas and peasant households; in Scale 3 Gade describes the absolute and effective limits imposed by climatic and phytopathological forces on growing particular crops at various altitudes; and in Scale 4 he describes six "plant-use complexes" or "regions" which occur within the valley, each "characterized by several plants which predominate in the life of the people" (p. 164). It is with reference to this last Scale that Gade comes closest to his goal of describing "ecological patterns of domesticated and wild plants." Gade found 1) that in the Vilcanota Valley certain crops were grown within specified altitudinal limits; 2) that the discovery that each crop grew best within certain limits had been made hundreds of years earlier by the predecessors of the current inhabitants, that these people had conceptually and practically formed the domesticated and an undetermined number of wild plants into six named "plant-use complexes" in association with altitudinally prescribed "regions,"

then directed their productive energies in a systematic way toward each; and 3) that subsequent generations continued to employ this ordering, growing or seeking the traditionally appropriate cultivars and wild plants associated with each named "region" much as their ancestors had done.

While the six Vilcanota "plant-use complexes" or "regions" as Gade describes them are undoubtedly useful in structuring biotic space for valley inhabitants, without further information about when and how such knowledge was applied, one is left to speculate about the extent and level of utility of their application among the multitude of human groups occupying the Vilcanota Valley, and especially so at the peasant community and individual family economic levels. As Gade describes them, the Vilcanota Valley "plant-use complexes" or "regions" must each have covered hundreds if not thousands of hectares of valley territory. Since such large areas within a high mountain setting could not possibly have been ecologically uniform (with the potential exception of the highest--Puna--region [4340 - 3910 m] dominated by native wild grasses), clearly these "plant-use complexes" as "emic" constructs (one of Gade's goals was "to explain man's...cultural associations...of plants..." p. iv) are occurring and are presumably being used at a very high level of local environmental perception. Gade implicitly admits this in noting the presence of what seem to be geographically and floristically less inclusive ecological units such as "irrigated land,...unirrigated slopes,...and roadside" within the Quechua or Keshwa "plant-use complex" (3300 - 2400 m). In addition,

he describes several land use strategies in the Chaupiyunga "region" (2400 - 1500 m) all of which could not possibly be associated with the same habitat type. While an appreciation of locally imposed environmental order at the level of perception of the "plant-use complex" is clearly useful in understanding the general pattern of land-use and economic strategy in the Vilcanota Valley taken as a whole, Gade's analysis is not capable of accounting for the environmental patterning that must have existed at lower levels of perception, each time, for example, that an economic action was directed by an individual member of a peasant community toward a discrete folk botanical taxon within the biotic environment. Even though it would probably be perceptually associated in some way with one of the six "regions," it is highly unlikely that someone seeking a wild medicinal plant, for example, would randomly search the hundreds or thousands of hectares within this "region" to find it. It would be easy to respond to this absurd scenario by saying the individual would "know" where to find what he was seeking. But this is precisely the point, how would he "know"? Gade does not provide an answer, though as we will see in the discussion that follows the presentation of the next two examples, his data seem to suggest one.

Example 2. In the mid seventies, Stephen Brush published several articles (Brush 1976a and b) and a book, Mountain, Field, and Family: The Economy and Human Ecology of an Andean Valley (1977) in which he describes various aspects of man's insertion into high mountain ecosystems in the northern Peruvian Andes. There was a clear and

pervasive intent in this work to associate economic behavior--what Brush usually referred to as "subsistence systems"--with ecological patterning of the landscape; "the objectives of [his] research were to obtain data that was appropriate to both economic and ecological analysis of the subsistence system of Uchucmarca," a northern Peruvian, eastern slope Andean valley and peasant community.

Brush initiates the reader to his several works by explaining that vertical patterning of "crop zones" is a general economic and ecological feature of Andean mountain subsistence systems. He describes four "major crop or production zones" which are "widespread over much of the Eastern Andes" (1976b:10), then concludes, as Gade does, that the limits of such zones are primarily formed in response to climatological and floristic parameters related mostly to altitude. However, after these introductory remarks concerning general subsistence and ecological pattern, Brush brings his analysis down to the community level, for, as he rightly claims, "it is on this level that the local populations of the Andes must deal with the Andean landscape and climate" (1977:7). In this respect he differs significantly from Gade (whose analysis was applicable at the level of a 300 km long valley, occupied by many peasant communities and non-peasant landowners). Brush then describes seven "major crop- and land-use zones" that are specifically demarcated by the Uchucmarca people (rather than the basic four crop zones commonly found in other parts of the Eastern Andes, to which the Uchucmarca zones were nevertheless related). These "crop zones" constitute what Brush calls an "ethno-geographical

system" which is "a technological adaptation to the Andean environment in that it indicates to them (the Uchucmarca people) which zones can and should be used for which crop" (1977:155). The author thus emphasizes, much more clearly than did Gade, that these zones are named, functionally pertinent, human constructs that form a system which is "used" to order space and structure economic behavior at the indigenous community level. While clearly reacting to the compressed climatic gradient to some degree in forming their "crop zones," Brush nevertheless claims that Uchucmarca people were not simply responding passively to the natural zonation; in fact, to a large extent the seven "crop zones" were independent of Andean climatic patterns (1976b:150,155), implicitly recognizing that Uchucmarca people were actively managing their environment. The author demonstrates this by briefly explaining the relationship between the five "life zones" or "plant formations" identified by "botanists and geographers" as occurring within the Uchucmarca Valley and his seven "crop zones." He concludes that in only two of these "native" zones was there near-equivalency to the scientifically recognized ecological zones, though this was apparently neither ecological nor floristic equivalency, but equivalency of altitudinal limits (1976b:155-156). The remaining five "crop zones" were literally imposed upon the natural "life zones" by the Uchucmarca people, cross-cutting natural zonal limits.

It is instructive to note that Brush compares his "crop zones" to exceedingly extensive categories of scientific environmental perception. Clearly any equivalency that can be demonstrated or inferred

occurs at very high levels both of "native" and ecological abstraction. However, while the author admits to both the presence of a "tremendous range of microclimates and plant communities" within the valley (1976b:149...terms like "plant community" are generally employed by ecologists to describe groupings below the level of "life form" or "plant formation," Whittaker 1975:135) and the existence of "other important zones...which yield salt and firewood...[but which] ...may not always be designated as separate zones in the population's description of their (sic) environment" (1976b:158), with the exception of a brief allusion to the use of place names, we are not provided with information on "native" perceptual ordering at levels below that of the "major crop zones." Like Gade, the local procedures being used to locate specific vegetal resources within these large areal "zones" are not discussed.

Example 3. In a recent article, Nabhan et al. publish their results concerning "Papago influences on habitat and biotic diversity" after having studied a desert oasis site at Quitovac, Sonora, Mexico (1982). Rather than investigating "Quitovac oasis ethnoecology" from an emic perspective, as the second half of their title might imply--that is, from the standpoint in which Papago themselves name, structure and explain their use of biotic and abiotic space--Nabhan et al. report instead on the product of Papago use of their territory from an etic ecological perspective. This is somewhat surprising since the authors identify hundreds of Papago folk biological taxa and provide local names for them. While such an approach did not permit an

appreciation of "traditional Papago subsistence and land use" from the "native" point of view in a way that the ethnoecologist might wish, this did not affect their findings. As a result of Papago modifications to the environment which "created eight large scale and two small scale vegetation associations," Quitovac was found to be "more diverse in terms of plants, somewhat more diverse in birds and not nearly as diverse in mammals" (p. 139) in comparison to a similar "wild" control area some distance away at Quitobaquito, Arizona. Despite the probability that the ten oasis habitats as a group represent only a part of the Quitovac Papago effective subsistence space (the authors note use of more distant lands for hunting) and the limitations that the authors' etic approach to understanding species diversity places on cross-cultural comparison, there are several interesting theoretical implications in this work for ecologically minded anthropologists. Several of their findings on species diversity and land use, notably that of "ecotone effect", for example, can be applied to the interpretation of the Alluetain settlement and land use pattern (see Chpt. 2). However, I believe a more important application of these findings for wider theoretical purposes is the recognition by plant ecologists that vegetation groupings at the level of small-scale association or community were most relevant to specific Papago subsistence acts. This, coupled with my findings in Les Allues, strongly suggests that it is toward groupings at this level of perception--and not at some less well defined higher level of abstraction--that individual economic actions are directed in small-scale

traditional societies with intimate ties to the land. While such constructs as Gade's "plant-use complexes" and Brush's "major crop zones" clearly appeared to be useful as emic categories in structuring space over wide geographical areas at high levels of environmental perception, we will see shortly that it was in fact with named cognitive (emic) categories at the lower level of habitat and community that Alluetain men and women fundamentally structured natural and human modified biotic space. And it was toward categories at this level that Alluetains variously directed the bulk of their productive effort. Since "the concentrations of utilized species in certain habitats clearly affects how these habitats are managed" in Quitovac (Nabhan et al., p. 124) as it did in Les Allues, in light of these similar findings, it would appear likely that at least some of the Quitovac plant communities identified by Nabhan et al. were also named cognitive and practical categories toward which productive effort was consciously directed by the Papago. While far from being explicitly stated as such, this appears to be a strong possibility in both the Vilcanota and Uchucmarca Valleys of Peru as well (see also Hays 1983:594 for a similar possibility among Ndumba, an Eastern Highland Papua New Guinea group).

As noted in reviewing Gade's findings, it is unlikely that a system of six "plant-use complexes," each covering hundreds if not thousands of hectares in the Vilcanota Valley, could serve to direct an individual seeking a certain plant to an appropriate spot in most cases. By employing only the "plant-use complex" as the point of

reference, the individual would still need to randomly search over a vast area to find what he was seeking. Adding a place name reference, such as was described by Brush for the Uchucmarca Valley, would certainly limit the search within a given "plant-use complex," but what if, as is certainly possible, the place name still covered an area that was phytosociologically heterogeneous? In the inverse event that the place name covered an area phytosociologically homogeneous, what if everyone went to the same spot and there were no more of the resource plants to be found there? What would one do if the vegetational content of the area associated with a given place name otherwise changed as a result, for example, of a shift in land use or climate? While a combination of place names and "plant-use complexes" appears to be a reasonable short term solution to the need to structure biotic space for practical reasons, could human memory consistently locate each of hundreds of discrete plant resources in an elaborate floristic landscape by a rote process alone, over long periods of changing land use and climate, within such large geographic areas as those covered by Gade's "plant-use complexes" or Brush's "major crop zones"? Some more easily recognizable intermediate cognitive construct that could account for vegetational discontinuities and floristic change over time and over large areas, but with regular mnemonic features, would appear to be needed. Gade suggests the answer by employing in his text many English terms whose common referents would seem to show that ecologically the Vilcanota Valley was indeed highly patterned below the perceptual level of "plant-use

complex." He cites, for example, "river terraces or mezadas, poorly drained areas, dry hillsides, talus slopes, sparse savanna, dense tree cover, forest, pampa, artificial terraces, garden, field, river bank, brush land or matarral, flood plain, weedy place, eucalyptus grove, trailside fringe," etc. It is worth noting that many of these terms are similar to those used to describe the natural and man-made floristic communities and their related habitats identified by Nabhan et al. ("open water and springs, cultivated field, scrubland, orchard, ephemeral watercourse or arroyo, lagoon edge, meadow-like flat," etc.).

Brush similarly admits to the presence of a "tremendous range of microclimates and plant communities" within the Uchucmarca Valley (1976b:149). When he states that there are "important zones [other than the seven "major crop zones" he identifies]...which yield salt and firewood...[but which]...may not always be designated" (1976b: 158), is he not implicitly telling us that some other of these "zones" are designated? As in the Vilcanota Valley, whose six "plant-use complexes" or "regions" closely resemble the seven "major crop or production zones" of Uchucmarca, it is probable that many of these "microclimates and plant communities" constituted locally named cognitive units, forming together a perceptual system of folk ecological categories below that of the "relatively few...crop zones" (Brush 1977:9). Such a system would then presumably permit the Uchucmarca people during their many and complex productive activities to "plug into" the natural and human-modified environment at the level at which individual economic acts were actually being performed, much

as the use of the various habitats was described in Quitovac. Brush seems to infer this when he concludes that "it is important to stress that the existence of a limited number of zones reflects the subsistence pattern of a large and complex area and not a limitation in environmental perception on the local level" (1976b:158). In the following section I will describe the basic folk ecological construct --what I have called the folk biotope--that was employed by Alluetains to structure biotic space "on the local level" in their high mountain valley and, I believe, at the local level in the three cases that have helped me to arrive at this conclusion.

From ecology to ethnoecology

Plant and animal ecologists, phytosociologists, plant and animal geographers, etc., have attempted to classify or to otherwise better understand the variable repartition of plant and animal species within given geographical limits, from very small areas of several hundred square meters to that of the entire planet. This patterning has been described at many levels of perception and inclusion and many terms have been used to refer to the same general concepts (Whittaker 1962). Today the most widely accepted conceptual construct used by ecologists to account for and to communicate about patterning in plant and animal distributions is, and has been for well over 100 years, that of "community" (Daubenmire 1968). While there is still no unanimity of opinion as to the scope of the concept, plant communities, for example, are generally recognized by appreciating in any assemblage of plants 1) the outward appearance of growth form (physiognomy and/or

layering), 2) the fidelity of certain (indicator) species, 3) the presence of dominant species, etc. (op. cit.:250+). In theory, a plant community or phytocoenosis is inseparable from the environment (ecotope, biotope, habitat) that it occupies. This environment will always also include a zoological component or zoocoenosis (with the phytocoenosis = biocoenosis), a physical (edaphotope) and a climatic (climatotope) component (edaphotope = soil, moisture, nutrients, etc.; climatotope = sunlight, wind, air temperature, etc.). The ensemble of all components that are considered at any level to be ecologically related--that is, linked by "chains of influence" (Daubenmire ibid.: 13)--is commonly called an ecosystem. This concept is exceedingly flexible, it can be and has been applied at nearly any level of inclusion that an investigator might desire (Evans 1956). However, the person choosing to use these concepts must define clearly to what set of interconnected phenomena, or system, he or she wishes them to be applied. For heuristic purposes, it is acceptable to separate the floristic and the animal components, or any parts of these components, of any given ecosystem at any level of perception. Three terms and concepts will be adapted here from ecology to better account for the manner in which Alluetain peasants conceptualized, structured and used large parts of the natural and human-modified physical and botanical space that was synonymous with the valley of Les Allues. These are ethnoecosystem, folk biotope, and folk phytocoenosis.

Les Allues as ethnoecosystem

> "A natural resource ecosystem is an integrated ecological system, one element of which is a product of direct or indirect use to man....In all cases, the distinguishing facet of a natural resource ecosystem is that man has a direct involvement in the complex set of ecological interactions" (Spurr 1969:3).
>
> "The operation of a factory is somewhat analogous to the utilization of land for agricultural purposes, from intensive agriculture to forest management. Materials and energy flow into the factory. In a variety of steps they pass through the processing divisions of the plant where they are subject to chemical and physical reconstitution; energy is dissipated at each step, and at some points materials may be recycled to an earlier point in the process. Finally, finished products and a variety of wastes emerge from the plant....Managers of agricultural, semiwild, and wild lands seek...goals of maximization of output and reduction of costs. Also they have the added responsibility of protecting the producing capital of their lands for use by future generations. Often, management entails not one end product, but several, such as wood, water, wildlife, and recreation. Given the basic abiotic and biotic complexity of land, the phenomena of succession and retrogression, a multiplicity of managerial goals, and a desire for more efficient use of the land, it is obvious that some theoretical framework upon which we can assemble and interrelate these diverse components is a necessity ....The ecosystem concept provides this framework." (Bormann & Likens 1969:49-50).
>
> "What is particularly intriguing about human populations is that they have developed complex ways of controlling the productive stages of several kinds of ecosystems which they find or create within particular areas." (Lewis 1977:21)

What Julian Steward called "relevant environmental features" and Netting calls "effective environment" (both cited in Netting 1965:82) was limited in Les Allues to approximately 90 km^2. As I have shown (in Chpt. 2) it was overwhelmingly this territory that Alluetains were

using for their subsistence-oriented activities much as Bormann & Likens and Lewis describe, principally by modifying the physical and biotic environment, producing or procuring consumable commodities, transforming them, then rendering waste, usually in the form of recyclable nutrients, in turn. While clearly Les Allues as an interacting assemblage of plants, animals, soils, climate and human beings was not "closed" in any absolute sense, there were readily identifiable barriers--natural, but especially social--to the flow of information and energy within the valley. For analytical purposes, I believe that it is appropriate to view this ensemble as an ecosystem, or rather, because of the focus here on human activities as the major integrating feature, as an ethnoecosystem.[1]

The classificatory abilities of the Alluetains were also directed toward this space. Much as the collectivity of plant taxonomists attempts to bring order to all vegetation through the process of classification--with the goal of better understanding the phylogenetic relations between organisms in an evolutionary context--the collectivity of Alluetains also brought order to its biotic space, but all evidence indicates that it was doing so for much more practical reasons. In effect, the Alluetain peasant was--like any member of a traditional society with direct, "non-scientific" ties to biota--much more selective than the scientist in classifying organisms. In fact, he was interested only in a relatively small part of biotic space, and on the whole, to that part with economic significance within his effective environment. All evidence suggests that he was much more

interested in "information being gathered" and organized than he was in "the process of classification" itself (Raven et al. 1971:1212).

Alluetains brought order to biotic space at the level of the botanical and zoological domains by recognizing and naming some 250 folk botanical taxa and approximately 110 folk zoological taxa and by organizing these taxa conceptually into various groupings at several levels of inclusion.[2] They also established order above this level of perception, by recognizing some 20 habitat-types to which the bulk of the folk biological taxa were variously associated. Those habitats recognized and named by Alluetains will be called here the folk biotopes. That set of folk botanical taxa associated with each folk biotope will be called its folk phytocoenosis. The modifying term folk is added to the ecological head terms to establish analogy and not homology between the scientific and the "native" concepts. On the whole, however, the scientific and the folk concepts of habitat, and of the associated plant community or phytocoenosis, appear to me to be logically similar.

The folk biotope

The folk biotope is proposed here as the basic folk ecological unit that is employed in small-scale traditional societies in conceptualizing and ordering biotic, and to some extent abiotic, space at a level more extensive than that of the individual botanical and zoological taxa. Twenty-some such named cognitive categories were recognized by Alluetains for visually discerning higher scale discontinuities in biotic, mostly botanical, space within the communal

territory (see Table 3a). Questioning of elderly people resulted in patterned responses suggesting that each was defined by multiple, intersecting features related to vegetation physiognomy, floristic content, in several cases, salient physical properties (wetness, dryness, soil quality, etc.) and the economic activities that were performed there. All evidence indicates that the lexical set of folk biotopes, along with those lexical sets pertinent to conceptualizing and ordering abiotic space (folk geographic and topographic set, folk geologic set and folk hydrographic set...see Tables 3b through 3d) and constructed space (see Table 3e), in conjunction with an elaborate set of place names, served as a perceptual and semantic grid allowing Alluetains, at several levels of perception and with regard to a multitude of themes, to "plug into" the many and diverse aspects of their 90 km^2 natural and human-modified territorial space.

The ecological term and concept of <u>biotope</u> has been selected over similar and related terms and concepts for several reasons. Even though most of the Alluetain twenty-some folk ecological categories appeared to constitute a more or less discrete assemblage of plants, animals, soils and climate linked through "native" eyes by "chains of influence"--and thus could each also legitimately be called an ecosystem, a "natural resource ecosystem" or a folk ecosystem in its own right (as e.g. the term ecosystem is used in Major's and/or Spurr's introductory remarks to this chapter or in the citation by

Table 3a: The Alluetain Folk Biotopes (a)

Dialect Term	Approx. English equivalent	Described
lez ar'kɔse	Green alder thicket	Chpt. 9
lo bɔr də x,		
la bɔrdɔrɛ	borders, edges of x	Chpts. 4-10
la brusaje	brushland	Chpt. 9
lez ɛklɛrsi	forest clearing	Chpt. 9
la fore	coniferous forest	Chpt. 9
lo kurti	household garden	Chpt. 5
lo lʒ də l ɛva,		
lo lʒ də x	Doron edge, edges of x	Chpts. 4-10
la mojasir	moderate wetland	Chpts. 8 & 10
la morɛna	moraine	Chpt. 10
lo murdʒe	cultivated field rockpile	Chpt. 4
lo paturadzo	pastureland	Chpt. 10
lo pra	hayfield	Chpt. 8
lo rɛbje	deciduous coppice	Chpt. 9
lo rətire	marsh	Chpts. 8 & 10
lo sɛtsy	dry land	Chpts. 8 & 10
lo tɔr də l arbe/	around the mountain	
də la mʒda	chalet/mtette	Chpt. 10
lo tsã	cultivated field	Chpt. 4
lo tsnavje	hemp plot	Chpt. 5
lo vɛrdʒe	hayfield-orchard	Chpt. 6
la vno	vineyard	Chpt. 7

(a) This list may not be exhaustive even though it results from hundreds of hours of interviews. I have not attempted to systematically study the defining criteria for each folk biotope, some are clearly "basic level objects" (Rosch 1978:30), others are derived from these. The floristic content of each, which constitutes its folk phytocoenosis, is presented in the chapters cited. Where physiognomic and/or physical properties appeared to be important, these were mentioned.

Table 3b: Folk Geographic and Topograhic Set (a)

Dialect Term	Approx. English Equivalent
l adrai	"l'endroit" in Fr.; right bank of the valley of Les Allues, somewhat sunnier than the left bank; term sporadically used
l areθa, l arexa	"arête" in Fr.; mountain ridge, culminating point (falling off rapidly on both sides)
la burna	grotto, cave (also used to refer to badger (Meles meles) and alpine marmotte (Marmota marmota) den entrances
lo du	knoll
l ɛ̂vɛr	"l'envers" in Fr., left bank of the valley of Les Allues, somewhat less sunny than the right bank; term infrequently used
lo fo də la komna	"le fond de la commune" in Fr.; the base or lower reaches of the valley
lo gole	gully
lo kofat	hole
la kɔ̃ba	"combe" in Fr.; large, anticlinal mountainside
la krɛθa, la krɛxa	"crête" in Fr.; mountain crest, more open and rounded than l areθa
lo krwe	"creux" in Fr.; depression
la kuθa, la kuxa	"côte" in Fr.; sloped hillside
la lɑ̃ts	steep, vertical corridor in the mountains
la mɛ̂tɛ̂ də la komna	middle of the valley
lo plɑ̃	plain
la ravna	ravine
lo sɑ̃dzɔ̂ də la komna	summit or head of the valley

(a) This list may not be exhaustive.

Table 3c: Folk Geologic Set (a)

Dialect Term	Approx. English Equivalent
lo glapje	talus
la glir	small islands of exposed earth in, or at the edge of, the Doron des Allues
la karir	quarry
---- de luze	roofing stone quarry
---- de lɛpje	rough roofing stone quarry
--- də tsarbɔ̃	coal quarry
la perir	scree
le rɔtse	larger rocks, boulders (together)
la sablir	sand pit (quarry

(a) This list may not be exhaustive.

Table 3d: Folk Hydrographic Set (a)

Dialect Term	Approx. English Equivalent
lo glaeʃe	glacier
lo sɛre	"serac" in Fr.; glacial ridges
lo lai	lake
la rvir	river (Doron des Allues)
la guj	"hole in the river" (deeper holes where fishing was preferred)
lo nɑ̃	creek, stream (lo nɑ̃ dɔ x)
la rai	rivulet, streamlet
la rigola	smaller streamlet; perhaps a recent addition from Fr., "la rigolle"
lo nɛr	retting pit
la fɔ̃'tɑ̃na, la sorsa	source, fountain, spring
lo lɔ̃go	puddle

(a) This list may not be exhaustive.

Table 3e: Constructed Space (Buildings, Other Constructions, Communications Network)

Dialect Term	English Equivalent (approx.)
At the hamlets (hamlet = lo vladz)	
la maizɔ̃ + lo sɛtər	house + cellar
la grɑ̃dz + lo bɔ	haybarn + stable (usually combined)
la mazyr	hovel, ruin
lo grɛ̝ne	granary (sometimes separate, usually in homes)
lo rytse	apiary (usually on an exterior margin of the hamlet)
l egliz	church (at Chef-lieu only)
la tsapɛla	chapel (sometimes just outside hamlet)
l ekula	school (not in every hamlet, by quarters?)
la meri	mayoral building (at Chef-lieu only)
lo fur (a pɑ̃)	(breadmaking) oven
lo batse	freshwater basin
At the "montagnettes"	
la mɔ̃da	intermediate mountain cabin (term also applies polysemously to ensemble of property, cabin, work areas, etc.)
lo garde	small underground (or partially underground) storeroom for fresh milk, in proximity to each arbe and mɔ̃da

Table 3e: Continued

At the "alpages" (le mɔ̃tɛɲɛ)

l arbe	mountain cabin or shelter at each of several grazing stations within each of the eleven "alpage" networks
lo garde	see "montagnettes"
la kava de grɛ'vire	storage cellar (or building) for curing finished gruyère-type (and sometimes tomme-type) cheeses and butter, usually at the base of each "alpage" network

At or near the river or stream edges (for water power)

lo mlɛ̃	flour mill
lo batʃy	hemp/fruit/walnut squashing or crushing mill
la res	sawmill
la fjərdz	forge

Along the paths (sometimes in hamlets)

l ɔrətwɛro	oratory

Well away from the hamlets

lo fur a tso, lo furne	oven for cooking lime (three abandoned ovens were identified during field work)
la baraka	vineyard hovel hunting hovel

Table 3e: Continued

Communications network (from largest to smallest)	
la plas, la plaθ	"place," hamlet square
lo tsmɛ̃	road
lo pɔ̃	bridge (three major and several smaller bridges spanned the Doron)
lo sãtʃe	footpath
la tsa'rɛta	narrow, barrow path in hamlets
lo vjɔ̃	narrow mountain footpath

Lewis)--Alluetains clearly perceived each as constituting a part of a larger entity, what I have called the Alluetain ethnoecosystem. While it is not at all unusual for ecologists to employ the term and concept of ecosystem at many levels of perception, from that of the biosphere as a global macroecosystem, to that of an artificial pond as an ephemeral microecosystem (see e.g. Odum 1969:263), it would have been awkward to do so here at more than one level. Because the Alluetain ecological constructs were emically viewed as integrated components of the larger ethnoecosystem, I prefer to call them folk biotopes. The biotope concept ("a region uniform in environmental conditions and in its populations of animals and plants for which it is the habitat"...Webster's Third New International Dictionary, 1981), with the addition of the epithet, folk, appears to be appropriate to grasp the idea of an emically construed space occupied by a discrete combination of "folk" biocoenosis (the biological component seen through "native" eyes) and "folk" ecotope (the physical component seen through "native" eyes) below the level of the ethnoecosystem. Taken together, in fact, such spaces formed the major part of the ethnoecosystem.

In Les Allues, and all evidence suggests in other small-scale traditional societies (see the three examples already cited as well as Meilleur 1985), the folk biotope is a construct whose existence is clearly predicated upon practically motivated interests. By directing behavior toward certain ecological categories for pragmatic reasons, Alluetain folk biotopes are logically much closer to the wildlife administrator's or the forester's vegetation categories--used in large

part to order space for management purposes (see esp. Van Dyne 1969)--than they are, say, to the vegetational groupings employed by contemporary American ecologists as heuristic abstractions to better understand, for example, "the sociological interactions of plant species... within single communities" (Mueller-Dombois and Ellenberger 1974:9+).

Identifying folk biotopes

An elicitation framework was set up to gain insights into the manner in which Alluetains structured both the physical and the biological environments for referential purposes above, or cross-cutting, the level of the individual botanical and zoological taxa. A hypothesis that such structure, if any, was related to practical concerns informed such questions as "where do you find __ (resource)?", or "where do you go to look for __ (resource)?", "where do you practice __ (activity)?", or "where do people go to look for __ (resource)?" and "where do people go to practice __ (activity)?", etc. By using the collective subject rather than the second person singular, responses rapidly moved past place names to what could only be considered to be a significant number of "general purpose" categories that were clearly related to the perception and use of abiotic and biotic space.

It immediately became apparent, through follow-up questions such as "how do you 'see' __ (category)?", "how do you distinguish __ (category) from __ (category)?", "what do you do in __ (category)?", "what plants, animals or other resources can be found or encountered in __ (category?)", etc., that the attributes used to describe the

elicited categories could be grouped into three components: a biological component (usually floristic, but sometimes zoological or both), a physical component and a functional component. Through further questioning, several sets of categories began to emerge based on the perceived greater or lesser presence or absence of attributes in each of these three components. For example, the category lo pra ("hayfield") was viewed as possessing a well-defined biological component, physical component and functional component while lo kofat ("hole in the ground") was perceived as lacking a well-defined biological component and functional component but possessing a well-defined physical component. That set of categories possessing well-defined biological components, physical components and functional components I have called folk biotopes (see Table 3a). It became apparent that productive activities or "events" (Rosch 1978:43) involving plants, and to a lesser degree, animals--which together constituted the bulk of economic production--were overwhelmingly directed toward the set of folk biotopes. That set of folk botanical taxa affiliated with each folk biotope--its floristic component--I called its folk phytocoenosis.[3] That group of categories lacking well-defined biological components and well-defined functional components was broken into what I called a folk geographic and topographic set (see Table 3b). Categories in this set seemed to be "used" primarily for general spatial reference within the commune and not for specific functional purposes. That group of categories lacking well-defined biological components were further subdivided

into a folk geologic set and a folk hydrographic set (see Tables 3c and 3d). Categories in these sets, often human-modified, were commonly used when productive activities were directed toward abiotic resources.

In most cases, it was not too difficult to separate categories into one of these etic sets simply by listening to Alluetain descriptions and observing their behavior. However, in a few cases, this simple separation procedure did not work too well. The question then arose, do Alluetains make qualitative distinctions between the categories in the several crude etic sets that I had fabricated, and if so, were these distinctions important to behavior in a way that would justify the introduction of the folk biotope concept? While none of the lexical sets that I presented in Tables 3a through 3e was labeled linguistically, I believe the answer is a qualified yes to both questions.

As might be expected, such "difficult to class" cases demonstrated that an emic continuum relating to the perceived presence or absence of attributes existed within each of the biological, physical and functional components of any given category. A category having a relatively minor biological component, a minor functional component but a well-defined physical component, like the cultivated field rock piles (lo murdʒe, Chpt. 4), could not always be logically distinguished from a category like the Doron des Allues (la rvir) which, while overwhelmingly dominated perceptually by the physical aspect of rushing water, nevertheless possessed an occasional biological and

functional component when trout were fished from it and a major functional component when water was drawn from it to power mills. In such cases, contextual cues become important in deciding whether to call la rvir a folk biotope or lo murdʒe a folk geologic category. In the absence of a quantifiable measure to facilitate such decisions, there will probably always be some cases whose inclusion or exclusion as folk biotopes will require a subjective judgement on the part of the investigator. Despite the presence of a biological component in la rvir category, I decided not to call it a folk biotope. This, because of the dominant nature of the physical component in relation to the biological component, because only a small number of men engaged in fishing for trout (and thus only a very small minority of people had any contact at all with the biological component) and because la rvir is clearly seen as part of the hydrographic network, of which most other categories (except perhaps lo lai/"lake") were seen as mostly lacking a biological component. To the contrary, lo murdʒe, despite its highly salient physical component, was accepted as a valid folk biotope. This, as much because of the folk biological taxa associated with it (even though most of these taxa were infrequently gathered and thus contributed to its low functional salience) as the fact that it was closely affiliated with a highly salient folk biotope, lo tsâ (the cultivated field).

Despite the potential for such "fuzziness" at the interfaces between two or more of these etic sets (which is not surprising in environmental domains defined by the greater or lesser presence of

attributes of the same three components), and the fact that none of the sets was linguistically labeled (which is probably common in domains at this level of inclusion), I believe that there is emic cognitive validity to them. Clearly Alluetains acted similarly toward those categories within any set and differently toward categories in contrasting sets: actions involving biotic resources were overwhelmingly directed toward the folk biotopes, actions involving abiotic resources toward those categories of the folk geologic and hydrographic sets and general territorial reckoning was done by referring to those categories of the folk geographic and topographic set.

* * *

Using data from Les Allues and cross-cultural materials, I have briefly explored in this chapter one small feature of the process by which cultural resources appear to be procured and/or produced in small-scale agrarian societies. As other ethnobiologists have variously noted among human groups with different economic orientations, Alluetains had developed several referential systems which allowed them to relate intellectually and practically to biotic and abiotic space within their "effective environment." But rather than investigate the internal logic of one or another of these systems, I focused here on the practical aspect of environmental reckoning at a level above, or cross-cutting, the folk botanical taxa in Les Allues. In effect, the 250-some folk botanical taxa, mostly cultural resources, were the focus of a significant, if not the dominant, part

of the Alluetain economic effort. But while these taxa were variably distributed within the multiple ecological zones of the valley of Les Allues, their repartition was predictable--to Alluetains--insofar as each was associated with a higher order category which I call the folk biotope, analagous to the vegetation ecologists' biotope (habitat + biotic community). By demonstrating under certain conditions the impracticality of geographically extensive categories like Gade's "plant-use complexes" or Brush's "major crop zones," and of geographically narrow categories like place names, as guides to channeling effort toward folk taxa, I proposed that as economic action is directed toward a given folk taxon, there is a cognitive mediation by the folk biotope to which the taxon is perceptually linked. The value of such a relation in the procurement and/or production of cultural resources is in permitting the resource-seeker, over changing climatic and/or socio-economic conditions, to extrapolate "from the uniqueness of (his) past experience to future encounters with reality" (Hunn 1982:833), thus ensuring a high rate of success in the productive process. By perceptually linking folk taxa with folk biotopes in a predictable manner, this assurred the resource producer or procurer, as he directed his effort toward one or more of the 20-some folk biotopes, that the spot where he was working was appropriate to the production or to the discovery of a desired resource. It also allowed the opportunistic Alluetain to predict which folk taxa he was most likely to encounter within any folk biotope at any time.

However, in the reality of productive processes, things are undoubtedly not so clearcut as the static, linneal application of mental and physical effort, from the decision-making phase, through mediation by the folk biotope, to the actual execution of work directed toward the individual folk taxon, as I have described. At the "mediation by the folk biotope phase" alone, perceptual differences among folk biotopes, variants of folk biotopes and "folk biotope-like" categories, evident throughout the chapters that follow, were hardly explored. Furthermore, categories more extensive than folk biotopes, and place names, both of which were also variously used in directing effort toward biotic space in Les Allues, have not been addressed at all.

Discoveries pertinent to folk botanical classification are perhaps useful in formulating several concluding remarks about what folk biotopes do and do not seem to be. Folk biotopes and folk generics (Berlin et al. 1974:30) are clearly cognitive constructs in which the human mind has responded to clusters of visual attributes as perceptual wholes. They both are also "not only good to think, they are good to act upon" (Hunn 1982:833). But the Alluetain folk biotopes do not appear to be appreciated best as a single or even as several contrast sets of a "habitat" domain, but rather as categories adjacent to one another in a spatio-biotic continuum. Even though the perceptual discontinuities between some Alluetain folk biotopes were pronounced--often conspicuously accentuated by human activities--"hybridization" or intergradation between folk biotopes, an exceed-

ingly rare occurrence between Linnean species, was much more often the rule than not. This point is underscored by the not infrequent use of the productive, analyzable lexical forms lo bɔr də x, lo tər də x, lo lɔ̃ də x, etc. ("the edge of x," "around x," "the length of x," etc.). Such "folk biotope-like" categories connote proximity, adjacency and transition, all variants of contiguity. Despite often great human effort to create distinct boundaries, this, and the fact that Alluetain vegetation was overwhelmingly continuous, suggests that appreciations of contiguity (a is near b, a is a part of b) are more appropriate to understanding classificatory relations among folk biotopes, than are appreciations of similarity (a is like b, a is a kind of b), as is the case in folk biological classification.

Even though an overwhelming number of questions remain, the concept of folk biotope as the basic component of an emic grid of "effective environment," and the related concept of folk phytocoenosis as the unique vegetational component of the folk biotope, appear to be useful tools to better understanding the relation between cognitive processes (gnosis) and practical acts (praxis). Descriptive accounts of these practical acts, of the 250-some folk botanical taxa and the related strategies employed by Alluetains to structure use of the 20-some biotopes follow in Chapters 4 through 10.

NOTES: CHAPTER 3

1. To my knowledge only Barrau (1975:16-17) has specifically objected to the use of this term. However, he has consistently supported the study of interrelations between human groups and their physical and biological environments using the notion of ecosystem. Burns (1961:23) portrays the politically, socially and economically "self-sufficient" high mountain communities of the Queyras region in the southern Alps as generally occupying "equivalent ecological niches," though each is an "independent niche." Since I will show that individual Alluetain families, and collectively the Alluetain community, had direct ecological relations with some twenty folk biotopes often at many levels, the more extensive concept of ethnoecosystem seems to me more appropriate to grasp what was in fact a system in which a well-defined human group occupied multiple niches within a well-defined but heterogeneous physical and biotic landscape.

2. The focus of this dissertation is on the nature and use of referential categories by folk to apprehend biota above the level of individually perceived taxa, and on the productive activities which occurred in relation to these categories. Time and space did not allow for the presentation and analysis of the folk botanical classification. Presentation of folk zoological knowledge and analysis of the folk zoological classification must also await a later date.

3. While the relation between the folk biotope and its folk phytocoenosis is fundamental to an understanding of how the bulk of economic production actually occurred in Les Allues, in several cases ubiquitous taxa were not associated by Alluetains with one, but with many, folk biotopes. At the opposite extreme, some highly localized folk taxa--relatively few in number--could not easily be associated with any folk biotope. These taxa are nevertheless described within the texts and related dictionary entries. They are marked as (localized). The botanical configurations of most folk phytocoenoses must also be seen as perceptual means. Interviews were almost always characterized by some disagreement among informants about which plants were most closely associated with which folk biotopes. This interinformant variability has mostly been masked by the manner that I have presented the folk phytocoenoses.

CHAPTER 4

The Cultivated Fields in Les Allues

Even though the traditional cultivated field agricultural systems are recognized today as producing the major part of the alimentary needs of the high mountain Savoyard communities (Collomb & Raulin 1979:124; Ferrand 1976:41; Nicolas 1979:70; see Appendix 2: A Nutritional Evaluation of Alluetain Foods), nowhere in the Tarentaise have they been well described. The synthetic treatment of traditional economic life offered by Collomb & Raulin for the whole of Savoie (ibid.:158-171) offers little information on the organization and functioning of the "full field" systems in the Tarentaise. A three-year crop rotation was said to be practiced in this ancient province by Cadoret (1929:85,632), but first-hand testimony has long been lacking to confirm this dated assertion. Furthermore, few archival documents furnish information on cropping in Savoie. However, the "Ten-year statistic" of 1862 (ADS, 27M11) does provide a starting point: a general view of the dominant crop rotations in the ancient province at that period. The communes of the cantons of Bourg St. Maurice and Bozel, for example, were described as practicing three-year rotations, while a four-year rotation was said to be practiced in most of the communes of the canton of Aime.

During the course of fieldwork, it was possible to reconstruct the fundamental features of a highly distinctive cropping system practiced in at least two Alluetain hamlets early this century,

probably in several other communes of the canton of Bozel, and in at least two hamlets of the neighboring commune of St. Martin de Belleville (canton of Moutiers). In this system, each proprietor normally plowed, planted and harvested--at the same time as his neighbors--several cultivated fields around the hamlet of his residence. However, his individual parcels, like those of his neighbors, were usually widely dispersed around the hamlet. At first sight these parcels appear haphazardly distributed, but as I shall show, this scattering was linked to an ordered three-year rotation with fallow which appears to have been an integral part of successful long-term agricultural production in the commune. In fact, this rotation was elaborately and rigidly structured in both time and space by means of a set of collective accords and prescriptions which ensured, among other things, the regular and sustained production of the two principle cereal crops, winter rye and spring barley. But while this highly systematic and rigid crop rotation represented the dominant traditional regime practiced in the Alluetain cultivated fields, it was nevertheless complemented by a second type of cropping regime in which quite different cultivars were planted in a much more flexible manner. The complementary use of both rotated and non-rotated fields in a given year appeared to have been basic to the long term agricultural success in this high mountain community.

The Alluetain arable zone: the cultivated fields (lu tsâ) and related folk biotopes

The cultivated field agricultural zone, made up mostly, though not exclusively, of cultivated fields (lu tsâ/"les champs"), was closely associated with the habitation zone in Les Allues. Such arable land was highly fragmented, as were the other agricultural folk biotopes, into hundreds of contiguous privately owned parcels which formed large blocks of land completely surrounding each of the hamlets. While the constructed areas of all hamlets sometimes passed directly to the cultivated fields, this transition was usually buffered by household gardens (lu kurti), hemp plots (lu tsnavje, see Chpt. 5), or hayfield-orchards (lu pra, sometimes called lu verdze, see Chpt. 6). Most agricultural activities involving plowed land were thus practiced within a 200 meter radius of each of the fourteen hamlets (see Fig. 2d) and it was generally the inhabitants of each hamlet who owned the cultivated fields immediately surrounding their residences. Most full field parcels were rectangular, long, narrow, perpendicular to the fall-line and open, that is, unfenced. Each cultivated field was marked on its four sides by half-buried pieces of slate, thin but solid, each often accompanied by one or two similar but smaller "witnesses." Those fields below approximately 1300 m were found on variously oriented mild slopes where surface soil depths usually exceeded 50 cm; those fields surrounding the higher hamlets were found on similar slopes but were more often oriented toward the southwest or south-southwest. Above approximately 1700 m the

agricultural regime passed to the pastoral regime with its high mountain and alpine pastures (see Chpt. 10).

Before the arrival of the potato, sometime during the 18th century, the principal crops of the cultivated fields were winter rye, two-rowed spring barley and pulses (field bean, pea and common vetch). While already cultivated in significant amounts in 1753 in the middle and upper Tarentaise (ADS, C1426), the potato was not noted in Les Allues until 1793 (AC, Serie D, No. 1). As Nicolas (1979:73) has suggested, it is probable that in Les Allues, as elsewhere, the tuber remained at first a garden product before making its way into the cultivated fields. In any event, in less than 50 years after its introduction into the commune, the potato had become the dominant field crop (see Table 4a). It was probably the potato--more than any one single factor--that contributed to the decline of the traditional cropping system. However, in at least two of the 14 Alluetain hamlets, it was its maintenance outside this rotation, in non-rotated fields, which permitted the discovery of what was perhaps one of the oldest European full field agricultural regimes. Also cultivated, but much less important, were two varieties of oats ("white" and "black"), spring rye, winter and perhaps spring wheat, four-rowed barley and turnips.

While cultivars of potatoes, cereals and other domesticates constituted the major part of the cultivated field folk phytocoenosis (see Table 4b), a number of wild plants were also associated with lu tsã̃ (see the Dictionary Entries following, Section 4.a., for detailed

Table 4a: Production in the Alluetain Cultivated Fields
all figures in qtl (a)

	Pot	WRye	SBarl	WWheat	SOat	Pulses	ForBeet	ArtFor
1755		2768	161	0	0	85		17
1756		533	313			63		
1757								
1762				0				
1770		851	143	0	0	42		8
1793	239	849	798	10	1			
1818	713	1597	1253	11	14	50		0
1819	713	1757	1208	12	15	50		0
1820	1188	1278	806	23	20	64		0
1821	1545	958	716	34	20	81		0
1822	1070	1704	895	23	34	29		0
1823	9505	2129	1790	0	7	162		0
1824	7129	1895	1432	0	6	119		0
1825	7604	1810	1548	11	6	113		0
1828	6202	2343	1199	14	10	137		8
1829	5347	2065	1297	11	9	55		4
1836		1597	448	9	4	0		
1852	35	449	1438	0	0	128		
1862						187	35	70
1864	2310	2346	2598	0	0			
1872	2156	2346	1949	0	35	0		
1880	2079	1115	861	222	112	413	64	
1888	1200	1570	752	189	214		400	0
1894	1100	794	406	74	132		350	20
1900	3000	1008	400	56	112	13	300	160
1910	2600	2236	1566	0	845	39	300	870
1915	3100	1402	1096	0	781	20	50	720
1920	3744	987	835	0	429	17	45	1600
1925	3250	869	1044	0	330	19	45	640
1929	2800	420	500	0	160	35	110	640
1935	1700	718	197	0	246	6	200	680
1942	1874	93	285	0	53	0	148	0
M =	2888	1396	963	24	128	74	171	236

Pot = potato
SBarl = spring barley
SOat = spring oat
ForBeet = forage beet
WRye = winter rye
WWheat = winter wheat
Pulses = pulses (field bean, pea, common vetch)
ArtFor = artificial forage (lucerne, saintfoin, red clover from 1828 on; it is not known what products were reported as "forages artificiels" prior to this date).

Table 4a: Continued

(a) This table has been compiled from hundreds of entries derived from tens of agricultural reports consulted at the Archives départementales de la Savoie (ADS) and the Service statistique de la Direction départementale de l'Agriculture de la Savoie (DDA, SS). Early figures were given in "bichets du pays"; many 19th century figures were given in hectoliters. A complete set of notes, providing the references to the original documents and all conversions and calculations has been deposited at the archives of the Vanoise National Park headquarters, 135, rue du Docteur-Julliand, 73000 Chambéry, France. There are clearly several weaknesses to these data, most of which relate to problems of non-standardized reporting and sampling logic. However, its purpose is only to provide an approximate view of Alluetain cultivated field production during the traditional period and an approximate idea of relative production in relation to total production among the various cultivated field crops.

descriptions of the folk taxa associated with cultivated fields). These were mostly "weeds" (le krwe ɛrbe) which in some way interferred with or impeded agricultural activities, though in several instances, useful products were also found among them.

Table 4b: The Folk Phytocoenosis of lo tsã̃ (* = wild)

l avɛna/Avena sativa L./Spring oats (2 cultivars)
lo bɛʃvã̃/Centaurea scabiosa L./Greater knapweed*
lo bla/The domesticated cereals
lo bla nɛr/Fagopyrum esculentum Moench/Buckwheat
la blɛta/Beta vulgaris L./Fodder beet
lo blye/Centaurea cyanus L./Cornflower*
d ɛrba/Herbaceous plants, weeds
l ɛrba rɔdz/Onobrychis viciifolia Scop./Saintfoin
la farnɔza/Chenopodium album L./Fat hen*
la fava/Vicia faba L. var. minuta (Alef.) Mansf./Field bean
la favota/Bunium bulbocastanum L./Great pignut*
lo fazu/Phaseolus vulgaris L./Common bean (several cultivars)
la finas/Lolium ssp./Ray-grasses
lo frɔmɛ̃/Triticum sp./Winter wheat
lo glɛtʒ̃/Galium aparine L./Common cleavers*
lo grɛmʒ̃/Elymus repens (L.) Gould/Couch grass*
lu jʒ̃/Vicia faba L. + V. sativa L. + Pisum sativum L./Pulses
la kwa dɔ rna/Equisetum arvense L./Common horsetail*
lo laepe de tsã̃/Rumex obtusifolius L./Broad-leaved dock*
le lãtilje/Lens esculenta Moench/Lentil
lo lɛ̃/Linum usitatissumum L./Linen
la luzɛrna/Medicago sativa L./Lucerne
la mardzɛl/Lolium temulentum L./Darnel*
lo mɛklo/Avena sp. + Hordeum sp./"Cavalin"
lo mɛ̃nitoba/Triticum sp./Spring wheat
la nɛla/Agrostema githago L./Corn cockle*
lo pae/Pisum sativum L./Pea
lo pavu/Papaver rhoeas L./Common poppy*
le pɛzɛte/Vicia sativa L./Common vetch
lo pja pɔr/Ranunculus repens L./Creeping buttercup*
la rava/Brassica rapa L./Turnip
lo rnɛl/Raphanus raphanistrum L./Wild radish*
la rwela/Convolvulus arvensis L./Field bindweed*
la rwela blãts/Calystegia sepium (L.) R. Br./Hedge bindweed*
la rwesa/Avena fatua L./Wild oat*
la sɛla/Secale cereale L./Winter rye
la sɛla trɛzala/S. cereale L./Spring rye

Table 4b: Continued

la tartariz/Rhinanthus alectorolophus (Scop.) Poll./Greater yellow rattle*
la tartifla/Solanum tuberosum L./Potato (several cultivars)
lo trijole/Trifolium ssp./Red clover
lo tsardʒ/Cirsium arvense (L.) Scop./Creeping thistle*
la tsɛrnavɛl/Galeopsis tetrahit L./Common hemp-nettle*
lo tsurava/Brassica napus L. var. napobrassica (L.) Reich./Rutabaga
l wɛrdzo/Hordeum distichum L./Two-rowed spring barley
l wɛrdzo a katro karo/H. vulgare L./Four-rowed winter barley

Interspersed among the cultivated parcels were rock piles, the result of hundreds of years of constant improvement to the plowed fields. With a vegetation particular to them (see Table 4c), these rock piles (lu murdʒe/"les murgers")--commonly located along parcel boundaries--formed a secondary folk biotope intermittently distributed within the cultivated field blocks. While more often completely barren or irregularly covered by a low-growing woody vegetation, in instances where microrelief was especially difficult and easy access a problem, some murdʒe had become associated with a secondary "woody" deciduous folk biotope, la brusaje/"brushland" (see Chpt. 9). Usually viewed neutrally as necessary by-products of a well manicured full field system, in certain contexts these rock piles took on both positive and/or negative features.

Table 4c: The Folk Phytocoenosis of Lo Murdʒe

lez ãpwe/Rubus idaeus L./Raspberry
lez ãpwe nɛre/R. fruticosus L./Bramble
lo bwaesʒ/Bush
lez ɛpne/Rosa canina group/Dog rose
lo frɛno/Fraxinus excelsior L./Ash
lo savy blã/Sambucus nigra L./Elder
le trɛpə'lɛte/Rubus saxatilis L./Stone bramble

There were also occasions in which lu murdʒe and lu tsã assumed non-agricultural roles. A subset of cultivated fields any given year, for example, was regularly opened to the grazing of animals in fall, each proprietor grazing his animals only on his own parcels, unlike the system of "vaine pature"/"common pasture" of cultivated fields found in the neighboring Haute Maurienne (Meilleur 1985:53). The cultivated field rock piles, and the arable parcels themselves, were also periodically visited by gatherers seeking both alimentary and medicinal plants (raspberry and bramble fruit, elder flowers, great pignut corms, etc.). In late summer and fall, the rock piles, much hotter than the surrounding fields, became favorite spots for drying green agricultural products like the field bean (la fava). When placing and removing plant material, children were instructed to be careful where they put their hands to avoid being bitten by the common asp (la sarpẽ/Vipera aspis) which frequented such hot, rocky sites. While these non-agricultural or marginally agricultural activities were commonly pursued within the arable zone, clearly most economic effort directed toward the full field agricultural sector in Les Allues involved cultivation of the land with plows to produce staple and secondary alimentary products.

Cropping

Early this century, in at least two hamlets (Chandon, Le Villard), the cultivated fields of each were grouped into three breaks, each break being subjected to a three-year crop rotation with fallow and to a strict regime of "agricultural constraints" agreed upon by

the hamlet collectivity (analagous practices in a two-year rotation in the neighboring Haute Maurienne were called "servitudes agricoles" by Onde 1937:369). In these sets of fields, the all-important winter rye and spring barley were cultivated. The surface allotted to these cereals represented the major part of each hamlet's arable domain. However, at the periphery of the rotated fields, though sometimes much further away, a second field type could be found which alternated among cultivated field, long-term fallow and hayfield. These parcels were not subjected to the rigors of the three-year rotation nor to the regime of "agricultural constraints." Potatoes and secondary cereal crops were planted here in rotations selected by the individual owners. While that part of the total arable surface allotted to the secondary crops was much less, the amount in cultivation any year varied in relation to such things as the perceived condition of the major crops in the rotated fields and to the particular situation and needs of each family (e.g., family size, number of animals owned, etc.).

The "forced rotation" of M. Bloch

In his classic work, Les Caractères Originaux de l'Histoire Rurale Francaise, Marc Bloch in 1931 described a stage in French rural history characterized by the separation of arable land (in a given community or hamlet) into three breaks ("soles, pies, fins"), and by the obligatory rotation of crops in these breaks, by all cultivators, according to a three-year cycle (1976:31,41). He called this practice the "forced rotation" ("l'assolement forcé") or the "common rotation"

("l'assolement commun"...ibid.:40,44,45). Linked by him to the "open and elongated fields" agricultural regime of northern and eastern France, this three-year rotation was widely practiced in Lorraine, the Parisian basin and Burgundy from an undetermined time in the past until the 19th century. Relying on unpublished documents from the 13th through the 19th centuries, he described it as a widely distributed type of full field agricultural regime of which "not a trace" could be found in France at the time of his writing (1920s and 1930s ...ibid.: 47fn). During fieldwork in Les Allues, it increasingly appeared that I had found a recently practiced example of the "forced rotation" as described by Bloch. It had apparently been operational in at least several hamlets of two Tarentaise communes (Les Allues and St. Martin de Belleville) from some time in the distant past until finally being abandoned between the two World Wars.

This part of the text will offer a detailed description of this ancient little-known crop rotation as it was practiced in Les Allues, several hundred kilometers to the south of its previously known geographic range, and in a new culture area, that of a mixed mountain agro-pastoral society (see Burns 1963 for a description of this culture area and "societal type"). However, while this highly structured crop rotation regime provided the major part of staple cereal production, it was complemented by a much more loosely managed set of cultivated fields whose function was quite different. These non-rotated fields not only afforded cultivators the flexibility to respond to novel situations that the rotated field system could not

provide, they also allowed cultivation of a much wider range of products than could be cultivated in the narrowly prescribed rotated field regime.

"Forced rotation" at Chandon-Les Allues

The cultivated fields immediately surrounding the hamlet of Chandon were separated into three fairly equivalent groups, each of which I have called a break and which in Alluetain dialect was called la pja (Fr. = "la sole"). The major traditional full field crops, winter rye and spring barley, rotated systematically among the three breaks (le pja) in a three-year rotation with a fallow partially planted to pulses. During the summer months, each of these three crops (rye, barley, pulses on fallow) would be found cultivated in monocultural fashion in one of the three breaks: all the parcels of one break would be planted entirely to spring barley, the second to winter rye and the third, in fallow, would be partially planted to pulses. Each pulse--field bean, pea and common vetch--would be planted to separate parcels within the fallow break. Every year, according to a predictable clockwise rotation, each crop advanced to the fields of the succeeding break.

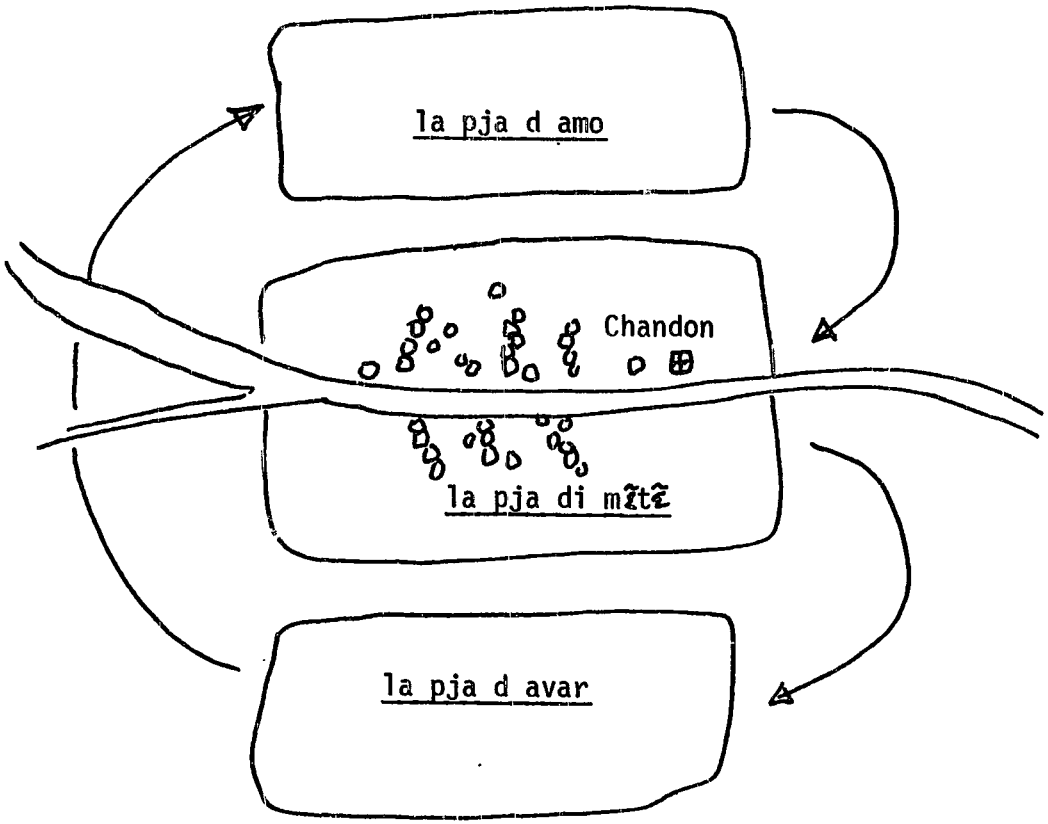
Common agreement among the owners of the fields not only thus specified what and where, it also prescribed when and in part how work would be undertaken. In effect, the inhabitants of Chandon engaged in the same activities (plowing, seeding, harvesting) at the same times; everyone also planted the same three crops in their privately held parcels in the corresponding breaks. All cultivators nevertheless

worked their own parcels in each break (or those borrowed or rented) and benefited exclusively from their own effort.[1] To ensure that the surface allotted to the principal cereal crops was more or less the same every year, each family sought ideally to possess equivalent surfaces in each break. While this resulted in scattering individual holdings around the hamlet, their dispersal was predictable insofar as this ideal was achieved. The location of parcels within the breaks could not, however, be predicted.

Naming the breaks

The inhabitants of Chandon named the breaks according to two distinct logics. First they recognized the physical location of each by reference to the hamlet itself. The break situated above Chandon (that is, upslope) was called la pja d amo ("la sole d'amont"/"the upslope break"), the one flanking the hamlet la pja di mɛ̃tɛ̃ ("la sole du milieu"/"the middle break"), and the third, below Chandon, la pja d avar ("la sole d'aval"/"the downslope break"). The second naming logic took into consideration the fact that every year each break was differently cropped, though in a predictable three-year cycle. For example, the break prepared to fallow+pulses in a given year was planted the following year entirely to winter rye, then to spring barley the third year. Every year these same products advanced clockwise to the next break, from the upslope break to the middle break to the downslope break, returning the fourth year to the upslope break as the cycle began again (see Fig. 4a). The year the upslope break (la pja d amo) was prepared to fallow+pulses, for example, this

Fig. 4a: Chandon and its Three Breaks: The Rotation of Crops



Crops rotated clockwise through the breaks, for example:

1st year
la pja d amo = fallow+pulses
la pja di mîtî = spring barley
la pja d avar = winter rye

2nd year
la pja d amo = winter rye
la pja di mîtî = fallow+pulses
la pja d avar = spring barley

3rd year
la pja d amo = spring barley
la pja di mîtî = winter rye
la pja d avar = fallow+pulses

4th year as 1st year

break was also referred to as la pja samarda ("the fallow break") or la pja de ljɔ̃ ("the pulse break"). The same year, the middle break (la pja di mɛ̃tɛ̃) would be planted to spring barley and also called la pja d wɛrdzo ("the barley break"). Predictably, the downslope break (la pja d avar) would be planted to winter rye and called la pja də sɛla ("the rye break," see Fig. 4b). In local eyes, the grouping of cultivated parcels into breaks, and the associated set of collective accords which governed their cultivation, conferred upon the hamlet inhabitants several advantages over work undertaken in a second group of non-rotated or "free" fields generally located further from the hamlet.

The "free" fields at Chandon

While the rotated and collectively regulated fields constituted the major part of the arable surface at Chandon early this century, on the exterior margins of the three breaks "free" fields could also be found in cultivation. These parcels were not subjected to the strictly defined and unanimously followed "agricultural constraints" of the break fields. Before the collapse of the traditional economy and of the three-year rotation, the potato was cultivated in these fields, often in a loose rotation with spring cereals such as oats, two-rowed barley or spring rye. While none were prescribed, as in the breaks, several rotations were nevertheless practiced in the "free" fields at the individual parcel level early this century: a three-year rotation without fallow was quite common (potato, spring barley,

Figure 4b. A Second Way of Naming the Breaks: The Rotation of Crops for Three Years in la pja d amo

la pja d amo

This year la pja d amo is also called la pja sɛmarda ("the fallow break") or la pja de ljɔ ("the pulse break"). Fallow+pulses are sown in May, followed in September by winter rye.

The second year of the rotation, la pja d amo is now also called la pja də sɛja. Winter rye was sown in September the year before. It remains in the break until August. Turnips are planted by some families in a few parcels after the rye harvest. These are removed in October.

The third year of the rotation, la pja d amo is now also called la pja d wɛrdzo. The break is replowed in spring and sown to spring barley. This is harvested in September.

= fallow+pulses

= winter rye

= turnips

= spring barley

spring oats), although it was not unusual to plant the potato two or more years in a row in some fields.

Cultivation by a given family of spring rye and/or two-rowed barley in "free" fields any given year depended to a large extent upon this family's holdings in the corresponding rye and barley breaks. If, for example, the household did not possess enough parcels in the rye break any year to meet one's needs, this deficit could be made up by planting winter, or more commonly, spring rye in one or more of the "free" fields. The poor appearance of the principal cereals in rotated fields in late spring, resulting from a climatic or other mishap, might also cause some "free" fields to be quickly planted to compensate for this potential productive decline. In addition, when yields began to drop in any of the regularly cropped "free" fields, because of overuse, insufficient fertilization, or both, these parcels were abandoned for a time or were left to revert to hayfields. Those that were left uncultivated for several years were considered to be in ɛrmo (Fr. = "friche"/"long term fallow"), then, as they converted over time into hayfields, as lu pra (see Chpt. 8). After variable lengths of time, they would be recultivated. Long term fallow sometimes lasted up to 10 or 15 years. Nevertheless, the actual length of the fallow period depended on the various pressures exerted to bring a given parcel back into cultivation, such as climatic or biological threats to the staples, exceptional personal needs, growth in family size, etc. This action of bringing long term fallow fields back into cultivation was called la rãtra ("le rentrée"/"the return") and the

potato invariably initiated this transformation. Such fields were plowed in fall and planted to the tuber in spring, thus again becoming lu tsã̃ ("cultivated fields"). As a result of any number of unexpected events, cultivators thus chose the rotations, crops and the surfaces to be planted in their "free" fields that corresponded to their ever-changing needs. This contrasted sharply with the collective prescriptions that were imposed on the fields assimilated into the three breaks.

Before the arrival of the potato, the fields implicated in the three break rotation contributed the alimentary staples--in the form of the bread-making cereals winter rye and two-rowed spring barley--to the Alluetain subsistence base. The rigidity necessary to ensure the quantitative production of these crops year in and year out nevertheless made the rotated field regime little capable of accepting new products and new techniques in the long term, and poorly adapted to respond in the short term to the vicissitudes of agricultural life in the high mountains. The "free" field regime represented the outlet the cultivators needed to adapt their not-always-ideal personal landholding situations to their particular subsistence needs. It also permitted them to react rapidly to climatic or other accidents which periodically threatened staple cereal production in the rotated field regime. The complementarity of "free" fields and rotated fields, as practiced in Chandon, has not been recognized in the northern Alps (see e.g. Monheim 1954), although its presence was hinted at by Collomb and Raulin in the Beaufortin (1979:159). It is probable that

the simultaneous use of a strictly prescribed rotation and of "free" fields was elsewhere in the mountainous regions of Savoie a basic feature of agricultural success. This was the case, for example, in the neighboring Haute Maurienne commune of Termignon where a two-year rotation was practiced alongside a "free" field regime (see Meilleur 1985:31).

Working in the cultivated fields: what, when and how?

> "kɑ̃ lo nɑ̃ də la rɛkrəva etɛrɛ̃, il fo sotrə l are, il e bə̃ a sɛna lo bla"/"when the rɛkrəva rivulet frees itself of snow, it is time to get out the plow, and begin to plant the bread cereals."

Preparatory work for the Alluetain agricultural year began the preceeding winter. On cold and clear days beginning in February, manure was brought from the manure heaps, where it had been brought from the stables at regular intervals, and dumped at the summits of the cultivated fields. Later in winter, when the risk of snowfall was mostly past, ashes were thrown onto the fields to help accelerate melting of the snowpack.[2] In 1862, in the canton of Moutiers, gypsum and street mud were also fertilizers worth using (ADS, 27M11). At Chandon, the dirt and animal manure--la burba--which accumulated in the hamlet square throughout the year would be gathered up each spring by a different family in turn and put on gardens or cultivated fields.

But before any of the manure could be spread onto the cultivated fields, the band of earth at the base of each parcel had to be carried to the summit of the parcel. Since most cultivated fields in Les Allues were on hillsides, the normal action of plowing perpendicular

to the fall-line steadily moved a part of each parcel's topsoil to its lower boundary. Before any other spring agricultural activity, this earth had to be moved back to the top of the field. On small parcels, this was done by two persons using a hand barrow (la θvir/"la civière"); on larger parcels, a specialized mule-pulled wooden sled (la ldzɛta) with a dumping box was used. To move this dirt, it was first necessary to break it up, either with a two pronged pick (lo dzgo) on smaller fields, or with the plow (l are) on larger ones. Once loosened, but before being transported, weeds (le krwe ɛrbe) were removed from the entire band of dirt. This was often the job of children and considerable time was invested to ensure that two particularly bad weeds--couch grass and hedge bindweed--were not simply recycled to the top of the parcel when the earth was moved upward.

In the hamlet of Mussillon (1350 m), these activities began when the natural environmental signs were propitious, as the dicton indicates. Usually this coincided with the earliest moment that the soil was well drained and could be worked, in general sometime in the second half of April or in early May. Every year, these several operations--breaking up the dirt band (lo brɔ), removing the weeds, moving the dirt to the summit of the parcel, spreading the manure, then plowing--took each family two or three weeks to complete in the set of fields they intended to cultivate.

In response to initial questioning, the older men generally responded that cleaning, mounting the earth and manuring were opera-

tions which took place every year in all the fields to be cultivated. These statements, which seemed reasonable in a mountain setting where most arable fields were sloped and manure was abundant, were not in fact entirely accurate. In years when bad spring weather retarded work, for example, transporting earth might be by-passed, and less steep parcels necessitated this operation less often. But such exceptions aside, all parcels planted to winter rye in a given year escaped these springtime movements.

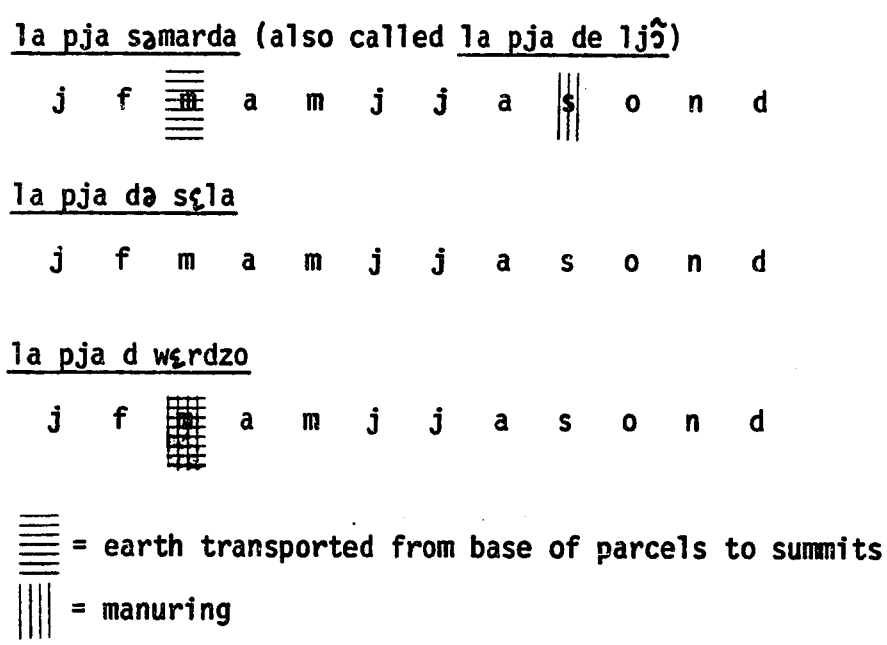
As noted above, the fields allotted to the rye break any year had been preceded by the fallow+pulse break. That year, these same fields had been plowed in May. After the pulse harvest, they were replowed in September just before rye was sown. Before the May plowing, the earth-moving and weeding operations were performed; before the September plowing they were not. Fields in what became the rye break were thus not subjected to earth transport in fall, nor were they the following spring when the overwintered rye plants were beginning to regrow. The following year, when this same break was sown in May to spring barley, normal earth transport and weeding occurred. Each parcel in the three breaks was therefore normally subjected to earth moving two years out of three, in spring just before the pulse and barley crops were sown.

According to the same older cultivators, once the earth had been moved to the summits of the fields, all parcels were manured. Closer examination showed that manuring actually occurred on a given parcel, like earth transport, two years out of three, but in approximately

half of these fields, at different times of the year. Actually only the fields of the barley break were fertilized any year immediately after earth transport and weeding. Understandably, the rye break was neither plowed nor manured in spring, while the fallow+pulse break, by custom, was plowed but not fertilized. In fact, those fallow parcels not planted (and they seemed to be in the majority) were treated exactly as those that were: the lower band of earth was broken, weeded and then mounted, then the field was plowed but not fertilized. Fallow fields were manured only after the pulse harvest, just before being plowed and planted to rye. Until this second plowing in September, the unplanted fallow fields were left to the effects of sun, winds and rain. A schematic representation of fertilizing times shows that each parcel implicated in the three breaks was actually manured approximately every 18 months, at the end of August, and one and a half years later, in May (see Fig. 4c).

Spring plowing in fields included in the fallow+pulse break and the "free" fields began immediately after earth transport, and in the barley fields after earth transport and manuring. The early 20th century plowing instrument was a wooden plow (l are/"l'araire") with a reversible wooden mold board and a metal plowshare and coulter. There was not a frontal train per se, though by this century the short plow beam was furnished with a small wooden wheel (see Collomb 1976 for a description of what he calls the "quadrangular plow"; see also

Figure 4c: Earth Transport and Manuring in the Three Breaks (any given year)



Haudricourt & Brunhes-Delamarre 1955 for the authoritative vocabulary used in describing Old World plowing equipment). By the middle of the 19th century, Alluetains had turned mostly to mules as their plow animals. Before, the mule was used only as a pack or sled-pulling animal (ADS L556) and plowing was done with bovines: oxen for the wealthier families, milk cows or heifers for the more modest ones. The traditional bovine-adapted plow was constructed with a very long plow shaft (2.5 to 3 m) that passed between the two cows or oxen. The shift to mules coincided with the shaft being reduced to approximately half this length and the installation of a small wooden wheel at its frontal tip.

Before the replacement of bovines by mules, a system of mutual aid existed between some Alluetain families and their neighbors living in communes at lower elevations. Even though two bovines were normally used to pull the traditional wooden plow, those families employing oxen did not usually keep two such animals for this purpose. They kept one, while a family from a lower elevation hamlet in a neighboring commune kept the other. The two families were considered to be "associated" in the ownership, care and use of the two animals. Because of differences in elevation between the hamlets, the moments for plowing--and the moments when both oxen were needed--were usually separated by several weeks. This allowed time for the lower elevation partner to finish his work before the higher elevation partner needed both animals. The costs--especially in terms of winter fodder--were borne equally by the two families. Each was thus assured the animal

traction necessary at the proper time, while both were able to reduce their forage costs by fifty percent.[3]

Plowing, sowing, harvesting: general rules

Plowing in Les Allues always began at the lower margin of each parcel. At the end of each furrow, which was cut perpendicular to the fall-line, the cultivator would turn his team, mount the slope 40 cm or so, change the position of the mold board to downslope and begin again parallel to the first furrow. The first cut was placed so that the earth thrown up would fall into the depression (lo brɔ) created by the earth transport operation. The deepness of the cut varied with the quality of the soil but usually was around 20 to 30 cm. The furrows were spaced at approximately 30 to 40 cm intervals.

Working in the same breaks at the same times through common accord, the Chandon cultivators enjoyed the advantage of being able to turn their teams on neighboring parcels without risking conflicts. This must have been particularly important during the period that bovines were mostly used; the entire plow team must have been nearly one and a half to two times the length it was after mules were adopted. Each person could thus plow in a straight line right up to the limits of his parcels. In the "free" fields, this was not implicitly understood, though it did occur when two owners had made some arrangement to plant the same crop in contiguous parcels at the same time. To avoid, for example, the clash that would inevitably result by trampling part of a neighbor's winter rye parcel during spring plowing in an adjacent parcel, the team working in a "free"

field would be stopped several meters before the parcel boundaries. The lateral margins thus created (la tsavna, le tsavne) were worked either with the pick or with the plow turned uphill at a steep angle to finish the furrow.

Seed, with the exception of the potato which was placed in the furrows, was broadcast from the hand ("à la volée"). The moon was closely watched during sowing periods and the new moon was systematically avoided. Alluetains attributed good vegetative growth to plants sown at this period, but they claimed that flowers and seed would not form later.

Harvesting the various crops occurred at different times. However, the fields in each break were harvested by all owners at the same time, on days fixed by common agreement. Individuals with parcels toward the center of a break moved in as the outside parcels were mowed (see a similar strategy in the hayfield "bans," Chpt. 8). The crops planted in the "free" fields, to the contrary, were harvested at the moment each individual desired. To avoid conflicts between owners of contiguous parcels planted to different crops--and potentially harvested at different times--an arrangement was usually worked out beforehand. To the extent they could be, "free" fields were located next to paths, greatly reducing "crossing over" problems. Cereals were formerly harvested with the sickle (Costa 1773:263), but by early this century at least, the scythe was being used (though in the neighboring Haute Maurienne, the sickle was still being employed).

The scythe was also used for the harvest of the pea and common vetch. Field beans and turnips were pulled by hand.

Considering the extreme fragmentation of the fields in the arable blocks, we can begin to appreciate the benefits accrued by organizing the fields into breaks and by prescribing that all work be done by individuals at the same times. Even after the reduction in the length of the plow beam, which resulted from the switch to mules, plowing within the confines of a 200 or 300 m^2 parcel without being able to turn the team on neighboring land would not only have been difficult but would have been especially wasteful of time and effort. Furthermore, at Chandon the breaks appear to have been located on the deepest, most fertile soils and on the mildest slopes nearest to the hamlet. Composed nearly uniformly of contiguous cultivated fields, one of the presumably most productive agricultural spaces in the commume was thus not reduced by access roads or paths. Since everyone was obliged to work at the same times in each of the three breaks, passing over neighboring properties to plow, plant or harvest a parcel in the center of a break posed no problems (see the similar tactic in the hayfield "bans," Chpt. 8). In addition, since each parcel in a given break was planted to the same crop, each cultivator could sow seed right up to the limits of his properties. Grains from the different cereals were thus not mixed at the edges of the fields.

These collective accords and prescriptions clearly appear to have been adopted by the hamlet inhabitants so that the fullest possible extent of the best arable lands were made available to them as a

group, and in such a way which increased the productive potential of the entire resource. However, despite these concessions to collectivism, the principle of private ownership was retained, perhaps so that individual incentive and extra care could be directly rewarded, not so much by the acquisition of ever-increasing amounts of property, but simply by improved yields per unit of surface. Private ownership also allowed each Alluetain family to respond independently to its ever-changing needs and overall economic situation.

Fallow+pulses: specific rules

The agricultural management strategies and techniques practiced in the fallow+pulse break fields were quite different from those practiced in the cereal breaks. In spring, for example, the fields of this break were always plowed before those of the barley break. The several days thus gained were sometimes decisive in assuring the maturation of the pulses before their obligatory harvest in late August or early September to make way for winter rye. Unlike the cereals, pulse seed was sown before plowing (sɛna su rai...see also Sigaut 1977:385) and the fields were neither harrowed nor were the clods otherwise evened out after plowing. These last two operations, which were practiced early this century in the cereal breaks, seem clearly linked to the shift to the scythe for harvesting, which most likely occurred in Les Allues sometime in the 18th or early 19th centuries. It is probable that harrowing and other ground-evening techniques (e.g., clod-crushing) were also adopted about this time to allow a clean cut of the cereal stalks with this instrument at ground

level. These changes in field preparation and harvesting techniques probably contributed at least in part to cereal seed being sown after plowing rather than before (as I assume to have been the case in Savoie before the shift to the scythe). Seed could be much more evenly covered after clod-crushing and harrowing than after plowing alone. We must assume that this added work investment was more than compensated either by higher cereal yields or by lower harvesting times. Leaving the clod rows unbroken and unharrowed in the fallow+ pulse break may also have been important water retention and weed reduction techniques critical to the success of the cereal crops which followed for the next two years in the same fields.[4] In any event, sowing the pulses, then plowing without subsequent leveling of any kind, assured the rapid completion of work in the fallow+pulse break. It was only after the pulse harvest in late August or early September that these same fields were fertilized.

Some years, after very bad summer weather, the pulses were not ripe by the time winter rye was to be planted. However, the success of the entire rye crop necessitated that deadlines be fixed in the hamlets for fall planting: at Mussillon (1350 m), the 14th of September; at Chandon (1250 m), the 21st of the month. Each day that rye was not sown after these dates was considered dangerous. The arrival of an early severe frost--in October, for example--could kill the young cereal plants and place the rye harvest in jeopardy the following year. At the last possible moment, several days before the deadlines--and by collective accord--the pulses, whether mature or

not, would be harvested and the fall rye planting operations begun. Depending on how green they were, the pulses might be placed on the full field rock piles (lu murdʒe)--which radiated large amounts of heat on sunny days--to ripen and dry.

The Cereal fields: specific rules

Any given year, the cereal fields were managed quite differently than those fields implicated in the fallow+pulse break. Parcels of the barley break were subjected in May to both earth transport and manuring, while the winter rye fields, plowed and sown in September, were manured but the earth was not transported. This had been done in spring when these same fields were being prepared as the fallow+pulse break. Such differences excluded, the fields of the two cereal breaks were worked in a similar manner. Contrary to the parcels sown to pulses, which were generally plowed by the cultivator working alone, laboring in the cereal fields was often a family affair. One or two family members would follow immediately after the cultivator, breaking up the larger clods with picks and removing weeds. On steeper parcels, a special tool, la kasa mɔta ("the clod breaker"), was employed. On very steep or rocky parcels--those often associated with the "free" field regime at Chandon--the soil might be tilled with a pick. These activities finished (realized by all cultivators at the same time in a given break), each family moved rapidly to sow its individual parcels.

Manuring, plowing, clod-breaking and sowing of the cereal grains were followed in that order by the passage of the mule-drawn wooden

harrow (usually made of ash, see Section 9.a.). Fields planted to cereals--whether assimilated into breaks or not--were usually harrowed immediately after sowing, normally the same day. In the best parcels, the harrow might be followed by the passage of a cylindrical wooden clod-crusher, lo rulo ("le rouleau"), usually of sycamore (see Section 9.a.). This instrument was generally pulled by a man.

Once planted in May, spring barley was left to mature. This was not the case for winter rye. In mild autumns, winter rye might grow to 20 cm or more before the arrival of snow. Profiting from this rich forage, which would otherwise rot under the snow during the winter, cultivators would either mow the young rye stalks and give them to the domesticated animals as green fodder, or more often, they would pasture animals (especially sheep and goats) directly in the rye fields in late fall. In this way, supplemental mowing was avoided while animals nourished themselves and fertilized the fields at the same time. Normally much less well fed in winter than the bovines, the sheep and goats thus gained an important nutritional infusion just before winter stabling. The browsing of these animals also served to thin the rye which was said to result in more vigorous growth the following spring.

The harvest dates of the various cereal crops were quite regular from year to year. Clearly they were consciously staggered in such a way to avoid conflicts in labor allocation. Winter rye, sown in September, was always the first cereal to mature the following year. Depending upon altitude and the orientation of the parcels, rye

ripened in 11 to 12 months in Les Allues: at the Chef-lieu (1130 m) and Le Villard (1215 m) at around the second or third week of July, at Mussillon (1350 m), on average two weeks later. However, in the lower hamlets rye almost always reached maturity after haymaking had already begun. The first hay cut (of the two, see Chpt. 8) lasted from approximately the 15th of July to the end of August. Some time during this period, for about one week, the scythes passed to the rye fields. They then returned to finish the first hay cut by the end of August. It was then time to harvest the pulses and plant the fallow+pulse break to winter rye. This cereal safely in the ground, the spring barley was harvested, usually around the second or third week in September. This took about one week in each hamlet.

In the lower hamlets (less than 1250 m or so), turnips were planted in late July or early August as a catch-crop in some of the parcels which had just been harvested of rye. One parcel was ordinarily selected by a family (in the rye break, for example) and a central area was tilled with the pick then sown by hand with turnip seed. The soil was neither manured nor harrowed. Seed was covered with a rake. In October, the turnips were pulled up by hand. The good-sized ones were kept as human fare; the green or poorly formed roots were fed to the domesticated animals.

It is difficult today to know the traditional management strategies and agricultural techniques associated with the secondary cereals: winter and perhaps summer wheat, spring rye, four-rowed winter barley and the two spring oats. However, all were grown in the

"free" fields. With the exception of the punctually significant spring rye (see infra), and the oat varieties which gained importance in the middle of the 19th century as mule use expanded to include plowing activities (see Table 4a), the others were little cultivated in the commune.

Introduced in the 18th century, by the early 20th century the potato was the single most important crop in Les Allues. The preparation and harvesting of potato fields was considerably different from that of the cereal fields. Before the middle of the 20th century, fields planted to the tuber were prepared in May much like those of the fallow+pulse break; earth was transported, followed by plowing but with no manuring. Generally one or more persons followed the cultivator, placing the seed potatoes every 20 or 30 cm in the furrow. Others followed further behind, breaking up the dirt clods with picks and covering the potatoes. The harrow was not passed until 10 or 15 days later and care was taken to ensure that it was a very light passage; the cultivator did not wish to touch the tubers nor the germinating potato eyes. Harrowing at this time was thus well calculated to disrupt the first wave of weed growth after planting but before the potato sprouts had broken ground. One week to ten days later, with the sprouts out, the fields were weeded with the two-pronged pick. Based on individual family habits, the state of weed growth and the time available, potato fields might be hoed a second time several weeks later. In the two hamlets still practicing the three break rotation early this century (and where the tuber was still

mostly planted in the "free" fields), villagers often hoed potatoes at the same times, much as they worked in the breaks. This was felt to be an agreeable aspect of one of the more physically demanding of the agricultural jobs.

The potato harvest began sometime in October, when the vegetative parts of the plants had withered. There seems to have been few or no collective rules controlling this work. Stems were cut first with the scythe then piled out of the way in a corner of the field, and eventually burned. Some people began to dig out the tubers immediately, beginning at the low end of the field, moving across the field horizontally; others waited a week or so to ensure the potatoes "swelled up" after the stems were cut. Potatoes were removed delicately with the pick and immediately separated into three classes (see infra). In the evening they would be transported to the cellar in sacks or wooden boxes by a mule and sled team. Such labor intensive efforts united most family members in the potato fields for at least one week in October. After the Second World War and the near collapse of traditional agriculture, the potato increasingly became the only full field crop that was planted by most families. Cultivation techniques and management also changed, leading to annual manuring, earthing up over the tubers, increasing the spaces between seed potatoes, vertical plowing with winches, the use of commercial "ameliorated" varieties and eventually to the movement of the potato into the best fields.

Dictionary Entries

Section 4.a. The Domesticated and Wild Taxa of the Alluetain Cultivated Fields

lez ãpwe. Rubus idaeus L. Raspberry

(See Section 9.a.)

lez ãpwe nɛre. Rubus fruticosus L. Bramble

(See Section 9.a.)

l avɛna. Avena sativa L. Spring oats (2 cultivars)

In contrast to some mountainous regions of Savoie, like the ancient province of Beaufortin to the north (Collomb 1977:338), oats were not used as human food in the Vanoise Massif. In Les Allues, as in neighboring communes, spring oats were principally used as mule fodder (1860-1868, Arrond. de Moutiers...ADS, 27M1, 27M2; 1853, Tarentaise...ADS, FS310). The increase in Alluetain oat production in the second half of the 19th century (see Table 4a) was probably attributable to the increase in the mule's work load and consequently to the number of animals kept in the commune. A hauling animal (sled loads of hay, manure, logs, wood, etc.) and pack animal (grapes, cheeses, etc.) before the 19th century, the mule also became the primary plow animal toward the end of this same century, gradually replacing the bovine. Before manufactured products became available and could be purchased, oat straw was used to fill pillows and mattresses.

In Les Allues, oats were always sown in "free" fields (see supra), though usually in rotation with another crop, often with potatoes.(5) Two cultivars of spring oat were sown in the commune early this century: l avɛna blãts ("white oat") and l avɛna nɛra ("black oat"). White oat, considered to be of better quality and less susceptible to laying down, but less productive and slower to mature, was cultivated mostly in the hamlets below 1250 m. Black

oat, considered to be of lesser quality and susceptible to laying down, but more productive, faster maturing and more cold resistant, was cultivated in hamlets above 1250 m. Many oat cultivars have been cited as being grown in Savoie (Constantin & Gave 1908:12; Guicherd 1930:54; Min. d'Agri. n.d.:23; Tochon 1871:184). To which of these cultivars the "white" and "black" oats of Les Allues might correspond is not known. Oat seed was regularly renewed when yields began to drop. Seed was sought in neighboring communes, as it was for spring barley (see l wɐrdzo, infra) and potatoes (see la tartiflə, infra).

lo bɛʃvɑ̃, lo bɐtsəvɑ̃. Centaurea scabiosa L. Greater knapweed

Greater knapweed was known much more for its tenacious root in Les Allues, said sometimes to be able to stop a plow, than for its vegetative or floristic aspects. This species was especially dreaded in the cultivated fields and considerable effort was expended to remove it. When in flower, and outside the agricultural context, it was usually called lo tsardɔ̃, the gloss for most thistles (see Section 8.a.).

la bla. The cultivated cereals, the bread-making cereals

The domesticated cereals--principally winter rye and spring barley, but also spring rye, spring oats, perhaps spring wheat and others--constituted an extremely important group of cultivars in the traditional Alluetain economy. In Les Allues, spring barley and winter rye were grown to 1700 m; both were grown to over 2000 m in Savoie at the hamlets of Ecot and Averole in the communes of Bonneval-sur-Arc and Bessans in the neighboring Haute Maurienne (Cadoret 1918:166; Onde 1938:9). Well after the arrival of the potato, and right up to the time of the collapse of traditional agriculture, there was always more surface planted to cereals than to any other crop. In 1925, for example, 3251 quintals of potatoes were produced in 65 hectares while the principal cereals, winter rye and spring barley, were cultivated in 190 hectares and produced 1913 quintals (DDA, SS 1925). In their many alimentary forms (principally bread, but also gruels, noodles, cakes, etc.) the bread cereals represented the single most important daily contribution in kilocalories and in protein to the Alluetain diet (see Appendix 2). However, the role of domesticated cereals as human food was not their sole contribution to the Alluetain economy. A range of other products and uses for cereals also added directly or indirectly to the well-being of the Alluetain peasants: rye straw provided thatch for

roofing (especially barns), to make beehives or women's hats, to protect cheeses during transport, to give to animals as food or for bedding, to tie up grape vines; bran for newborn and sick animals; surplus flour or seed to fatten growing animals or to increase milk production in cows, etc. A small part of traditional cereal production was probably sold at the local market in Moutiers, procuring precious cash. Cereals, among other agricultural products, were commonly used to pay taxes (Academie de la Val d'Isere, 1866).

The term lo bla was applied in two senses in Les Allues: some people used it only to refer to the bread-making cereals, others extended it to all domesticated cereals. It is, however, clearly a functionally-based category which glosses primarily to winter rye + spring barley. Oats, strictly animal fare in Les Allues (see l avena, supra) are often excluded from the category. If pressed, some Alluetains would add buckwheat to the category, even though it is not a Graminae (see lo bla ner, infra) nor was it cultivated to any extent in the commune.

lo bla ner, lo roge. Fagopyrum esculentum Moench. Buckwheat

Even though buckwheat belongs to the botanical family Polygonaceae rather than Graminae, some Alluetains thought it to be lo bla ("bread-making cereal," see supra). Introduced into Savoie toward the end of the 15th century according to Tochon (1871:58), this crop was little cultivated in the mountainous regions, probably because it could be heavily damaged even by light spring frosts. According to Constantin & Gave (ibid.:115) and Guicherd (ibid.:55), its role was limited to that of a catch-crop planted after one of the principal cereals, usually in the lower valleys.

In Les Allues, older cultivators either had not planted it or had experimented with it only once or twice. In neighboring communes, buckwheat was likewise planted in very small quantities during the 19th century (ADS, L556; ADS, FS310). Its use as a catch-crop could not be verified. In the neighboring commune of St. Jean de Belleville (canton of Moutiers), it was planted in small parcels in June and was harvested in August. Here, the flour was sometimes mixed with polenta (cornmeal produced in the lower valleys of Savoie and regularly taken into the "alpages" and eaten in summer, see Chpt. 10) or used to make local biscuits or "crozets" (a local square shaped buckwheat pasta eaten with cheese melted over it...Hudry 1979:213). In 1853, buckwheat was reported to be consumed in the Tarentaise as porridge (ADS, FS310).

la blɛta, la bɛtərava, la karɔta. Beta vulgaris L. Fodder beet (3 cultivars)

Introduced into Savoie probably toward the end of the 18th or in the early 19th century (Meilleur 1985:56), the history of the fodder beet in Vanoise is much more that of a garden domesticate than of a full field crop (see Section 5.a.). Early this century in Les Allues small numbers of families planted fodder beets in one or two small cultivated fields close in to the hamlets, otherwise they were found in the gardens. The entry of the fodder beet into the cultivated fields is quite recent; in 1868..."the beet (was) hardly cultivated in Savoie outside of the gardens" (ADS, 27M4; see also Montmayeur 1865:45). This movement toward full field cultivation seems to be linked to rural depopulation, which began in Savoie in the mid-19th century (see Table 2a), to the related decline in traditional economic activities, including the abandonment of cultivated fields, and to stimulation by regional agricultural authorities trying to provoke the Savoyard peasantry into specializing in milk and cheese production and stock-raising. As a result, the fodder beet was probably planted in full field parcels for the first time in Les Allues sometime late last century or early this century.

Several cultivars were used in Les Allues in the early decades of this century. They were identified mostly by color: le blɛte blãtse ("white fodder beets"), le blɛte dzɔne ("yellow fodder beets"), and le blɛte rɔdze ("red fodder beets"). The terms la bɛtərava and la karɔta are applied variously as intracommunal synonyms for la blɛta. The "yellows," and to a lesser degree, the "whites," were preferred. The "reds" were considered maladapted to mountain conditions. Fodder beets were used primarily as winter food for the domesticated animals and to fatten pigs before their slaughter around Christmas. A small amount of fodder beet was added to the local pork sausage made of offal and particularly lungs (see Hudry 1979:218).

lo blye. Centaurea cyanus L. Cornflower

Cornflower was a common, though mostly innocuous, annual weed in the rye fields. Children were instructed to remove it during the harvest period. The term was extended by some people to C. montana L. (perennial cornflower), common in hayfields.

lo bwaesʔ̃. Bush

(See Section 9.a.).

lez ɛpne. Rosa canina group. Dog rose

(See Section 9.a.).

d ɛrba. Herbaceous plants, weeds.

(See Section 7.a.).

l ɛrba rədz. Onobrychis viciifolia Scop. Saintfoin

Apparently introduced into Savoie in the second half of the 18th century (Cadoret 1929:8; Collomb & Raulin 1979:169; Nicholas 1978: 695; Verneilh 1807:435), the forage legumes (lucerne, red clover, saintfoin) began to be grown here and there in the Vanoise Massif in the early 19th century (cantons of Moutiers and Aime...ADS, L556). Later, in the second half of the century, saintfoin became increasingly planted in the Tarentaise as an artificial forage, but its importance was localized (especially to the cantons of Bourg St. Maurice and Lanslebourg in the Haute Maurienne...see Meilleur n.d.).

In Les Allues, saintfoin was hardly planted and was much better known in its wild form (see Section 8.a.).

la farnəza. Chenopodium album L. Fat hen

(See Sections 5.a. and 7.a.)

la fava. Vicia faba L. var minuta (Alef.) Mansf. (presumed). Field bean

The field bean, the pea (see lo pae, infra) and the common vetch (see le pɛzɛte, infra) formed one part of the traditional three year crop rotation in Les Allues and elsewhere in the canton of Bozel (see supra; see lu jɔ̃, infra). The presence of the fava bean in the family gardens appears to be much more recent, and there a different cultivar was clearly being used (see la fava di kurti, Section 5.a.).

In Les Allues, the field bean played an important economic role in several ways. The larger families were said to consume great amounts of field bean (and pea) soup, and its flour was a standard ingredient in the bread-making recipe. Alluetains claim it was added not only to increase the volume of the dough, but also to help it rise. According to Hudry (1979:211) and Collomb & Raulin (1979:133), it was added to help conserve the bread between bakings. Combining field bean with rye and barley flours must have enhanced the nutritional quality of the bread, particularly with respect to protein complementarity (cereal grains + legumes), augmenting protein quality and quantity (Lappé 1982:238). Field beans, like the other pulses (see lu jɔ̃, infra), were also prepared as a forage "soup" for the domesticated animals. During the milling of slightly wet barley or rye, dry field beans were periodically added to clean the flour encrusted millstones. Surpluses were sold.

Tochon (ibid.:185), then Constantin & Gave (ibid.:40) spoke of the preference in Savoie for planting a winter field bean (seed sown in the fall), but this was unknown to the elderly Alluetains. Traditional spring-sown field bean seed was recovered from Les Allues. A rapid examination allowed it to be associated with var. minuta Alef. Mansf. (Muratova 1931) and with seed discovered in the Grotte de la Balme, Sollières-Sardières in the neighboring Haute Maurienne, dated to the late Bronze Age (A. Bocquet, pers. comm.). The movement, from the 18th through the 20th centuries, to introduce leguminous plants into European full field systems as a means of improving soil quality by nitrogen-fixation thus represented in Les Allues and in neighboring communes the simple prolongation of an apparent long-standing agricultural practice.

la favota. Bunium bulbocastanum L. Great pignut

Children loved to pick over freshly plowed fields in spring, or after the potato harvest in fall, in search of great pignut corms. Some ate the small, peppery, nutlike roots right away, after removing

the blackish "skin"; others dried them first, saying the pignuts thus became sweeter to the taste.

lo fazu. Phaseolus vulgaris L. Common bean (several cultivars)

Introduced into Spain around 1530 (Fournier 1977), it is not possible to say exactly when the common bean arrived in Savoie, but it was considered common by the late 18th and early 19th centuries (Costa 1773; Verneilh 1807:428). Verneilh (op. cit.) cited the same distinction made in Les Allues between "dwarf beans" (lu fazu nɛ̂) and "climbing beans" (lu fazu rama). Several varieties of common beans were grown in Les Allues early this century in gardens (see Section 5.a.), in vineyards between grape vines (see Chpt. 7), and in cultivated field parcels. In the lower hamlets, some families planted the "dwarf beans" to entire full field parcels close in to their hamlets (= "free" fields; common beans, while sometimes thought to be pulses ...lu jɜ̃, see infra...were not sown in parcels of the fallow break as were the field bean, pea and vetch). Before the arrival of a string bean variety, probably sometime this century, common beans were dried, threshed and consumed in soups, sauces and salads much like the field bean and pea. Cooking and eating the entire fruiting body (seed + pod) is recent.

Many names and synonyms were used to differentiate several fairly stable common bean forms cultivated in Les Allues and neighboring communes (see Section 5.a.). Spontaneous names referring to size and color were also regularly used on what appeared to be less stable forms and on hybrids. Ensuring separation of varieties (beyond the "dwarf" and "climbing" distinction) was not considered important in Les Allues. Many forms might be planted indiscriminately in a given field (see Constantin & Gave ibid.:51 for a similar observation).

la finas, lo sɛ̂fwɛ̃, l ɛrbədzo. Lolium multiflorum Lmk., L. perenne L. Ray-grasses

The exact date of the arrival of ray-grass cultivation in the Tarentaise (or in Savoie) is not known. It was cited in the "Ten-year statistic" of 1862 in two communes of the canton of Moutiers (ADS, 27M11), suggesting introduction sometime in the second half of the 19th century.

Ray-grasses had little success in the higher communes of the Tarentaise. In Les Allues, the ray-grasses were hardly known

before World War II. The three dialect terms, la finas, lo sẽfwẽ, l ɛrbɑdzo, were employed fairly indiscriminately to refer to several species or mixes of grass-dominated artificial forages procured in recent years from the agricultural co-op in Moutiers.

The "Ten-year statistic" of 1862 also cites under the rubric "prairies artificielles" the rubric "mélanges" ("mixes"). The constituents of these mixes are not specified. Similarly imprecise rubrics such as "grasses and mixes of grasses" (ADS, 27M36) or "other (green) grasses" (DDA, SS 1929) can be found in later reports. The cultivation of forage grasses, in whatever combinations, was not important in the Vanoise Massif.

lo frɔmẽ. Triticum sp. Winter wheat

The cultivation of winter wheat in the mountainous regions of Savoie has often been denied by local scholars (Arbos 1922:113; Cadoret 1918:166; Guicherd 1930:51; Tochon 1871:183; but see Onde 1938:9). However, winter wheat was grown in considerable quantities in certain parts of the Vanoise Massif (cantons of Aime and Bourg St. Maurice), though it was cultivated only in small quantities in Les Allues (see Table 4a). Probably because of its status as "the most noble of cereals," many varieties have been described as being traditionally cultivated in the lower regions of Savoie...see Meilleur n.d.). Which variety(s) was being grown in Les Allues and in neighboring communes is open to speculation; there are actually few means today of sorting out this difficult situation where most ancient cultivars are known by name only. The problem is compounded when the many "ameliorated" varieties--which flooded the region during the 19th and 20th centuries--are considered. Moule (1971:45) claims that all wheat populations grown in eastern France 100 years ago were derived from bread wheat (T. vulgare = T. aestivum).

In the early decades of this century, the very small amounts of winter wheat harvested in Les Allues were reserved for making noodles, local biscuits ("galettes") and other feast-day treats. Winter wheat is no longer cultivated in Les Allues and seed could not be found. However, small parcels were discovered in cultivation at Villarodin-Bourget in the Haute Maurienne and presumed traditional seed was collected. It is possible that seed still exists in Haute Tarentaise where, in 1954, Monheim (p. 613) found that ..."near la Savine and la Guraz, winter wheat is still cultivated to 1550-1650 meters" (my trans.).

lo frẹno. Fraxinus excelsior L. Ash

(See Section 9.a.)

lo glɛtʃ̃. Galium aparine L. Common cleavers

Common cleavers was a bad weed of cereal and potato fields. Where it grew in dense bunches, it was removed, if possible, before harvesting. Rolled into balls, the plant might be used to brush honey water around the inside of an unused beehive in hopes of attracting a swarming colony.

lo grɛmʃ̃. Elymus repens (L.) Gould. Couch grass

The removal of this very common grass from cultivated parcels and gardens was an on-going process in Les Allues. Special effort was made to remove the "noodle-like" root from the lower margins of the fields in spring, before this band of dirt (lo brɔ) was moved to the top of the fields (and thus, if the roots were not removed, transmitting them to the rest of the parcel). The common French term for this species, "le chiendent," was also sometimes used to refer to couch grass, but its dialectical counterpart, lo ʃjɛ̃dã̃, was felt by several people to be more appropriately applied to Achnatherum calamagrostis (L.) Beauv., a common forest grass used to make brushes, etc. (see Section 9.a.).

lu jʃ̃. Vicia faba L. var. minuta (Alef.) Mansf. + V. sativa L. + Pisum sativum L. The cultivated field Pulses

Only those traditionally cultivated "full" field leguminous plants known in the local historical agricultural reports as "légumes" or "légumes secs" ("pulses" or "dry pulses"), and known to be cultivated traditionally in Les Allues (field bean, pea, common vetch and perhaps the lentil and common bean), are glossed collectively by this term. Those leguminous plants introduced during the 19th century, and used exclusively for fodder (commonly called "légumineuses fourragères"/"forage legumes": red clovers, lucerne, saintfoin), are not included in this category in Les Allues.

Pulses were of considerable importance in Les Allues and in a few other communes in the Tarentaise (see Meilleur n.d.). In the canton of Bozel (and St. Martin de Belleville, canton of Moutiers), they were planted in parcels of the fallow break, and formed with winter rye and spring barley the backbone of the traditional three-year crop rotation (see supra). In Les Allues, the field bean (Vicia faba L. var. minuta (Alef.) Mansf.), the pea (Pisum sativum L.) and the common vetch (Vicia sativa L.) were planted every year. They were sown in May before plowing on non-manured parcels and were harvested in September before the planting of winter rye in the same break. The pulses were not only a source of income, since surplus was sold in the Moutiers market, but were also important foods for humans (soups, field bean flour in bread, etc.) and for animals. Their nitrogen-fixing qualities must certainly have contributed to maintaining soil quality in the continuous 3-break cropping system and elderly people claimed to have been impressed by how well the rye did after the pulses. Of all the traditional crops, the pulses suffered most from the introduction of the potato in the mid-18th century in the Tarentaise. It was most logical to try to integrate the potato into the 3-year rotation on the fallow+pulse break. But the potato did not mature until October, much too late for fall rye planting. In many communes, and probably in most hamlets of Les Allues, the tuber eventually forced the suppression of the fallow break and thus the demise of the 3-break system and pulse cultivation (see also Emprin 1933; Ferrand 1976:43).

The presence of pulses in the cultivated fields of the Tarentaise clearly predates the 18th century as suggested by Tochon (1871:59) and Collomb & Raulin (1979:168). Cadoret (1918:628) claims they were introduced by Charlemagne in the 9th or 10th centuries, but a reading of the regional paleoethnobotanical record indicates their presence much earlier during the prehistoric period (see e.g., Renfrew 1973: 104+).

la kwa də rna, la kwa d ano. Equisetum arvense L. and Equisetum ssp. Common horsetail and Horsetail in general

(See Section 8.a.).

lo laepe de tsã. Rumex obtusifolius L. Broad-leaved dock

A common, though mostly inoffensive weed of cultivated fields, broad-leaved dock would be removed only if found in dense patches. It was thought to be closely related to lo laepe (R. alpinus L., note the use of the binomial, one of the few such cases within the wild flora; see Section 10.a.).

le lãtilje (fm. pl.). Lens esculenta Moench. Lentil

While the lentil was known in Les Allues, none of the older cultivators remembered having planted it, and in fact it was of little importance in the Tarentaise. However, two 19th century agricultural reports do refer to its cultivation in several communes of the cantons of Moutiers and Bozel (including the neighboring commune of St. Bon in 1846...ADS, FS311; see also ADS, 27M11) and it is likely that the lentil was occasionally planted in Les Allues as well.

lo lẽ. Linum usitatissumum L. Linen

According to Constantin & Gave (ibid.:59), linen was cultivated in Savoie "principally in the high valleys where hemp could not be grown" (my trans.). No evidence could be found to confirm this statement in the Vanoise Massif. For Verneilh (1807:430), for example, linen was "little cultivated in Savoie" (my trans.) in the early 19th century, much as the 1853 Tarentaise report indicates (ADS, FS310). Contrary to Constantin & Gave, all evidence suggests that hemp was grown close to the highest arable points in the massif and was clearly the dominant, if not the only textile plant available for mountain cultivation (see lo tsnɛvo, Section 5.a.).

Early this century, nevertheless, linen was grown in Les Allues on very small surfaces as an oil-producing plant. Seed was made into an oily gruel for the domesticated animals. However, the oldest Alluetains considered this effort to be experimental and of recent origin. Seed was obtained in Moutiers.

la luzɛrna. Medicago sativa L. Lucerne

Of all the forage legumes, lucerne was by far the most cultivated in the Tarentaise. Early this century, several communes cultivated it in enormous quantities (220 tons at Bourg St. Maurice in 1925...ADS, 27M78). In Les Allues, this was not the case: several families grew it--often mixed with red clover (see lo trijole, infra) --on otherwise unused or diminished full field parcels. Seed was obtained from the market.

la mardzɛl. Lolium temulentum L. Darnel

Distinguished from lo grɛmɔ̃ mostly by its crown of superficial roots (rather than the deeper, noodle-like roots of couch grass), darnel was removed in spring by children from the lower margins (lu brɔ) of cultivated fields before dirt was transported upward.

lo mɛklo. Avena sp. + Hordeum sp. "Cavalin"

Signalled first by Tochon (1871:184), then by Constantin & Gave (1908:12), Cadoret (1918:8) and Guicherd (1930:55), a mixed cereal combination of spring barley and spring oats, called "cavalin" in vernacular French, was traditionally cultivated in the Tarentaise. Little is known of the frequency of its cultivation or the geographical distribution of the practice. Some fairly important quantities of "barley mixed with oats" were grown in the canton of Moutiers in the mid-18th century (1756...ADS, C1426). "Cavalin" was sporadically planted in Les Allues early this century under the name lo mɛklo ("the mix"). In cases when the normal spring forage cereals (oats and, in part, barley) appeared to be failing, several "free" fields might be rapidly plowed and sown to "cavalin." This mix was also used as fodder.

Lo mɛklo is clearly a functionally-based category and not morpho-behaviorally based as it would need to be to meet Berlin et al.'s (1974:154) definition of a folk taxon. However, since it was a category with well defined botanical content toward which economic action was directed, it has been included in this inventory.

lo mẽnitoba. Triticum sp. Spring "manitoba" wheat

Like winter wheat (see lo frɔmɛ̃, supra), little is known of the traditional cultivation of spring wheat in the Tarentaise. None of the older Alluetains knew of spring wheat being cultivated in the commune before the First World War. An ameliorated variety of spring wheat, known as lo mẽnitoba in Les Allues (probably cv. "aurore de manitoba"...Guicherd 1930:52), was introduced by regional agricultural organizations into the mountainous communes of Savoie at approximately this time. This initiative to "improve" mountain agriculture met with little success. Though manitoba wheat flour was considered to be excellent, and the cereal did sometimes reach maturity in Les Allues, usually it did not, even in the lower hamlets, and its cultivation was abandoned.

Traditional populations of spring wheat were apparently grown in the Tarentaise during earlier periods. The 1770 provincial report speaks "of wheat called 'tresal,' which is sown in mid-elevation parishes in spring"...ADS, C866, my trans.). One hundred years later, while the culture of spring wheat was not reported for Les Allues, it was in the neighboring commune of St. Martin de Belleville and in several communes in the canton of Bozel (ADS, 27M11). Seed from traditional forms could not be found.

la ŋɛla. Agrostema githago L. Corn cockle

Corn cockle was a common weed of cereal fields. Children were instructed to follow the harvester and separate the plants from the cereal stalks just after mowing.

lo pae. Pisum sativum L. Pea

The pea, like the field bean (see la fava, supra) and the common vetch (see le pɛzɛte, infra), was traditionally cultivated in Les Allues in full field parcels of the fallow break. Peas were consumed mostly in soup (with pork lard), though they might also be eaten in salads. Peas were sometimes milled and the flour used to make a gruel for the domesticated animals. Surplus was sold in Moutiers. Peas were harvested, as was the common vetch, by mowing with a scythe; field bean plants were pulled up.

Verneilh (ibid.:428) and Constantin & Gave (ibid.:102) distinguished two types of pea cultivated in Savoie: a small full field plant with green peas and a climbing garden variety with white peas. The two forms were known in Les Allues in the early decades of the century, but the antiquity of the garden pea is not known (see Section 5.a.).

lo pavu. Papaver rhoeas L. Common poppy

The bright orange-red corollas of the common poppy were customary sights in Alluetain cereal fields in mid-summer early this century. When large concentrations were noted during harvest, an effort might be made to remove them, but the great numbers of this mostly innocuous, adventitious annual in any given field tended to make most people resigned to the presence of the plant. An infusion of one or two petals in water might be administered as a sleep aid or to calm overly excited children.

le pɛzɛte (fm. pl.). Vicia sativa L. Common vetch

Cultivated much like the other pulses (see la fava and lo pae, supra) on parcels of the fallow break, common vetch was used in Les Allues as animal fodder, prepared as a gruel (from grain or flour). Several, but not all, cultivators gave the grain directly to the bull for energy and to excite him during the mating period. Surplus was sold at Moutiers.

Constantin & Gave described several mixes of vetch grown in Savoie with oats, with barley and oats and even with wheat and rye (1908:44,149). While the first two mixes would appear to be for forage, the third does not. Where and how was this third mix used? Nicolas (1979:69) claims vetch flour was added to bread dough in Savoie, but where? A mix of oats and vetch was grown for green forage on the fallow break in the neighboring commune of St. Martin de Belleville, but this was not found to be the case in Les Allues.

lo pja pɔr. Ranunculus repens L. Creeping buttercup

Considered to be a very bad weed, creeping buttercup commonly invaded the wetter cultivated fields and household gardens (lu kurti) from where it was removed.

la rava. Brassica rapa L. Turnip

Turnips were widely planted in the Tarentaise during the traditional period. Fairly important quantities were harvested in several Tarentaise communes in the mid-18th century (e.g., Landry, canton of Aime, 1756...ADS, C1426). Verneilh (1807:428) described turnips as commonly cultivated in Savoie in the early 19th century. Early this century in the canton of Bozel, and probably long before, turnips were planted as a catch-crop in late July or early August in some of the same fields in which rye had been recently harvested. In Les Allues, families wishing to plant turnips would select one parcel out of what was usually several they possessed in the rye break any given year and simply scatter seed on the ground without plowing. Seed was covered with a rake. In October, these turnips would be pulled by hand. The nice ones were kept for human consumption--eaten in soups or stew--and the rest given to the domesticated animals. Turnips were sometimes planted in gardens (lu kurti).

lo rnɛl. Raphanus raphanistrum L. Wild radish

The pale yellow flowers of the wild radish were a common sight in Alluetain cereal fields early this century. The wild radish was said to be more common in barley and oat fields than in rye fields. While this adventitious annual was clearly seen as a weed, and concentrations might be removed, the plant was mostly tolerated, Alluetains being resigned to the large numbers and generally insipid nature of the species.

la rwela. Convolvulus arvensis L. and Calystegia sepium (L.) R. Br. Field bindweed, Bindweeds in general

Field bindweed is a common weed of the Alluetain vineyard and cultivated fields. Its roots were removed from the lower field margins before the soil was transported to the top. Its presence was felt to be more of a problem in the vineyard (see Section 7.a.) where hoeing did not always result in all the root being removed.

la rwela blãts. Calystegia sepium (L.) R. Br. Hedge bindweed

Hedge bindweed was felt to be more of a problem in the cultivated fields than field bindweed because even small pieces of the easily broken, noodle-like root would regrow, making the plant difficult to eradicate. The plant was removed from the lower field margins in spring.

la rwesa, l wɛrsa. Avena fatua L. Wild oat

This common cereal field grass was seen as closely related to oats (see l avɛna, supra). While considered to be a weed, it was mostly ignored and was not removed from the harvest.

lo savy blã. Sambucus nigra L. Elder

(See Section 9.a.).

la sɛla. Secale cereale L. Winter rye

Winter rye was the principal vegetal product of the traditional Alluetain economy up until the 19th century (see Table 4a). It was one of the major components of the 3-break crop rotation system. Before the introduction of the potato, only spring barley (see l wɛrdzo, infra) rivaled, and occasionally surpassed, winter rye

production. After the arrival of the potato (see la tartifle, infra) sometime in the mid to late 18th century, and even after its production had surpassed that of rye in the early 19th century, winter rye continued to play an important economic role up until the Second World War. From that time on its decline paralleled that of the agro-pastoral economy. Today winter rye is no longer planted in the commune.

Winter rye flour was one of the three ingredients of Alluetain bread in all fourteen hamlets: 3 parts winter rye, 3 parts spring barley and 1/2 part field bean were said to be ideal proportions (in the higher hamlets, it was often said more realistically to be 2:4:1/2). In 1862, bread alone provided over half the daily Alluetain intake in kilocalories and in protein (see Table A2b, Appendix 2). During the summer season--far from the family table--those men and boys employed as "alpage" team members (see Chpt. 10) saw the part of bread in their diets shoot up dramatically:

> "as biscuits, in other words, well cooked, bread became with milk the principal food of the shepherds in the high mountains" (Constantin & Gave 1908:134, my trans.).

Animals were sometimes given winter rye as food or medicine. A gruel from rye flour was administered to sick or newborn animals. Rye straw was used by some families to wrap up the hay bundles given each day to the mule. The plant was also important in other sectors of the economy. Rye straw, the longest of the cereal straws (1+m), furnished the traditional roofing thatch for barns and occasionally for other buildings. It was also used in making beehives, women's hats and while still green, it might be used to tie up the grape vines. While bringing the cheeses down from the mountains in late summer, handfuls of rye straw would be placed all around the cheeses to protect them from damage. Like all extra cereal straw, it was used as litter for the animals.

Les Allues was apparently a regular producer of winter rye surplus which was sold in the market at Moutiers:

> ....in 1789, "the inhabitants (of Les Allues) who ordinarily sell their surplus (rye) at the cereal market of Moutiers" (ADS, C1426, my trans.).
>
> ....in 1822, Les Allues was "the commune which principally provisions the Moutiers cereal market (ADS, 1FS594, my trans.).

Little or no recent work has been done on the identification or the classification of rustic winter varieties of rye in France. Seed of winter rye was simply called "common rye" ("le seigle commun") or "winter rye" ("le seigle d'hiver") by Constantin & Gave (1908:134) and "alpine rye" ("le seigle des Alpes") by Guicherd (1930:54).

Several collections of seed were made in Les Allues and in neighboring communes.

la sɛla trɛzala. Secale cereal L. Spring rye

Generally the role and importance of spring rye (la sɛla trɛzala/"3 month rye") has not been well recognized in the northern French Alps. Guicherd (1930:54), for example, declared that "spring rye is not planted in Savoie." But evidence from Les Allues and neighboring communes suggests that spring rye was an ancient northern alpine cultivar, and that it was used in much the same manner as winter rye up until the decline of the traditional economy. Historical documents make only occasional reference to the cereal, but when they do, there is little doubt of their meaning. A report from the canton of Moutiers in 1789 refers to "tresal" rye (Relation...des communautés de Villargerel, Le Bois, etc....ADS, C1426) and in an 1822 report from the Province of Tarentaise (ADS, 1FS594) it was called "the small rye which is planted in spring." In all probability, it formed with spring barley and oats--and perhaps also in some communes with spring wheat--what was known in historical agricultural reports as "bleds de Pacques" ("Easter cereals"). Constantin & Gave signal its presence in Savoie in 1908 (p. 34) as "March rye...three month rye...it is planted in March and harvested in July" (my trans.), although in Les Allues, because of altitude, it was grown more so between May and August.

While winter rye (see la sɛla, supra) was sown in large amounts every year, spring rye was grown more sporadically, though its role was hardly less important punctually. In years when winter rye suffered some kind of setback and did not mount well in spring, more cultivated fields than usual were planted to spring rye to compensate for the anticipated loss or reduction in the winter rye harvest. Spring rye thus represented a "safety-valve" crop for the high mountain economies in the northern Alps. It was also grown more often by larger families in "free" fields to help satisfy their exceptional cereal needs.

It is impossible today to estimate the amounts of spring rye annually produced in Les Allues during the traditional period. The reports, enquiries, questionnaires, etc., employed in assembling the production statistics in Table 4a do not specifically cite spring rye and it is presumed that amounts harvested were incorporated by reporters into the figures given for winter rye (which was often cited only as rye--"seigle"). Collections of seed, presumed to be traditional, were made at La Savinaz in the Haute Tarentaise.

la tartariz. Rhinanthus alectorolophus (Scop.) Poll. Greater yellow rattle

(See Section 8.a.).

la tartifle. Solanum tuberosum L. Potato (several cultivars)

Introduced into Europe in the 16th century, the potato was signalled for the first time in Savoie in 1737 near Chambéry (Nicolas 1979:73). At first, it remained a garden plant (op. cit.), then, as its value became recognized, it passed to the cultivated fields. Eventually it moved into the rotated field systems, but ordinarily only after causing significant restructuring of original cropping patterns. All evidence indicates that this evolution took place almost everywhere in Savoie, but at different rates, and with variable effects from one commune to another. Nevertheless, during most of its cultivated history in Savoie, the potato was cultivated outside of the rotated field systems, often in the worst parcels available.

In certain parts of the Tarentaise (cantons of Aime and Bourg St. Maurice, for example), the South American tuber seems to have become rapidly an important crop, possibly even much faster than elsewhere in Savoie (see Meilleur n.d.). Production figures of hundreds of quintals in 1756 and 1757 in Bellentre, canton of Aime (ADS, C1426), clearly show that some Tarentaise communes did not await the poor crop period of 1768 to 1772, nor the famine of 1817 to begin large scale production, as had been thought (Cadoret 1929:8; Tochon 1871:62; but see Nicholas ibid.:73). Even though production figures from the 18th and early 19th centuries are incomplete, it appears that the inhabitants of Les Allues were not among the early large scale users in the region. The first citation of the potato in the commune was not until 1793 (AC, Serie D, No. 1:69). By the early decades of the 19th century, the tuber began to be heavily cultivated in Les Allues, and by the 1820s potato production had largely surpassed even cereal production (winter rye + spring barley...see Table 4a). Around 1845, as elsewhere in Europe, Les Allues, the Tarentaise and Savoie were struck by the potato blight (see Tarentaise in 1852 for several local descriptions of the catastrophe...ADS, 5FS311 ...the violent drop in production in 1852 is attributable to this disaster, see Table 4a). In the second half of the 19th century, production rebounds, but it will not reach previous highs.

In the early decades of this century, several identifiable forms of potato were being cultivated in Les Allues, principally in "free" fields outside of the 3-break crop rotation system. The elderly

people were unanimous in citing two cultivars as being the oldest as well as the most commonly planted: l ɛ̃pɛrator and la tartiflə nɛra ("the black potato").

L ɛ̃pɛrator was described as a large elongated potato. Its skin was greyish and its flesh white. Some people called it simply la blɑ̃ts (or la tartiflə blɑ̃ts/"the white potato"). It was a dry potato which split open underground during dry years. It was replaced by the "Bintje" (an ameliorated variety extensively grown in north-eastern France), probably sometime between the two World Wars. It is possible that l ɛ̃pɛrator, whose seed could not be found, was the same or was similar to the large white potato described as widely cultivated in Savoie in the 19th and early 20th centuries (Bonjean 1846; Constantin & Gave 1908:73; Marin 1836:379; Verneilh 1807:426).

La tartiflə nɛra ("the black potato") was said to be a small, mostly round tuber (no bigger than the fist) with a black, or dark violet, skin and white flesh veined with blue or black. It was farinaceous and well liked, especially when consumed with lo sɛ̃re ("serac" cheese, see Chpt. 10). It was considered to be a good food to serve to guests. This potato appeared to be well known in Les Allues and in several surrounding communes. Seed could not be found. La tartiflə nɛra may be equivalent to the "black potato" discussed by Verneilh (1807:427) which had been "introduced into Savoie several years ago" (thus in the early 19th century).

Several other dialect terms for potatoes were noted during fieldwork, but it was not possible either to find seed or even to hazard a guess as to their referents: la tartiflə aləmɔ̃d ("the German potato"), la tartiflə a kristo ("Christ's potato"), la tartiflə rədz ("the red potato"), la robɛ̃, la vjolɛt ("the violet"), la kɛrsəɣɛn, la zitɛrna and la kɛrpədi. Verbal descriptions obtained for these forms were partial and often contradictory. Several recently introduced varieties were planted in Les Allues this century and were known by their French names: "l'Abondance de Metz," "la Beauvais," "l'Apollo," "l'Agenta," "la Bintje." It is possible that dialect terms were given to some of these more recent introductions. I suspect, for example, that "la Bintje" was called la tartiflə aləmɔ̃d. But in speaking with cultivators who have been swamped in the last 50 years with tens of "ameliorated" varieties, it is clear that they could no longer keep track of the cultivars available to them on the market, nor even to those they may have planted at certain periods.

In Les Allues, the potato was principally grown outside of the parcels implicated in the 3-break crop rotation system, in fields which I have called "free." Altogether, these "free" fields constituted the worst arable pieces in the commune (see Collomb 1977:338 for the same phenomenon in the northern Savoyard region of Beaufortin). The best parcels, and in general those associated with the three breaks, were traditionally reserved for bread-making cereals

(see lu bla, supra) and pulses (see lu jɔ̃, supra) planted on the fallow break. Traditionally the "dirtiest," that is most weed infested, of the "free" fields were chosen for the potato, according to elderly Alluetains, to "clean" them, that is reduce the weeds so that a cereal crop might be planted. The potato was also "used" to bring longer term fallowed "free" fields (Fr. = "friche"; dialect = ɛrmo) back into cultivation. These fields, usually of poor quality (rocky or shallow soils, or steep) or at greater distance from the hamlets (and thus less easily manured), were left to transform themselves into hayfields once crop yields began to drop. They were often actually located between annually cropped cultivated fields and hayfields (lu pra, see Chpt. 8). The first year of this transformation was called la rãtra ("la rentrée"/"the return"). If the parcel was still highly weed infested, potatoes might be grown several years in a row.

In the early decades of the century, local seed potatoes were mostly used. During the potato harvest in October, tubers were classed into three categories: le krɔte ("the turds" = the smallest and/or damaged tubers given to domesticated animals, especially pigs), le sɛne ("the seeds" = the small to medium tubers kept as seed potatoes for the following year), and le gruse ("the big ones" = the largest tubers kept as human fare). Once sorted, potatoes were then brought to the cellars for winter storage. According to elderly people, potato yields dropped periodically, even when incorporated into loose rotations with other crops. As with spring barley (see l wɛrdzo, infra) and spring oats (see l avɛna, supra), a renewal of seed potatoes was immediately sought from a nearby hamlet of the same, or preferably, of higher elevation. Several families from Chandon, for example, exchanged with people from Fontaine-le-Puits, a high mountain commune to the northwest above Moutiers. Seeking seed potatoes from higher elevation would appear to be a concrete response to the degradation of the potato grown at lower altitudes, probably as a result of viruses. Potatoes grown at higher elevations are apparently much less susceptible to infection and parasites (see e.g., Mathon 1983:13).

Early this century the scarcity of cash often precluded families from buying seed potatoes, but once wage labor opportunities and money became available, the old cultivars were abandoned. All contemporary cultivators claim the "ameliorated" varieties, while generally providing higher yields at first, degenerate much faster (in 2 or 3 years against 10 or 15 years with traditional seed), and in many cases the loss of the older varieties was regretted.

In Les Allues, and everywhere in the Tarentaise, the potato was a precious human food. It was prepared in several ways: cooked in embers in "robe des champs" ("clothing of the fields," that is with the skin intact), or skinned and boiled and eaten in stew or salad. Potatoes were consumed in many different soups. However, nowhere in the Tarentaise were the tubers limited to human fare. Very small or

damaged potatoes were profitably used to fatten pigs and other domesticated animals. A brief look at the "Etats de Recoltes" for the 1860 decade (ADS, 27M1, 27M2) shows a significant part of production allotted in certain Tarentaise arrondissements to the domesticated animals (38% in the arrondissement of Moutiers in 1862). It is probable that pigs became much more common after the introduction of the potato (as was noted in the Valais, Switzerland by Netting 1981: 166). The tuber was also commonly employed in folk medicine. In Les Allues, a cataplasm of polenta, ash, vinegar and potato was placed on aching teeth. The cooked skin was mixed with red wine and sugar and held against a painful sciatic nerve. Surplus was sold in Moutiers.

le trɛpə'lɛte. Rubus saxatilis L. Stone bramble

Stone bramble is a common component of the rock pile (lo murdze) flora within the cultivated field zone. Its fruit was known to be edible but was probably mostly consumed by children.

lo trijole. Trifolium ssp. Red clover

While it might be difficult to demonstrate today, it is probable that several red clover cultivars derived from market-bought seed were being planted at any given time in the Tarentaise early this century (T. incarnatum L., T. pratense L., etc. and their several cultivated forms). Even though considerable amounts of red clover have sometimes been grown in the Tarentaise (canton of Bourg St. Maurice, for example), this was in fact the least successful of the forage legumes in the ancient province (see Meilleur n.d., contrary to its role in the Beaufortin region to the north...Collomb 1977: 339). In Les Allues early this century, clover was grown on diminished or otherwise unusued fields in an effort to maintain in cultivation arable lands which were increasingly threatened with abandonment. This slowed down the conversion of such parcels into hayfields, or worse, into abandoned brushland (see la brusaje, Chpt. 9).

Constantin & Gave (1908:144) describe an agricultural scenario where ..."in our customary crop rotation in Savoie, wheat ordinarily succeeds clover"...but nowhere in the Tarentaise was such a system found during fieldwork.

lo tsardʒ. Cirsium arvense (L.) Scop. + Cirsium ssp., Carduus ssp., Centaurea ssp. Creeping thistle, Thistles in general, Star-thistles and Knapweeds in general

Creeping thistle was a common weed of the cereal fields. It was often removed before the harvest when the grass stalks were lodged by wind or rain. Children would move carefully into the fields, remove the more rigid thistle stalks (often using gloves) and get out without causing much damage to the crops. Otherwise, as with many of the other weeds, they would be removed just after being mowed. The term lo tsardʒ was applied to a wide range of "thistles" in other folk biotopes (see Section 8.a.).

la tsɛrnavɛl. Galeopsis tetrahit L. Common hemp-nettle

Like many of the less offensive cultivated field weeds, common hemp-nettle was removed only when found in concentrations. Otherwise it was tolerated. The plant was especially noted in fields during the first few years after being left to long term fallow (ɛrmo), or abandoned.

lo tsurava. Brassica napus L. var. napobrassica (L.) Reich. (presumed) Rutabaga

Apparently introduced into Savoie at Chambery in the early 19th century (Verneilh 1807:428), the rutabaga seems to have been planted occasionally in Alluetain cultivated fields this century along with fodder beets (see la blɛta, supra). However, it was not grown by all families, and when grown, then only in very small quantities. Several of the elderly Alluetains viewed it disparagingly as a food for the poor or as a fodder plant that had been grown only during wartime. It was consumed by people mostly in soups.

Identification of this cultivar--which was not seen--was based on verbal descriptions. This plant was clearly not the kohl-rabi as suggested by the dialect term lo tsurava ("le chou-rave"/"the kohl-rabi"; see a similar use of a cognate term in the Haute Maurienne... Meilleur 1985:66).

l wɛrdzo. Hordeum distichum L. (presumed). Two-rowed spring barley

> "At the peasant level...bread was the basic food, made from variable proportions (of cereals)...barley was most important in mountain bread-making (in Savoie)" (Nicolas 1979:69, my trans.).

In Les Allues, in other communes of the canton of Bozel and in several higher communes elsewhere in the Tarentaise and the neighboring Maurienne, spring barley production rivaled winter rye (see la sɛla, supra) production (see Table 4a). In Les Allues, where the two cereals were mixed to make bread, the portion of the spring cereal approached that of the winter cereal and it is possible that in the highest hamlets, spring barley was more important in bread-making, as Nicolas has suggested. According to several older cultivators, it was winter rye which was used more in the lower hamlets of the commune (below 1250 m approx.) and spring barley which predominated in the higher hamlets (those above 1250 m approx.). At the Chef-lieu (1100 m), however, several people estimated that bread dough was made of three portions winter rye flour, three portions spring barley flour and one-half portion field bean (see la fava, supra) flour. At Mussillon (1340 m), the barley portion was said to increase to 2:4: 1/2, and several inhabitants of this hamlet estimated that at least twice as much barley was planted here as rye. While several other explanations are possible, this difference seems to suggest, given the same surface area, that winter rye was less productive than spring barley at higher elevations, the rye being grown nevertheless because of the taste, texture quality and social value that it added to the bread. Like winter rye, spring barley--at least this century in Chandon and Le Villard--was a major component of the 3-break crop rotation system.

Like the other cereals, spring barley had several roles in the Alluetain economy other than as a bread-making cereal. During the two World Wars this century, for example, barley grain was grilled, then ground and brewed into a sort of coffee. It is possible that barley was employed in this way before the spread of coffee into the rural communities of Savoie in the 19th century (Hudry 1979:223; Nicolas 1978:353). Earlier this century a gruel from barley flour was regularly fed to bovines during winter stabling. The quantities of barley used as fodder appeared to be much greater than those of rye or oats.

When an Alluetain cultivator noticed that the yield of his spring barley was dropping, he immediately sought to renew his seed. Each head of household normally maintained a friendly trade relation for this purpose with someone from a neighboring commune, and preferably, with a person living in a hamlet at a higher elevation than his own. The best looking, mature spikes would be removed for exchange. The two spring oat cultivars (see l avɛna, supra) were similarly renewed,

while winter rye seed was not. It is tempting to explain such differences by reference to the reproductive strategies of the three cereals, and therefore to differences in gene flow and genetic variability within populations. Both barley and oats are self-fertilizing while rye is an outcrosser (Moule 1971:29). It seems reasonable to assume, since winter rye was not exchanged, that it maintained its productivity over time and did not need renewing, even while being cultivated over and over in the same groups of fields. This would appear to be a result of the constant genetic exchange within the local cultivar populations that would result from outcrossing. The continual movement of genetic material within the local and regional gene pool would allow the different populations to adjust constantly to a variety of ecological situations as well as respond vigorously to dangerous pathogens. The barley and oat cultivars, by their regular drops in productivity, would seem more susceptible to epiphytotic diseases. This might be explained by their selfing strategies which would tend to result in narrower ranges of genetic variability and potentially, by reduced abilities to combat pathogens. It is instructive to note that in seeking to renew seed, Alluetains always expressed the preference in making the exchange with a hamlet situated at a higher elevation (though it is not clear if this ideal could always be achieved; it certainly could not be for the people living in the highest hamlets). The ability of high mountain settings and low temperatures to reduce viral action in potatoes, for example, has been recognized (Brush et al. 1981:84; Mathon 1983:13). When planting both old and renewed seed, Alluetains often kept them apart in order to evaluate the differences.

Collections of traditional seed of spring barley (two-rowed, according to the cultivators) were made in Les Allues and in Bonneval-sur-Arc in the Haute Maurienne.

l wɛrdzo a katro karo. Hordeum vulgare L. (presumed) 4-rowed winter barley

It is difficult to evaluate the antiquity of this cultivar in the mountainous regions of Savoie; it is very rarely mentioned in agricultural reports. Early this century in Les Allues, 4-rowed barley was subject to limited use as a green fodder. It was sown in fall on very small numbers of "free" fields, but cultivators admitted that it ripened only with difficulty the following year. Winter barley was sporadically sown in the first half of this century elsewhere in the Vanoise Massif: the cantons of Modane in the Haute Maurienne and Bourg St. Maurice in the Tarentaise (DDA SS, 1920, 1942).

NOTES: CHAPTER 4

1. Borrowing, renting and exchange of full field parcels appeared to be quite common in Les Allues early this century. Very little is known about any of these arrangements: which people engaged in them, when or why? In cases of renting, the rentor thus did not benefit exclusively from his agricultural effort; some kind of payment to the owner took place. It also appears that these agreements were infrequently, if ever, registered with a notary. Such practices would today make it difficult to adequately reconstruct, from cadastral records alone, the numbers and surface areas of parcels that any given family put into cultivation any given year. Interviews with many peasant agriculturalists suggest that numbers of parcels and surface area cultivated by a given family changed somewhat every year as availability of parcels changed and the family's needs fluctuated (birth of children, death of family members, increased animal holdings, etc.).

2. Wood ashes, much darker than the snow upon which they were thrown, acted as solar captors. It is also likely that regular injections of ash into the ground also improved soil structure by adding potassium, phosphate, etc., and balancing the contribution of the heavily nitrogenous animal manures.

3. The shared ownership of oxen does not appear to be limited to Les Allues and neighboring communes, or to the Tarentaise. Oxen exchange for plowing purposes was also occurring during the traditional period between communes in the Beaufortin region to the north and neighboring regions of La Combe de la Savoie and Haute Faucigny. In several Beaufortin communes, plowing itself was done by outsiders (ADS, L556).

4. This is hypothetical. Several contributors to Dryland Agriculture (Dregne & Willis 1983) demonstrated the importance of fallow and of weed reduction to water retention in non-irrigated agricultural areas of North America. However, the complex interrelations between soil, slope, precipitation, crops and agricultural techniques, etc. at any given site made generalizations impossible. Only a detailed examination of all these factors as they interrelated would be able to provide insights into the efficiency or "rationality" of such techniques in Les Allues.

5. This association between potatoes and oats would appear to have at least two possible ecological justifications. Oats, of all the cereals cultivated in Les Allues, are the least demanding of fertilizer and the most demanding of soil moisture (Desriot 1952:99). Potatoes were not fertilized in Les Allues until recent years. Potatoes were both periodically irrigated in Les

Allues and commonly planted after long term fallow (see supra). Such strategies presumably resulted in higher soil moisture available to the oat crop, that usually followed the potatoes, than would have been available to it if oats were grown in non-irrigated, continually-cropped fields of the break system.

CHAPTER 5

The Alluetain Gardens and Hemp Plots

Very little is known about the composition, function and management of the peasant gardens (lu kurti) and the related but quite distinct hemp plots (lu tsnavje) in the mountainous regions of Savoie (but see Lizet 1979; Meilleur 1985:26-30). However, in the early 20th century, gardening and hemp cultivation clearly represented two exceedingly important productive activities in the Alluetain economy and in that of its neighbors. In the fall and winter months especially, many garden products were regular fare on the peasant tables. Small fruits and berries, fresh from the gardens, were important and easily gathered fall treats. Condiments used to enhance flavor were also occasionally grown. Several brightly colored ornamentals added a gay ambiance to the difficult summer months. Before the improvement of local medical services, the several medicinal plants grown in the household gardens rendered, with their wild counterparts, a precious service to both men and animals. The use of garden space to experiment with new crops must also be considered as a significant role for this folk biotope in the mountainous regions of Savoie. Folk knowledge was also extended to a considerable number of both positively and negatively perceived wild plants that regularly invaded this disturbed land type. Hemp, usually cultivated in parcels adjacent to or near household gardens, was grown primarily for fiber and oil.

Gardening

Unlike the Haute Maurienne, where at least three separately named and functionally distinct garden biotopes and several variants could be found (Meilleur ibid.:26-30), only one named garden folk biotope was identified in Les Allues (lo kurti), though it may be possible to recognize two variants of this type based on differences in vegetal composition and distance from the habitations. As we saw in Chapter 2, gardens in Les Allues were found in all fourteen hamlets. Generally each household owned one or perhaps two gardens, located either adjacent to or very near the family residence, or at the hamlet margins. In both cases, gardens were laid out in dense groups, each garden or several together enclosed by wooden fences. In 1731, for example, there were 35 gardens at Chandon with an average size of 92 m^2 per garden (ADS, C1984-C1990). By 1913, total garden surface in this hamlet had hardly changed (3437 m^2 vs. 3215 m^2 in 1732), but there were 57 gardens with an average size of 60 m^2 (Cadastre des Allues, 1913, Section O_1). In 1929, total garden space in the commune was estimated at 4.5 ha or approximately .05% of the territorial surface (DDA, SS 1929). All preparatory work, selection of what would be planted, weeding and harvesting, was the responsibility of the Alluetain women.

In the early decades of this century, two variants of lo kurti were recognizable in the Alluetain hamlets. In cases where families possessed two gardens or more, at least one was ordinarily located very close to the house and planted to cultivars which ripened in

stages throughout the summer and/or to cultivars which were sought daily for household needs (common beans, garden peas, salads, medicinal plants, etc.). Bedding plants, which needed constant tending, were also grown here before being transplanted either to larger spaces within the garden or, in the case of some root crops, to cultivated fields (lu tsâ, see Chpt. 4). A second garden type, located on the hamlet margins, would be planted to cultivars which needed less attention, ripened all at once in late summer or fall and which one might say were harvested (summer potatoes, cabbage, carrots, leeks, forage beets, etc.). While the functional distinction between these two variants of lo kurti may be old, such specialization appears to have been accentuated by the heavy depopulation and increased availability of parcels, especially hemp plots, that began to occur in the late 19th century. Earlier this century, many of the more distant gardens had been converted from hemp plots after the fiber plant was no longer cultivated. Before the demographic and economic decline which began in the mid-19th century, unless a household was wealthy enough to own several gardens, or had so many members that it was necessary to acquire exceptional amounts of garden space, it is more likely that most gardens were not thus specialized.

All gardens were fairly uniformly broken into smaller plots called "tables" that were separated by well worn footpaths hardly wider than what was necessary to walk heel to toe. Each table (la tabla) was approximately one meter wide and one (= "small table") to several (= "large table") meters long. There were many of each size

in an ordinary garden; this gave the women considerable leeway to adjust what they grew each year to changing conditions, such as availability of new cultivars, fluctuating family likes and dislikes, modified economic conditions, etc. Vegetables planted every year--including nitrogen-fixing pulses--were rotated among the tables, ensuring that a given cultivar would not be planted two years in a row in the same table. Perennial herbs and shrubs were inserted here and there on margins or in corners. One or several plum trees might be tucked up next to an adjacent building or located at the edges of larger gardens. A pollarded golden or common osier could usually be found somewhere within the garden area.

It has been difficult to evaluate which garden plants have extensive histories of cultivation in Les Allues. Greater availability of money late last century coupled with rapid growth in the diffusion of commercial seed contributed to destabilizing the traditional vegetal configuration of the Alluetain gardens. Population decline beginning in the mid-19th century and the related increased availability of arable parcels of all sorts resulted in a considerable gain in average garden space per person in the 19th and 20th centuries. These opportunities led to less strict cultural guidelines concerning what could "rationally" be planted in the gardens. At the same time, the widespread creation of new cultivars and their dissemination as commercial seed or as transplants, which also began in the second half of the 19th century (Marchenay & Meilleur 1983:4), and the desire by Alluetains to experiment with plants known to be widely grown

elsewhere in France, led to a rapid influx of new cultivars into household gardens. This made the content of gardens not only more variable from household to household, but as Lizet (1979:9) also noted, the family gardens thus became quite early an important "place of cultural confrontation" between the traditional and the introduced. The problem of defining the traditional content of household gardens was further complicated in Les Allues by the elevational differences between the hamlets: garden plants and seed procuring strategies found in lower elevation hamlets were sometimes quite different from those of the higher ones because of constraints imposed by altitude.

Older Alluetains could often provide only very general information about the antiquity of cultivation of many garden plants. In response to my questions, these were usually split into two groups: those plants that were "new" to the commune, that is known to have been introduced and cultivated in their lifetimes; and those that were "old," that is in cultivation before they were born. Most garden perennials, shrubs and bushes were considered to be "old." Rhubarb, the plum varieties, two currants, the medicinal plants (balm, tansy, madonna lily, etc.) and several ornamentals (garden iris, peony, lilac, etc.) "had always been there." A substantial number of vegetables were also considered to be "old," including a group of six which were found in nearly all gardens during the field period and which together constituted the major part of annual garden production: leeks, summer potatoes, cabbage, onions, carrots and common beans.

The decision-making process which included these cultivars and excluded others from the gardens was at least in part based upon an evaluation of return for work, of "rational" use of limited space and of potential for winter conservation. The cultivation, for example, of radishes and spinach, two garden plants well known and available at least during the latter part of the traditional period, was considered by most women to be "fantaisiste" ("whimsical"). Radishes were felt to be too much work for too little return and spinach took up too much garden space for a plant that "reduced to nearly nothing" when cooked. Plants which could be conserved without modern canning techniques were clearly preferred. The importance of Swiss chard as a garden vegetable, for example, appeared to increase when sterilizing and canning techniques became known this century.

Although the economic orientation of the garden was toward cultivated plants, several wild plants were also associated with the garden. While many of these were thought of as "weeds" (le krwe ɛrbe/ "little, stunted or sickly herbaceous plants"), many--including several of the "weeds"--were sometimes useful. A few wild plants, used especially for medicinal or for alimentary purposes, even seemed to have attained something of a "protected" status in household gardens. Table 5a presents the idealized folk phytocoenosis of the Alluetain household garden ("idealized," because of the sometimes great differences in vegetational configurations among gardens...see the Dictionary Entries following, Section 5.a., for detailed histori-

cal, ethnographic and agronomic information concerning these cultivars and the many wild plants associated with the household gardens).

Table 5a: The Folk Phytocoenosis of Lo Kurti
(* = wild)

l aj/Allium sativum L./Garlic
l avãtsir/Salix alba L. subsp. vitellina (L.) Arcangeli + S. viminalis L./Golden osier and Common osier
la barbɔtna/Tanacetum vulgare L./Tansy
la batavja/Lactuca sp./Batavian lettuce
lo bjɔ̃blã/Verbascum thapsus L./Great mullein*
le blɛte/Beta vulgaris L./Fodder beet
la burasʃ/Borago officinalis L./Borage*
l aɲɔ̃/Allium cepa L./Onion (three cultivars)
l ep'natse/Atriplex hortensis L./Orach
d ɛrba/Small, usually weedy phanerogams*
lez ʦʃaelɔt/Allium ascalonicum L./Shallot
la farnɔza/Chenopodium album L./Fat hen*
la fava/Vicia faba L./Broad bean
lo fazu/Phaseolus vulgaris L./Common bean (several cultivars)
la fyrdzɛta a sarpɛ̃/Dryopteris filix-mas (L.) Schott./Male fern
lo glɔŋe/Arctium lappa L./Greater burdock*
lo grɛmɔ̃/Elymus repens (L.) Gould/Couch grass
la kaemomil/Tanacetum parthenium (L.) Schultz Bip./Feverfew
la karɔta rɔdz/Beta vulgaris L./Red beet
la knɛla/Solanum tuberosum L./summer Potato (at least two cultivars)
lo kɔ/Iris germanica L./Garden iris
la kwɛrda/Cucurbita sp./Squash
lo laetsɔ̃/Sonchus ssp./Perennial and Smooth sow-thistle*
la lety/Lactuca sp./Lettuce
lo lila/Syringa vulgaris L./Lilac
lo lis blã/Lilium candidum L./Madonna lily
la margɔ'rita/Leucanthemum vulgare Lam/Ox-eye daisy
la mɛliza/Melissa officinalis L./Balm
la mɛ̃ta/Mentha ssp./Mint (several cultivars)
l ɔrtʃe/Urtica dioica L./Nettle*
lo pae/Pisum sativum L./Garden pea
la pãse/Viola tricolor L./Wild pansy*
la pas'najɔ/Daucus carota L./Carrot
lo pɛtarɛ̃/Ribes rubrum L./Red currant
la piwan/Paeonia officinalis L./Peony
lo pja pɔr/Ranunculus repens L./Creeping buttercup*
lo plãtɛ̃/Plantago major L./Greater plantain*
la pɔma d ɔr/Lilium martagon L./Martagon lily

Table 5a: Continued

lo pɔr/Allium porrum L./Leek
la prɔma, lo prɔmje/Prunus domestica L./Plum, Plum tree
la rava/Brassica rapa L./Turnip
la rybarba/Rheum rhaponticum L./Rhubarb
la salada (di kurti)/Cichorium ssp. + Lactuca ssp./Garden chicory and Lettuce (several cultivars each)
la slǝɲɔ/Chelidonium majus L./Greater celandine*
la sodz/Salvia officinalis L./Sage
la tɔmɛta/Malva neglecta Wallr./Dwarf mallow*
lo tsu/Brassica oleracea L./Cabbage (two cultivars)
lo tsurava/B. napus L. var. napobrassica (L.) Rchb./Rutabaga

Annual or biannual garden vegetables were generally procured in three ways: plants were left to go to seed in fall and this seed was kept from year to year; commercial seed was bought in the Moutiers market or from travelling merchants; transplants were bought from specialists in several of the lower communes, notably in the commune of Bozel. Which of these alternatives was selected depended not only upon the historical period, but upon such factors as what was to be planted, which seed could be produced at varying altitudes, success in producing local seed any given year, available time, family wealth and thus ability to buy transplants, etc. During the traditional period the average Alluetain family tried to avoid spending money whenever possible; if seed could be locally produced, this was preferred. But when money became increasingly available this century, the time-consuming tasks of producing bedding plants from local seed, of thinning and watering them, then meticulously transplanting them, were more and more abandoned to the purchase of ready-to-transplant bedding plants from local "lowland" specialists. When perennial plants died, cuttings or young shoots were provided by friends or relatives. Plum

trees were propagated vegetatively by removing sprouting suckers from the base of adult trees and planting them.

Household gardens were generally recognized as being the second most heavily fertilized of the cultivated land types after the hemp plots. Like the cultivated fields, manure from the stables would be brought to the gardens in winter, usually with a hand sled (la ldzɛtə a bera). Residue from the squares and roads (animal feces mixed with mud and hay, etc. = la burba) of each hamlet would also be used by a different family in turn each year. Well cured human fecal material was used by some families.[1] Like cultivated fields, gardens were prepared for planting in April or early May when the ground was well drained. The various tables were dug up completely with the pick (lo dzgo) and a square-tipped shovel (la pɛla), weeded and manured.

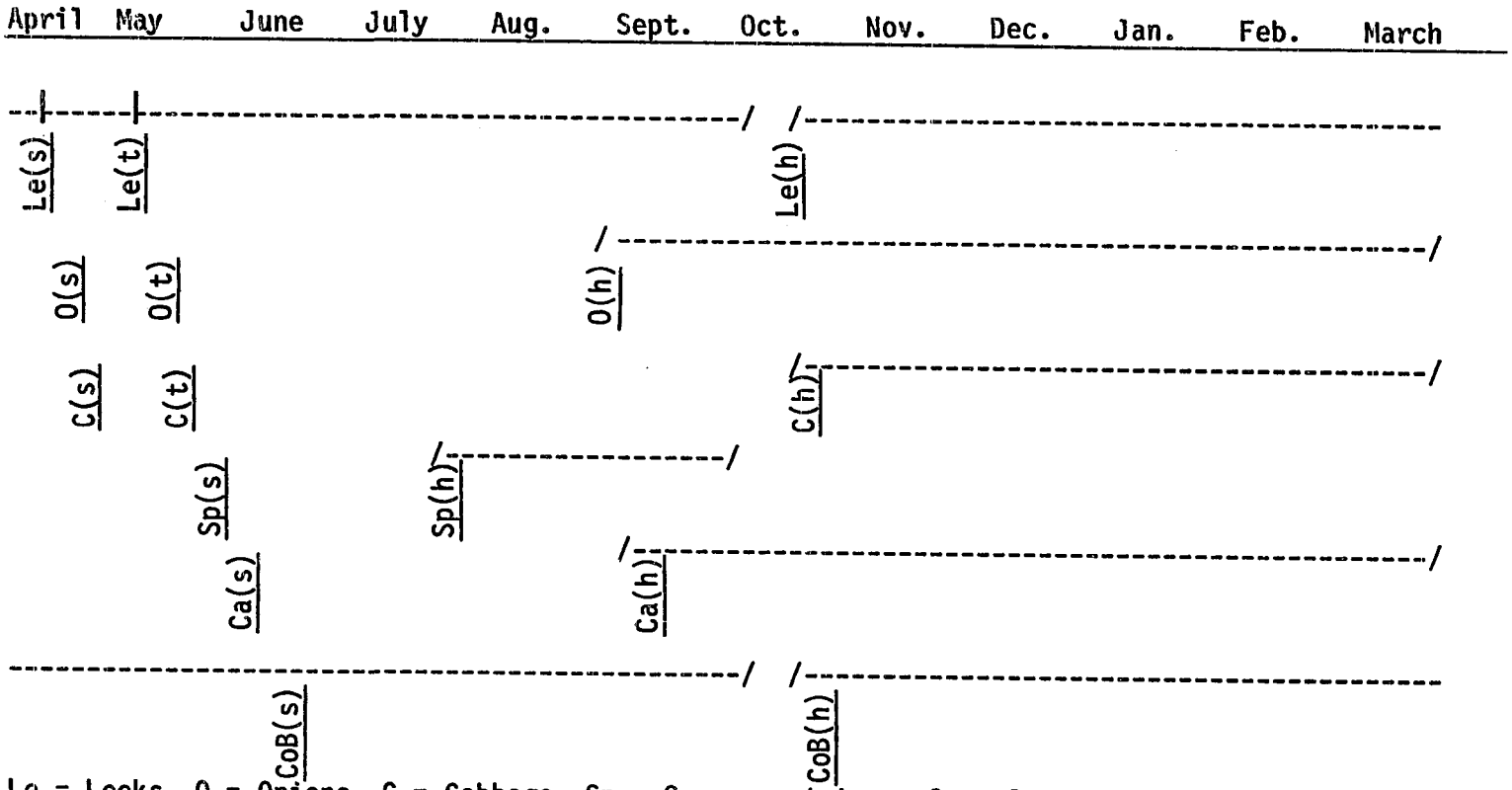
Planting the tables took place in several waves: vegetables to be transplanted, such as leeks, cabbage and onions, were seeded first in tightly packed rows, usually sometime in April. The summer potatoes were then planted, and in mid-May, the leeks, onions and cabbages were transplanted into larger tables. Those cultivars that were susceptible to late spring frosts, like carrots and common beans, were planted from seed in late May or early June. Depending on the length and severity of the winter, and the success of conserving garden products either outdoors (leeks left in the ground under the snow) or indoors (cabbage, leeks, carrots in cellars; onions in granaries), vegetable produce could possibly be consumed in Les Allues all year. However, in most households, there appeared to be a lean

period between late winter and mid-summer. The approximate planting and harvesting times for the major vegetable groups, as well as the periods in which these products were normally eaten, are reproduced schematically in Table 5b. Dates for planting and for transplanting varied considerably, however, between lower and higher hamlets.

Plants whose maturation times were spread out over several weeks or longer throughout the summer were brought to the house and eaten as they ripened (lettuce, winter salad, leeks, etc.). Garden products which were to be stored through the winter and/or which might spoil outdoors after ripening, were harvested in fall and brought in within one or two days: cabbage, carrots, onions, forage beets, currants, plums, etc. Other products, especially the medicinal plants like tansy, common mint, sage, etc., were sought only when stocks were depleted or when there was an immediate need. The showy ornamental flowers might be cut and brought to the house, but more commonly they were appreciated in situ. Harvesting was of the simplest nature: most vegetables and/or greens like onions, cabbage, leeks, carrots, salads, etc., were pulled up by hand; potatoes were dug out with the pick; currants and plums were gathered by hand; plant parts from the medicinals were removed by hand or with the aid of a knife.

Considerable effort was expended to conserve many garden products for winter use or consumption. Onions were plaited together with hemp string, dried on balconies, then hung in granaries. Leeks were removed from gardens with the surrounding clod intact and placed in corners of the cellars. In the lower hamlets, leeks were sometimes

Table 5b: Approximate Dates of Planting, Transplanting and Harvesting Six Major Garden Vegetables, and the Periods These Products were Commonly Consumed (/---/)



Le = Leeks, O = Onions, C = Cabbage, Sp = Summer potatoes, Ca = Carrots, CoB = Common beans, (s) = sown, (t) = transplanted, (h) = harvested

left all winter in the ground, under makeshift wooden frames or uncovered, to be dug from the snow when supplies ran low. After drying, entire cabbages were placed in wooden bins in the cellars with their roots upward; sometimes they were covered with straw. Carrots might be covered with sawdust or sand, or wrapped in newspaper.[2] Madonna lily petals and several other medicinals were macerated in locally made alcohol (la gəta/"l'eau-de-vie," see Chpt. 7) and were thus available as needed all year round. Others (mint, sage, tansy, etc.), were dried and kept handy. Currants, plums and rhubarb, because of the lack of sugar and ignorance of canning techniques, were generally eaten or prepared fresh.

It is difficult to evaluate quantitatively the contribution of the traditional household gardens to the Alluetain subsistence base. In certain cases, several economic roles were played at different times by both cultivated and wild garden plants (e.g., nutritionally, medicinally, "technologically," psychologically, etc.). While most of the medicinals, ornamentals and many of the alimentary plants must be considered as punctually and qualitatively important, the food contribution of the garden vegetables also appears to have been consequential on a sustained basis over much of the year. A review of daily food consumption estimates in the "Ten-year statistic" of 1862 (ADS, 27M11) permits the conclusion that the family garden produced a significant part of food bulk consumed in Les Allues (see Appendix 2, Table A2a). 1.2 liters of soup were judged to have been consumed every day by each adult person. Fieldwork confirmed that soup was

standard fare in all seasons, often consumed several times a day and in many forms (see also Hudry 1979:223-224). While the fall potato, field bean and pea of the cultivated fields (lu tsã, see Chpt. 4) were basic ingredients of Alluetain soups, such garden produce as leeks, carrots, onions, summer potatoes and especially cabbage were also common additions. The same "Ten-year statistic" estimates daily consumption of "légumes" ("vegetables") at 250 grams (versus 60 grams of meat and 700 grams of bread). Which plants constituted these "légumes" are not known. But since the field beans and peas--often called "légumes" or "légumes secs" in earlier reports--were much more commonly consumed in soups than in separate dishes, it is probable that this rubric refers to the garden "vegetables," as it does in contemporary French, that were boiled and consumed at noon-day meals in Les Allues. With salt pork or salted kid added to cabbage, leeks, carrots, onions and potatoes, etc., this mix is usually referred to in the literature as "la potée" (la pɔta/"stew").

Quantitatively, the consumption of garden produce appears to have been significant over much of the year in Les Allues, although absolute amounts could not be calculated. Apart from the folk medicinal and ornamental plants, the family garden was also especially important qualitatively for the diversity and novelty it could bring to a potentially monotonous alimentary regime dominated by bread, milk products and soup. The consumption over several weeks of the year of such garden fare as berries, small fruit and secondary produce like lettuce, winter salad or orach leaves, or all year of locally produced

condiments like thyme, garlic or shallot, was greatly appreciated by Alluetain families. The ability to offer plum brandy to guests was considered by many to be a mark of social competence.

Growing hemp

During the traditional period, and up to about the 1930s, hemp (lo tsnɛvo/Cannabis sativa L.) was grown by most Alluetain families for its fiber and for many other uses (see the following Section 5.a. for a more detailed description of hemp use in Les Allues). Hemp was cultivated in non-rotated, annually cropped parcels called lu tsnavje (sing., lo tsnavjɛ). Hemp plots, which constituted a distinct folk biotope, were usually located on hamlet margins between the constructed part of the hamlets and the cultivated fields, often adjacent to household gardens. After the abandonment of hemp cultivation many hemp plots were converted into gardens.

According to elderly Alluetains, hemp plots were the most heavily fertilized of the cultivated land types. Several people claimed to have seen their parents employ human, as well as the much more common animal manure. The larger parcels were plowed much as the cultivated fields, while the smaller ones were hoed by hand, like the gardens. Seed was sown by broadcast at Chandon (1250 m) and at Mussillon (1340 m) during the first week in June (several people mentioned "le St. Claude"--the 6th of June). The male plants (called locally lo tsnɛvo fɛmɛla/"female hemp") of this dioecious species were harvested first, at Mussillon in late August. The seed bearing female plants (lo tsnɛvo malo/"male hemp") were harvested one month to six weeks later

(several people claimed "le St. Michel"--the 29th of September). The distinction drawn between male and female, which reversed the actual sexes of the plants, not only reflected differences in maturation time but also several important functional differences as well. Hemp plants were pulled up by hand. Tochon (1871:199) claims that turnips were grown after the fall hemp harvest in Savoie as a catch-crop, but no evidence for this practice could be found in Les Allues, where turnips were sown as a catch-crop after the winter rye harvest (see Chpt. 4).

Dictionary Entries

Section 5.a. Domesticated and Wild Plants of the Alluetain Household Gardens and Hemp Plots

This section will describe in detail each of the domesticated and wild plants believed to have been present in Alluetain gardens and hemp plots during the traditional period. The uncontrolled movement, especially this century, of commercially produced cultivars into the gardens has made this inventory particularly difficult to establish. There was little accord, for example, among elderly Alluetains concerning the antiquity of cultivation of many condiments, ornamentals and garden vegetables. Such condiments as chervil, parsley, tarragon, sorrel and chives were said by some people to have been planted in small bands of family gardens prior to World War II; others systematically claimed such products were "new" and not planted until recent years. Such ornamentals as roses, cultivated chrysanthemums, violets, garden marigold, cultivated fritillary, bleeding heart and sunflower were said by some people to have been present in gardens early this century; others claimed only lilac, garden iris, peony and several wild transplanted ornamentals such as martagon lily, ox-eye daisy and male fern were truly "old." Some people claimed such vegetables as spinach, Swiss chard, radishes, Brussel sprouts and zucchini, etc., were cultivated in their youth; others rejected these assertions. Only the group of perennial medicinal plants appears to have been little affected by

introductions this century. The contemporary condiment, ornamental and vegetable inventories have clearly been extensively modified from what they were only fifty years ago. Today the variety of such plants in household gardens and in window planters is limited only by market availability and by what can be grown at high altitude. The list presented here is restricted to those wild and domesticated plants believed to have been common in Alluetain gardens and hemp plots during the traditional period. Because of disagreement among elderly informants, the set of domesticates must be considered as preliminary.

l aj. Allium sativum L. Garlic

Several people claimed garlic was "old" and regularly cultivated in Alluetain gardens. It was said to have been planted from bulbs in fall into small tables. Others claimed it was inexpensive and available in the Moutiers market early this century, and thus infrequently planted. Garlic was little used in cooking, though it was apparently added to the various types of homemade sausages. It appeared to be much more often employed as a medicine, especially in treatments against worms. A clove of garlic would either be tied around the neck of an infected child or the child would be made to drink milk in which garlic had been soaked. For animals with worms, garlic macerated white wine was sometimes administered. The last preparation was also said to be drunk by people with high blood pressure.

l avãtsir, luz avã. Salix alba L. subsp. vitellina (L.) Arc. + S. viminalis L. Golden osier and Common osier

Golden osier was an extremely important "industrial" plant found early this century in or near almost all household gardens, in or near vineyard parcels or anywhere that its flexible branches were commonly employed to wrap up or tie things together. Common osier was also found growing in Les Allues, though only in gardens and less so than the golden osier. Both species were usually found in the

form of small, single trunk pollarded trees, around 1.5 m to 2 m in height, whose many annual branches were removed each fall. These highly flexible branches were put to many uses: to hold together the sycamore and ash (see Section 9.a.) bundles brought to the barns in late summer for winter sheep and goat fodder; to tie up twigs; to secure hemp stalks for soaking or transport; to tie up grape vines; to hold rye straw in tight bundles in beehive construction; etc. The finer common osier branches were used in winter basket-making by men. If common osier was not available, golden osier would be used to make the several baskets (lu kavɛ̃) common in the Alluetain domestic economy. The entire plants and especially the branches of both species were usually called luz avã, though sometimes the French term "l'osier" (l ɔzje) was also employed. The term l avãtsir was considered to be the "proper" name for the tree itself, but was in fact less often used.

la barbɔtna. Tanacetum vulgare L. Tansy

A cluster of tansy could be found in most gardens early this century. The highly aromatic flowers were infused and administered to children and animals with intestinal worms (lu vɛr).

la batavja. Lactuca sp. Batavian lettuce

An apparent Lactuca sativa L. cultivar, known locally as la batavja, was grown early this century in Les Allues (see la lety and la salada, infra). Like lettuce, seed was bought in Moutiers and planted in tight rows. Transplanting occurred in May. This cultivar was recognized to be more slow-growing and more heat resistant than lettuce. It was thus seeded and transplanted later than lettuce and was said to be consumed later in the year, after lettuce was finished, at least until September.

la bavə'rɛla. Prunus domestica L. ("baver" = "to drule"?) Plum

This large, round, deep blue plum was the last fruit of the year to be gathered in Les Allues. Much of the fruit from this variety did not fall from the tree in early autumn, so it was commonly gathered after the first or even second autumn freeze finally caused some

of the fruit to fall to the ground. The large size and high juice content of these tart plums was appreciated in brandy-making (see la prɔma, infra). Fruit that remained on the tree into winter began to dry. After having been frozen several times in November, for example, those fruit that then fell the ground were half dry and were considered delicious raw. Like "la vendangeuse" (see la vɛ̂dɛ̃zir, infra), these half-dry plumes were brought indoors, dried further and eaten during the winter months. The tree grew to over 8 meters.

lo bjɔ̃blɑ̃. Verbascum thapsus L. Great mullein

Common in barren land, road and path margins and around gardens in the lower commune, as well as around vineyard parcels, great mullein was not just a weed but a medicinal and "industrial" plant. An infusion of the flowers and leaves was drunk to combat colds and flu. The rigid flower stalks were used as wicks for lamps.

la blɛta, le blɛte. Beta vulgaris L. Fodder beet

Apparently introduced into Savoie in the late 18th or early 19th century, fodder beets were primarily garden plants in Les Allues, although some families also planted them in cultivated field parcels earlier this century (see Section 4.a.). In general, transplants were bought in May and placed directly in the prepared ground. The mature tubers were harvested in fall and preserved in cellars. They were used both to fatten pigs in late fall and early winter before their slaughter around Christmas, and as spring cow fodder. Small amounts were added to the pork offal sausage (lo pormɔpe, see lo tsu, infra). Three varieties were recognized: la blɛta blɑts ("the white fodder beet), la blɛta dzɔna ("the yellow"), and la blɛta rɔdz ("the red"). The "yellow" was preferred. The terms la bɛtɔrava and la karɔta, applied to other cultivated forms of B. vulgaris L. (see la karɔta rɔdz, infra), were also sometimes used as synonyms for the fodder beet, especially by inhabitants of Chandon.

la buraʃ, la burats. Borago officinalis L. Borage

Borage is a wild annual whose place in Alluetain gardens is perhaps best described as "protected." Several people even described it as a cultivated plant. Self-seeded plants of this highly regarded medicinal were not removed from gardens (except if in too great numbers). An infusion of borage flowers was commonly drunk against colds and flu; it was said to be especially good for coughs. Vapor inhalations were also administered to both humans and to animals, especially to mules when afflicted with head and neck infections.

la dɛmwaizɛla. Prunus domestica L. "la demoiselle" Plum

This small plum variety (no higher than 3 or 4 meters) with somewhat elongated, yellowish and rose colored fruit, was grown in many Alluetain gardens. It was considered to be a very old, sweet fruited, early ripening cultivar especially suited for immediate fresh consumption from mid-July to mid-August, depending on weather and hamlet elevation. The flesh was said to separate easily from the pit, and this, along with its apparent high sugar content, made it a likely candidate to be made into preserves. While the antiquity of making preserves in Les Allues and the Tarentaise is not known, and clearly rubber sealed containers, sterilization and freezing techniques are new, at least one seemingly old technique was practiced early this century: "demoiselle" plums, and other fruit with high sugar content, were boiled with small amounts of sugar, reduced to a fairly solid mass, put into jars and completely covered with locally distilled alcohol for winter consumption. The ability to buy sugar appears to have been a limiting factor in the production of this and most other fruit preserves.

l ɔɲ̃. Allium cepa L. Onion

Two spherical, tennis ball-sized varieties and a small flattened variety of onion were recognized in Les Allues as "old" cultivars: l ɔɲ̃ blɑ̃ (a spherical "white onion"), la ɔɲ̃ dzɔno (a spherical "yellow onion") and le tɛθɛte ("the small heads"?/a smaller onion, flattened at both ends). There was general agreement that the "yellow onion" was most planted. Onions were major garden plants usually grown in one or more large tables. The spherical onions were grown either from locally produced seed, from seed bought at Moutiers --both planted in April and transplanted in May--or from transplants

bought in May at Moutiers or Bozel. Le tɛ̃ɛte were grown only from transplants. Onions were harvested in late August, dried in tresses on balconies and stored in granaries or barns. They were eaten from August through March or April in soups and "potee." The history of onion cultivation in Savoie and the Tarentaise is now known, though onions are undoubtedly one of the oldest European cultivar groups (DeCandolle 1883:52; Hedrich 1972+).

l ep'natse. Atriplex hortensis L. Orach

Orach was grown in at least a few gardens early this century. It commonly grew to over 1 m and the large triangular leaves were removed, boiled and eaten like spinach. The plant(s) were grown in a corner of one of the tables. Botanical guides consider this species an annual. However, several older Alluetains described it as growing every year, probably by spontaneously reseeding itself (?). Orach lost favor after the introduction of spinach (Spinacia oleracea L.) this century, but it was still found growing in a garden at La Saulce in the commune of Brides-les-Bains.

d ɛrba. Herbeaceous plants in general

(See Section 7.a.).

l ʃaelat. Allium ascalonicum L. Shallot

Early this century, shallots were either planted from seed in April and transplanted into small tables in May, or more commonly planted from bulbs which were kept from year to year. Shallots were used much like onions (see l ap̃, supra).

la farnɔza, l ɛrba farnɔza, lo tsu gra. Chenopodium album L. + Amaranthus blitoides Wats. Fat hen and Prostrate amaranth

Fat hen was a common weed of gardens, cultivated fields, vineyards and other disturbed sites. It was also noted around manure heaps, from where it was thought to spread to the cultivated areas. The term la farnɔza, which probably originally applied only to Chenopodium album L., was extended to prostrate amaranth, a recently arrived American weed of the vineyard parcels (see Section 7.a.).

la fava (di kurti). Vicia faba L. (probably var. faba L.). Broad bean

A large, flat broad bean was occasionally planted to small garden surfaces early this century. It was recognized to be related to the much smaller and rounder field bean (la fava/V. faba L. var minuta (Alef.) Mansf.) of the cultivated fields (see Section 4.a.). Both faba beans were called la fava, though if it became necessary to distinguish between the two, the broad bean might be called la fava di kurti ("the garden bean") or la grusa fava ("the big bean"). The broad bean was planted in May and consumed in soups much like the field bean. Seed was kept from year to year.

lo fazu. Phaseolus vulgaris L. Common bean

Common beans were introduced into Europe from the New World in the 16th century (Fournier 1977), but when they made their way into Savoie is not known. Early this century several varieties were grown in Alluetain gardens, as well as between rows of grape vines in vineyard parcels (see Chpt. 7). Common beans were split into two groups based on growth form: lo fazu nɛ̂ ("the dwarf bean") and lo fazu rama ("the climbing bean" or "a rame"). These were both further subdivided into cultivars:

lo fazu
- lo fazu nɛ̂ ("the dwarf bean")
  - lu bura ("the butters": a small, black bean)
  - lu katʔdɔr (yellow beans of medium size)
  - lu koko (small, white, round beans)

lo fazu rama ("the climbing bean," also called la fazula)
lo swasɔ̃ (a large, white climbing bean; this term was often used synonymously with lo fazu rama or la fazula)
-------- (a large, reddish-brown bean, veined with black was also seen in Les Allues, it was called either lo fazu rama, la fazula, or lo swasɔ̃)

The climbing varieties were mostly grown in hamlets situated below 1300 m; they were said to ripen only with difficulty above this altitude. Dwarf beans were much more common in hamlet gardens above 1300 m. Dwarf beans were also occasionally planted in cultivated field parcels in the lower hamlets (see Section 4.a.). The ripened grains of the common beans were generally boiled and consumed in soups or in salads. String bean varieties, in which both the grain and the pod are eaten green, are apparently of very recent introduction in Les Allues.

la fyrdzɛta a sarpɛ̃. Dryopteris filix-mas (L.) Schott. Male fern

During the fieldwork period, male fern was seen in or near several gardens where it was said to have been transplanted from nearby forest for "decorative" purposes. This appeared to have been a long-standing practice and it is possible that other of the large, wild ferns (e.g., Polystichum lonchitis (L.) Roth) might also have thus been transplanted.

lo glaŋe. Arctium lappa L. Greater burdock

A common multi-purpose medicinal plant of the habitation zone, greater burdock could usually be found around gardens, along paths leading to and from gardens, etc. The root was boiled and the decoction drunk as a depurative (e.g., when one was afflicted by skin eruptions such as boils). The leaves, boiled and applied directly to the skin, were said to be useful in calming painful rheumatic joints. While the hooked bracted heads of greater burdock supplied much amusement to children who playfully threw them at each other, adults were less amused when large numbers of these heads became entangled in animal hair, notably sheep's wool.

lo grɛmɔ̃. Elymus repens (L.) Gould. Couch grass

(See Section 4.a.).

la kaemomil. Tanacetum parthenium (L.) Schultz Bip. Feverfew

Feverfew, or wild camomille, was found in or in close proximity to most Alluetain gardens. The plant was felt to possess many curative properties. In infusion it was used as an eyewash, and as a tisane for indigestion in both humans and animals. Flowers might also be heated in oil and placed on the chest as a poultice for colds, flu and other chest ailments.

la karɔta rɔdz. Beta vulgaris L. Red beet

The red beet, while considered by many elderly Alluetains to be "old" locally, was only sporadically planted in gardens, in most cases probably because of a personal preference. Those people who did grow red beets usually did so from transplants in May. Beets were brought into the cellars in October for winter consumption in salads.

la knɛla. Solanum tuberosum L. Summer potato

At least one and possibly several varieties of summer potato were grown in the first decades of this century in Les Allues. The varietal name most commonly mentioned, la knɛla, is clearly derived from the French variety, "la quenelle." A second varietal name, la karãtɛn ("la quarantaine"/"the forty day"), was also mentioned, but no further information could be had about this possible summer potato cultivar.

Summer potatoes were planted in fairly small amounts in mid to late May in Alluetain gardens. They were harvested in mid-July. Summer potatoes appeared to be planted in greater quantities in years when cultivated field fall potatoes were perceived to be running low in spring (see Section 4.a.). They would usually be eaten for one or two months only, helping to bridge lean periods until the harvest of

fall potatoes in October. It is not clear for how long summer potatoes have been cultivated in Les Allues, but several varieties were apparently cited in local agricultural treatises dating from the mid-19th century (Marin 1836; Bonjean 1846; Tochon 1871).

lo kɔ. Iris germanica L. Garden iris

Garden iris, like lilac, was considered to be one of the oldest decorative plants to be found in or around Alluetain gardens. While the beauty of the bluish-violet flowers was greatly appreciated, most women actually did not tolerate it within the garden plot; the plant was said to spread rapidly and become a nuisance. It was much more commonly encountered on garden margins, along paths and in other non-cultivated areas within the hamlets.

la kwɛrda. Cucurbita sp. Squash

Several forms of edible squash appeared to have been grown earlier this century in some lower commune gardens, as well as on edges of vineyard parcels (see Section 7.a.). A few seeds might also be thrown at the bases of manure heaps around the hamlets. No plants could be found during the field period, but from descriptions, it is likely they were Cucurbita cultivars. The antiquity of squash cultivation is not clear; some people claimed they saved seed from year to year; others bought seed at Moutiers. In any event, squash appeared to have been grown only by a few families. It was prepared in soups, purées or was sautéed.

lo laetsə̃. Sonchus arvensis L. + S. oleracea L. + Taraxacum officinale Web. Perennial sow-thistle, Smooth sow-thistle and Dandelion

The two sow-thistles were common weeds found around buildings and in and around gardens in the habitation zone. The dandelion was much more common in hayfields (see Section 8.a.).. Sow-thistles were sought in summer for rabbit and guinea pig food.

la lety. Lactuca sp. Lettuce

An apparent early maturing, fast growing cultivar of Lactuca sativa L. was grown in many Alluetain gardens early this century. Lettuce seed, bought at Moutiers, was sown in tight rows in April if the weather permitted. Ten cm shoots were transplanted to small tables in May. Since lettuce was said to be intolerant of the Alluetain summer heat, as soon as the plants achieved reasonable size, usually in June, they were consumed in salad (see la salada, infra).

lo lila. Syringa vulgaris L. Lilac

The deep mauve flowered lilac appears to be an extremely old component of Alluetain and northern alpine household gardens. The lighter mauve and white flowered forms, found today here and there in Les Allues, are evidently much more recent additions. Many gardens can still be found with lilacs planted in corners or along margins.

lo lis blɑ̃. Lilium candidum L. Madonna lily

Two or three flowering stems of madonna lily could be found in most gardens early this century. It is still widely cultivated for its beauty and renowned curative powers. The pure white petals were macerated in locally distilled alcohol then placed as needed on cuts or bruises. It was said to calm the pain and help drive out the puss, especially that of deep cuts.

la margɔ'rita. Leucanthemum vulgare Lam. Ox-eye daisy

The common ox-eye daisy was often transplanted from hayfields into household gardens (and into the cemetary) where it grew into dense clusters. Older women wisely cautioned that it was best planted in corners of gardens where it could more easily be prevented from spreading.

la mɛ̃liza. Melissa officinalis L. Balm

A perennial herb grown in many gardens, balm was most often administered in folk veterinary treatments. An infusion was given to cows during and after calving, especially it was said, when the afterbirth would not come out. Balm tisane was administered to animals with colic. It was also drunk by humans to aid digestion.

la mɛ̃ta. Mentha ssp. Mint

Spearmint (M. spicata group) was most often noted in Alluetain gardens, but it seems likely that a comprehensive survey of Alluetain gardens would find several other mint species and cultivars were also being grown. Mint was considerably more widespread in gardens of the lower hamlets (below 1300 m) than in the higher ones, probably because of its inability to overwinter at higher elevations. It was most often consumed in the form of tisanes to aid digestion but was also drunk as a simple refreshing tea. Several people had macerated mint leaves in alcohol which was consumed as an after dinner digestive.

l ɔrtʃe. Urtica dioica L. Nettle

Common in the habitation zone around buildings and on garden edges, and in the pasturable domain around buildings (see Section 10.a.), nettles were consumed in early spring in soups. Later, they were dried and with silver fir bark (la pəlora də varno/Abies alba Mill., see Section 9.a.), were infused to make an invigorating drink administered to weakened animals. The term was extended to annual nettle (U. urens L.) which, however, was much less often used.

lo pae, lo ptʃi pae. Pisum sativum L. Garden pea

Small amounts of garden space were allotted to at least one cultivar of climbing pea this century. Seed was usually bought at Moutiers and planted in May. The climbing pea, of which the seed remained white when ripe, was very different from the dwarf cultivated field pea whose ripe seed turned green (see lo pae, Section

4.a.). While most Alluetains considered the garden pea to be of recent introduction, Verneilh (1807) noted that both a white and green variety of pea were grown in Savoie in the early 19th century, but this astute observer did not specify in which land type each was cultivated.

la pãse. Viola tricolor L. Wild pansy

The very common wild pansy of household gardens was widely admired for its beauty. It was usually removed as a weed only when it directly interferred with cultivated plants. Informants were in disagreement about its use as a medicinal: several people said it was infused like the alpine pansy (la vjə'lɛta/Viola calcarata L., see Section 10.a.) and the preparation drunk against colds and flu; others said it was uniquely ornamental. The term la pãse was often extended to the recently acquired cultivated ornamental pansies.

la pas'najə. Daucus carota L. Carrot

The orange carrot, like the cabbages, the leek and the onions, was considered to be an "old" garden plant in Les Allues, though it was seemingly much less planted than these other products. It was, nevertheless, common fall and winter fare in "potée" and soups. Carrots were planted from seed obtained in Moutiers in mid to late May, after most other "vegetables" were already in the ground. The first carrots could be eaten in late August or early September. Several techniques were used to conserve them in cellars through the winter months: covering with sawdust or sand, wrapping with newspaper, etc.

It is believed that the orange carrot was domesticated in the Netherlands (Zeven & Zhukovsky 1975:142), but when it became to be cultivated in the mountainous regions of Savoie is not known. It was cited as being cultivated in Tarentaise in 1853 (ADS, 1FS310). Tochon (1871) attributes its presence in Savoie to the Romans, but this does not appear likely.

lo pɛtarɛ̃, lo tɛmarɛ̃, lo tramarɛ̃, la krwaezola rɔdz. Ribes rubrum L. + Ribes ssp. Red currant and Gooseberry

Several currant and gooseberry species (R. rubrum L., R. nigrum L., R. uva-crispa L.) and cultivars were found being grown in Alluetain gardens during fieldwork. Only the red currant (R. rubrum L.) was considered by most people to have been an "old" garden plant; the others were said to have been recently procured from the market. On several occasions elderly people claimed the red currant had been transplanted into gardens from nature, but none had first-hand experience doing so. Currants or gooseberries, whether cultivated or wild, were eaten fresh or in fruit "salads" with milk.

Currant and gooseberry nomenclature was complex. Two general patterns emerged, but within these there was considerable variation among informants. For some the cultivated and wild red currants (R. rubrum L., R. petraeum Wulf., R. alpinum L.) produced lo pɛtarɛ̃, lo tɛmarɛ̃ or lo tramarɛ̃. For others, these red currants produced la krwaezola rɔdz ("la groseille rouge"/"the red gooseberry"). The greenish-yellow fruited wild gooseberry (R. uva-crispa L.) was most commonly known as la krwaezola. Black currant (R. nigrum L.), a recent addition to gardens, was most often called lo kaesis (from the French, "le cassis").

la piwan. Paeonia officinalis L. Peony

Like lilac and garden iris, peony was thought to be one of the oldest of garden ornamentals. It was grown in many gardens in Les Allues as it was elsewhere in the northern Alps (Meilleur 1985:63).

lo pja pɔr. Ranunculus repens L. Creeping buttercup

(See Section 4.a.).

lo plãtɛ̃. Plantago major L. Greater plantain

This extremely common plant of garden and habitation zone paths and waste places was occasionally sought for its root and for its

seed. An infusion of roots was said to be administered against colic. Seed might be gathered and put out in winter to attract birds.

la pɔma d ɔr. Lilium martagon L. Martagon lily

Bulbs of the common wild martagon lily were sometimes transplanted into Alluetain gardens where the bright, orange flowers could be admired more closely. Even though there was no recollection among older Alluetains of the bulbs having been eaten, the dialect term "la pomme d'or"/"the golden apple" perhaps refers to the golden-sheathed bulbs, suggesting that it had been used as food at one time. Chabert (1897:26) claims that the bulbs were eaten as famine food in traditional Savoie.

lo (lu) pɔr. Allium porrum L. Leek

Generally considered to be an important "old" garden plant, the leek was grown by most families in one or several tables. The fact that it wintered well in cellars, where it was stored with the root system intact, as well as in gardens under the snow, was often cited as a reason for its importance. Smaller plants which overwintered were still edible the following year, and of all the garden vegetables, the leek was the most likely to be eaten all year round. It was usually consumed in soups and in "potée," though it was also an important addition to pork offal sausage. The leek was usually referred to in the plural, lu pɔr.

The leek was known in Europe from Greek and Roman times (Hedrick 1972:37) but the history of its presence in Savoie or in the Tarentaise is not known. Early this century, in the lower hamlets of Les Allues, seed was often bought in Moutiers and planted in tight bedding rows in April, with the young leeks transplanted in May. In the higher hamlets, transplants were usually bought in May at Moutiers or Bozel and directly planted. It is not known either how leeks were procured or propagated before commercial seed was available, nor how long Alluetains had been procuring transplants from Bozel or Moutiers.

la prəma, lo prəmje. Prunus domestica L. Plum, Plum tree

Plum arboriculture contributed a significant part of overall fruit production in Les Allues, both in terms of fresh and dried fruit and for distillation into alcohol. Plums were especially important in the hamlets situated above 1250 m where apples and pears could not be productively grown (see Chpt. 6). At least seven cultivars, none of which could be easily equated to established varieties (see Dermine 1956 on the problems of determining plum varieties), were grown in Alluetain gardens early this century. They were commonly found along garden edges, along paths leading in and out of the hamlets, near manure heaps or against adjacent or nearby buildings where they were protected from winds. There were considerable differences among these plums (la bavə'rɛla, la dɛmwaizɛla, la prəma blãts, la prəma bly, lo prəmjo, la purtə bna, la vɛdɛzir) in maturation time and in use. In general, the smaller trees produced early maturing sweeter fruit that was consumed fresh or in preserves and the larger trees produced later maturing, tart fruit that was either dried for winter consumption or distilled to make the socially important plum brandy. Plum trees were propagated by removing and planting naturally layered basal suckers, basal root shoots or young trees that had sprouted in proximity to adult trees. Traditionally, the cultivated plums were not grafted like the apple and pear varieties (see Chpt. 6).

la prəma blãts. Prunus domestica L. "the white Plum"

The "white plum" ("la prune blanche") was one of the most common of the seven plum varieties traditionally cultivated in Alluetain gardens. It was mostly found in hamlets of the better exposed, eastern slope of the valley where it was important in making plum brandy. Several elderly people said they liked its tartness when eaten fresh. The "white plum" ripened much later than the "demoiselle" (la dɛmwaizɛla, see supra) and "porte bonne" (la purtə bna, see infra), usually in late September to mid-October. The fruit, when ripe, was actually light yellow, not white, with a rose cheek exposed to the sun. It was about the same size and shape as the "demoiselle" (elongated like a small egg). The tree grew to six or seven meters.

la prɔma bly. Prunus domestica L. "the blue" Plum

The "blue plum" ("la prune bleue") was especially important in brandy making in the hamlet of Le Villard (1217 m), on the western valley wall. Its taste, more tart than the "demoiselle" (see supra), was also more appreciated in preserves by some people than the sweeter variety, but production of this treat was limited by the need to add more sugar. It might also be eaten fresh. The "blue plum" produced a round, ping-pong ball-sized fruit which matured about the same time as the "white plum," in mid to late September. Several older inhabitants of Le Villard described how, in their youth, they would gather "blue plums" in the morning (usually by shaking the trees) and harvest barley in the afternoon, since the two products matured at the same time.

A second form of "blue plum," but with considerably larger fruit, was recognized at Le Villard and called la dɔbla ("the double"). It is not clear whether this fruit represented a distinct cultivar or whether it was simply the result of periodic reduced fruit number on normal "blue plum" trees, causing increased fruit size.

lo prɔmjo. Prunus domestica L. "the prune" Plum

A large, violet-blue, elongated plum, known locally as "the prune" ("le pruneau") was eaten fresh or, like almost all the late-ripening plums, added to the vat of fermenting plums to be distilled. It ripened toward the end of September or early October. Many trees can be found in the once nearly abandoned lower commune hamlet of Grand Biollay (1012 m). The "prune" is generally considered to be more of a lowland variety than are the other cultivars. Several trees were nevertheless found in other hamlets up to 1200 m.

la purtə bnə. Prunus domestica L. "la porte bonne" Plum

The "porte bonne" plum, very similar in size and fruit color to the "demoiselle" (see supra), was nevertheless thought by most people to be quite distinct, especially by inhabitants of the higher hamlets. It was, in fact, little known in the lower hamlets. It is possible that it was a clonal mutant of the "demoiselle" (or vice versa) found to be better adapted to higher altitude. While both the "demoiselle" and the "porte bonne" were found growing in some gardens in the lower hamlets, the "porte bonne" was the most common plum in

the higher ones, cultivated even in the highest hamlet of Morel (1520 m). The fruit was smaller and rounder than those of the "demoiselle," with the flesh separating with difficulty from the pit. They were eaten mostly fresh or after having been macerated in locally distilled alcohol. The "porte bonne" ripened slightly later than the "demoiselle" at the same altitude and exposure.

la rava. Brassica rapa L. Turnip

(See Section 4.a.).

la rybarba. Rheum rhaponticum L. Rhubarb

Rhubarb was considered to be an "old" garden domesticate by most informants, but it was apparently not common in household gardens. The enlarged petioles were heated into a compote and eaten as dessert. Those people who did not have it usually said it was because they did not like the taste or because adding sugar would have made it too costly.

la salada.

The term la salada was employed polysemously in Les Allues to gloss several functional and non-functional denotata which were extremely difficult to separate conceptually. Table 5c below reproduces these uses of the term. The discussion which will follow is limited to a description of the garden "salads" (la salada di kurti) traditionally grown for consumption in la salada (a) (see below).

Table 5c: The Functional and Non-Functional Polysemous Denotata of La Salada

la salada(a) = a functionally defined mix of fresh edible greens (both wild and domesticated), or other vegetables, commonly consumed with a sauce or dressing at a main meal.

la salada(b) = that set of folk taxa gathered or grown especially for consumption in la salada(a).

- la salada sarvadz = that set of wild plants or salads (la salada(b)) consumed in la salada(a).
  - la salada(c) = Taraxacum officinale L./dandelion, when immature (dandelion becomes lo laetsɔ when in flower, see Section 8.a.).
  - la rãpna = Valerianella locusta L./cornsalad (see Section 7.a.)
  - la krɛsã = Veronica beccabunga L./brooklime (see Section 8.a.).
- la salada di kurti = that set of domesticated plants grown in gardens (lu kurti) especially for consumption in la salada(a)
- la salada dɔ furi = "spring salad"
  - la lety = Lactuca sp./lettuce (see supra)
  - la batavja = Lactuca sp./batavian lettuce (see supra)
- la salada d ivɛr = "winter salad"
  - la salada friʒa = Cichorium sp./curled endive
  - la skarol = Cichorium sp./broad-leaved scarol endive

While tens of varieties of garden salads have been tried during the last 50 years or so, and many are still grown today, it was generally recognized that four kinds of domesticated salads were "old" and grown in Alluetain gardens early this century (= la salada di kurti). The first two--la lety and la batavja--were "spring

salads" (la salada də furi) belonging to the genus Lactuca and eaten until September or October. The second two were "winter salads" (la salada d ivɛr) belonging to the genus Cichorium and eaten until at least December. However, while most elderly people said these cultivated salads were "old," they also affirmed that such plants were little or hardly grown during the traditional period, mostly, it was claimed, because of the lack of oil to make dressing. Those people possessing walnut trees (lu noje, see Section 6.a.), and who made oil every year, were said to have planted salads more often than others.

la salada friʒa. Cichorium sp. Curled endive

All evidence indicates that curled endive la salada friʒa/ "frizzy salad", most likely a cultivar of C. endivia L., was planted in Alluetain gardens early this century. This cultivar was said to be resistant to cold, and like the leek (lo pɔr, see supra), might be consumed well into the winter months (December/January). Boards or straw might be placed around them for protection from the weight of the snow. Late in the season or in winter, when the plants became tough, they might be cooked.

la skarol. Cichorium sp. Broad-leaved scarol endive

A second apparent C. endivia L. cultivar was planted and consumed, much like the curled endive, in many Alluetain gardens early this century. Planted in late June from seed bought in Moutiers, the scarol endive, like curled endive, was transplanted in August and eaten when the batavian lettuce (see la batavja, supra) was finished producing, usually in late September or early October. Scarol endive was sometimes left in the gardens all winter, like curled endive and leeks (see lo pɔr, supra).

la slənɔ, la flənɔ. Chelidonium majus L. Greater celandine

Greater celandine is an exceedingly common plant in walls and rocky areas around household gardens and in waste places within the hamlets. The orange juice from a broken stem, said to be caustic, was put on warts in hopes of reducing them in size.

la sodz (di kurti). Salvia officinalis L. Sage

Grown in a few gardens, particularly in those of local medical specialists, sage was said to be most often used in treatments to heal broken bones or to strengthen bones. Sage, egg white, beef bone marrow and red wine were mixed together and placed on broken or healing members. This same concoction might be rubbed on the back and legs of a weak child.

la tɔmɛta. Malva neglecta Wallr. Dwarf mallow

This common plant of garden edges and waste areas within the habitation zone was an important medicinal employed both externally and internally. After being infused in hot water, the plant was placed on abcesses and sores, to soften and "mature" them, or in cataplasm, it would be put on cuts and scrapes. Such uses applied to both humans and animals. An infusion of flowers and leaves might also be administered to cows after calving or to a calf with diarrhea. Some people said that as children they played with, and even ate, the seeds. The term la tɔmɛta was extended to M. alcea L. and M. sylvestris L. when these species were encountered. They were similarly employed.

lo tsnɛvo. Cannibis sativa L. Hemp

Hemp was grown exclusively in parcels especially reserved and prepared for its culture: lo tsnavjɛ ("la chènevière"/"the hemp plot"). Hemp was an important economic plant in several respects: its fiber was used for rope and cloth; its seed was crushed to make one of the few traditional sources of oil; its broken and fiberless stalks were used to start fires; etc.

The distinction between the male and female plants was important to several of these uses. The male plant (lo tsnɛvo fɛmɛla), much finer and earlier maturing than the female plant (lo tsnɛvo malo), began to yellow and lie down by late August. Male plants were pulled by hand and kept apart from the female plants, which were pulled in late September or early October. After several days of drying, seed from the female plants was removed by striking the heads against a wooden board. Both male and female bundles were dried until winter (usually December) when the stalks were retted, broken and the fiber removed. Soaking the hemp stalks lasted approximately one month and

took place in retting pits (lu ner/"les rouissoirs") usually found in wet areas on the outskirts of each hamlet. The retted stalks were dried before being broken and the fibers removed. The fiber was then crushed at one of the several local mills and prepared for weaving or for confection into rope. During the several steps of preparation, the male and female fibers were kept apart. The male plant produced a finer fiber (la riθa) which might be mixed with cotton or wool to make cloth (shirts, sheets, etc.). In the early decades of this century this was not done in Alluetain homes. Weaving specialists in Moutiers or elsewhere were engaged to produce the desired products, or the hemp fiber was sold and cloth purchased. The very fine fibers were used as thread. The female plant produced a rougher fiber (lo tsarbo) which was braided locally into rope and other cord products. The finest residue (la ʃarpi) from the fiber-making process was used to swaddle babies. The spent hemp stalks (lu tsãdavi/"les chènevottes") were dried and used to start fires.

Early this century, hemp seed was taken in winter to a miller at Bozel or at Aigueblanche (downriver from Moutiers) where it was crushed to make oil. Hemp oil was used medicinally on cuts as an antiseptic. It was put, for example, on newborn babies' severed umbilical cords and on scrota of castrated animals. A small cloth was soaked in hemp oil and put on the stomach of a baby with colic. Hemp oil was also burned in small ceramic lamps during winter evenings spent in the stables playing cards, working or socializing. For families without walnuts, it represented one of the few sources of oil for salads and other culinary uses.

lo tsu. Brassica oleracea L. Cabbage

Two varieties of headed cabbage were traditionally cultivated in Les Allues: lo tsu kaeby ("le chou cabus"/"headed cabbage") and lo tsu frisa ("le chou frisé"/"frizzy cabbage"). These late maturing cultivars were generally considered to be the most important garden plants, and most women planted them in several tables in their household gardens. They were seeded in April, transplanted in May and harvested in October. If properly dried and stored in the cellar with the roots upward, they might be eaten through February or March, although by this time an estimated 25% to 50% loss of volume had occurred from spoilage. Rotting leaves were removed at regular intervals throughout the winter.

Cabbage was eaten mostly in soup, "potée" (la pɔta), or finely chopped in salad. It was also an important ingredient in the locally produced pork offal sausage made especially from lungs and known as lo pormɔne (from "le poumon"?/"the lung"). Slugs (le rmas'wɛle/ Arion ssp., probably also Agrioclimax agrestes) were particularly

fond of cabbage sprouts in late spring. To protect the young plants, barley chaff was placed around the gardens at strategic points and the slugs were said to be slowed by the sharp glumes of this cereal.

While the two late maturing headed cabbages were considered "old," and they were clearly the major cabbage varieties cultivated in Les Allues, several other cabbage cultivars were being grown this century in the commune: red cabbage ("chou rouge"), cauliflower ("choufleur"), brussel sprouts ("chou de bruxelles") and at least one early maturing headed variety ("coeur de boeuf" also called "le chou du mois d'aout"/"month of August cabbage"). Elderly people agreed that all these cultivars were "new," that is, known and cultivated only in their lifetimes.

Cabbage has been cultivated in Europe at least since Greek and Roman times when several varieties were already known (Hedrick 1972: 114-115). Tochon (1871) claims it was introduced into Savoie during the Roman occupation (-100 to +400 approx.). Several historical documents from the 19th century cited cabbage cultivation in Savoie (Verneilh 1807) and in the Tarentaise (ADS, FS310). By the early 20th century, most Alluetains were buying cabbage seed in Moutiers, although some people still produced local seed. This was done by growing several plants in a protected spot for overwintering, then letting these plants go to seed the second autumn.

lo tsurava. Brassica napus L. var. napobrassica (L.) Rchb. Rutabaga

The rutabaga was little cultivated in Les Allues, though many people said it had sometimes been planted during the First and Second World Wars. When grown, it was usually put with fodder beets, either in a cultivated field parcel or in a garden (see Section 4.a.). Rutabaga was used this century mostly as animal fodder.

la vẽdẽzir. Prunus domestica L. "la vendangeuse" Plum

The "vendangeuse" plum was a late maturing, mixed yellow and red, round fruit which matured at the time of the grape harvest (mid to late October, thus "la vendangeuse"?/"the grape harvester," fem. sing.). It was of considerable importance in brandy making because of its reputed high sugar content which was said to be unusual for a late maturing plum. This variety was thus felt to speed and improve fermentation as well as increase the alcohol content of the plum mash. Because of the sugar content, and because the flesh separated

easily from the pit, fruit of this variety was also sometimes made into preserves. Otherwise, fruit was eaten in late fall or early winter after having frozen on the tree and fallen to the ground. Fruit from this variety were also sometimes dried and eaten in winter, like la bavə'rɬla (see supra). The tree was said to grow to over 8 meters.

NOTES: CHAPTER 5

1. Human manure appears to have been used mostly to fertilize hemp. While several people rejected any thought of its use in the household gardens, others claimed it was used to fertilize onions. Alluetain homes were equipped with outhouses. These were often hollow, vertical boxes several meters long, contructed of wood and plaster, attached to exterior walls of houses. They were usually entered from the second story balconies. A trap door at the base of the outhouse allowed for periodic removal of manure. The length of the box probably permitted the human waste to cure for several years, as it moved downward in the outhouse, before it was used as fertilizer.

2. Since the advent of central heating this century, some winter foods have been conserved in secondary cellars in unheated buildings away from the house. The effect on stored foods of an increase of even a few degrees in cellar temperatures was noted by many Alluetains.

CHAPTER 6

The Hayfield-Orchard: Apple, Pear and Walnut Arboriculture in Les Allues

Cultivated varieties of apple, pear and walnut trees were extensively grown in Les Allues and in neighboring communes early this century. In 1929, for example, 15 ha. of "vergers, cultures arborescentes, pepinières" ("orchards, tree cultures, nurseries") were noted in the commune (DDA, SS 1929). Fruit and walnut arboriculture is old in the higher communes of the Tarentaise like Les Allues: local 18th and 19th century agricultural reports periodically refer to it, and on several occasions particularly meritorious varieties like "les pommes calvilles et renettes" have been cited (ADS, C863; Verneilh 1807:447; ADS, 1FS594). Though traditional arboriculture has declined drastically in recent years and many trees have been abandoned or cut, both these and many other apple and pear varieties can still be found in Les Allues and elsewhere in the canton of Bozel. There is no evidence that other regionally cultivated fruit and nut-bearing species, notably domesticated cherry and sweet chestnut, were grown in Les Allues. Plums were usually cultivated in or near household gardens (see Chpt. 5).

Despite these assertions, little is known in the northern French Alps about many aspects of fruit and walnut arboriculture (propagation, cultivation, etc.) or about the nutritional and other economic

contributions furnished by this sector of the traditional economy. Many of the fruit cultivars censused during fieldwork were not previously known to have been cultivated in Savoie. This lack of analytical attention to what must be considered an integral and ancient part of northern alpine mountain agriculture is probably due mostly to the traditional non-market orientation of production, and to the difficulty in identifying local cultivars and in sorting out their often complex regional synonymy. While production figures reported for Les Allues were generally quite low (see Tables 6d through 6h), in this one commune and the neighboring traditionally linked commune of Brides-les-Bains at least a dozen apple varieties, a half-dozen pear varieties and one walnut variety were grown earlier this century.

Apple, pear and walnut trees, in contrast to plum trees, were ordinarily grown outside of the hamlets of Les Allues. It was claimed such domesticated trees, in contrast again to certain plum varieties, could not be grown above 1250 m or so, and in fact, none were seen around any of the hamlets at higher elevations. All the hamlets below 1250 m were found to be surrounded by good numbers of apples and pears; walnuts were restricted--at least during the fieldwork period--to 1000 m or below.

While the term lo vérdʒe ("le verger"/"the orchard") was sometimes used to label the emplacements where apple, pear and walnut trees were grown in Les Allues (the term la nojare/"la noyeraie"/"the walnut grove" was found only as a place name in the neighboring commune of Brides), this term was not often used to refer to

individual parcels containing fruit trees. Apples, pears and walnuts were planted in private properties along major paths or in hayfields, usually within 100 meters of those hamlets situated below 1250 m. Even with trees planted in them, many parcels of this type were still mowed and it was common for them to be labeled individually lo pra ("le pré"/"the hayfield", see Chpt. 8). Among older Alluetains today, lo vɛrdʒe often denotes a concentration of fruit trees, usually intensively managed toward the goal of market sale of fruit (the Alluetain ideal view of a lowland, commercial orchard). In contrast, most Alluetain households possessing apple, pear and walnut cultivars generally had fewer than a dozen trees in all, and production was primarily directed toward internal family consumption. Such a holding was hardly ever grouped into one parcel, rather it would be dispersed within several parcels and emplacements around the hamlet. A typical small parcel containing a part of this holding--say three or four trees or fewer--would not be called ɔ̃ vɛrdʒe ("an orchard"), not so much because of its non-commercial nature, but because three or four trees grouped together were not "important" enough to "merit" use of this label. However, it was often the case that the apple and pear trees of a given hamlet were grouped at several locations around the hamlet. Such sites were generally formed by many, small, contiguous, privately owned parcels. While few individual family fruit and walnut tree holdings were consequential enough to warrant use of the term lo vɛrdʒe, the contiguous parcels of several families, all planted to fruit trees and taken as a whole, often were. Even though many

individual parcels containing fruit and walnut trees were labeled as hayfields, and in fact many did produce hay, they must be seen as perceptually different from "typical" hayfields (as described in Chpt. 8). For while a group of "typical" hayfields formed only an expanse of "typical" hayfields (sometimes called ỹ pravɛri/"a prairie"), a group of contiguous hayfield parcels planted to fruit trees formed ỹ vɛrdʒe ("an orchard" or "a hayfield-orchard"), a distinct folk biotope no longer associated solely with "grass" (l ɛrba epja), "herbaceous plants" (d ɛrba, see Section 8.a.) and mowing, but also with luz arbrə frytʃe ("les arbres fruitiers"/"the fruit trees") and all the activities associated with fruit production. Table 6a presents the folk phytocoenosis of lo vɛrdʒe. The folk botanical taxa linked to the Alluetain hayfield-orchards are described individually in the Dictionary Entries following, in Section 6.a.

Table 6a: The Folk Phytocoenosis of Lo Vɛrdʒe

luz arbrə frytʃe/the Fruit trees
la blɑ̃'kɛtə/Pyrus communis L./a variety of "Poire blanquet" (presumed)
l elo/Malus domestica Borkh./"l'Eylau"
d ɛrba/Herbaceous plants
l ɛrba epja/Grass
lo frɑ̃ rəʒo/M. domestica Borkh./"la Pomme franc-roseau" (presumed)
la grɑ̃t alɛksɑ̃dr/M. domestica Borkh./Grand Alexandre
la kalvin/M. domestica Borkh./a red Calleville variety (presumed)
lo krwaezne/Malus sylvestris Mill./Crab apple
la mɔsa/Moss
lo noje/Juglans regia L./Walnut
la pikardə/M. domestica Borkh./?
la pɔma, lo pɔmje/Malus ssp./Apple, Apple tree

Table 6a: Continued

la pɔma d adɑ̃/M. domestica Borkh./"la Pomme d'adam" (presumed)
la pɔma blɑ̃ts/M. domestica Borkh./Yellow transparent (presumed)
la pɔma grizə/M. domestica Borkh./"Pomme grise"
la pɔma mal/M. domestica Borkh./"La pomme male" or "Galantine"
la pɔma rava/M. domestica Borkh./?
lo pri, lo pɛrʃe/Pyrus communis L. (+ Cydonia oblonga Mill.)/Pears (+ Quince)
lo pri a dwezy/P. communis L./"la Poire à deux yeux"
lo pri a livrə/P. communis L./"la Poire à livre" (presumed)
lo pri martɛ̃ sɛt/P. communis L./"la Poire de martin-sec"
lo pri romɑ̃/P. communis L./"Poire romaine" (presumed)
lo pri vɛrde/P. communis L./?
la rɛ'nɛtə/Malus domestica Borkh./Canada reinette
lo vɛrdʒ̃/Viscum album L./Mistletoe

Propagation and management

All apple, pear and walnut trees grown in Les Allues and in Alluetain-owned parcels in Brides were managed in the form of "standard" trees. Apples were said to produce vigorously for 50 to 75 years, pears and walnuts were felt to be much older and some of the larger pear trees were thought to be several hundred years old. While it was usually stated that all cultivated fruit and walnut trees were grafted, even the oldest Alluetain men--since grafting and tree propagation were male activities--had first-hand experience only in grafting apples (all mature pear and walnut trees had been planted by previous generations; plums were not grafted, see Chpt. 5). Apple trees were propagated primarily by cleft grafting, but one older arboriculturist also knew the technique of bark grafting. In the first few years after either of these operations, the young trees were

only slightly formed to ensure the branches moved upward and outward from the grafting point.

Grafting stock was almost always provided by the crab apple (lo krwaezne/Malus sylvestris Mill.) common in Alluetain deciduous coppice (lo rɛbje, see Chpt. 9). Young trees one or two centimeters in diameter (called lu bɔtse/"les boucs"/"the billy-goats") were either transplanted close-in to the habitation and grafted, or grafting stock was produced by "planting" crab apple mash left from cider-making, then using the shoots which sprang up as needed. To ensure that roots did not plunge too deeply before the grafted trees could be moved into ʒ vɛrdʒe (usually after three years), some men would place pieces of slate under the mash or the transplanted trees before grafting. This ensured that the roots grew horizontally for at least the first few years and made the removal of trees much easier. It was not uncommon to find several ungrafted crab apples in hayfield-orchards as well; the small, sour fruit was an important ingredient in Alluetain cider.

Grafts were removed from the varieties to be propagated in mid to late winter. Some men would remove them in February, store them in humid earth in the cellar, then graft in April or early May when the trees began to bloom. Others would remove their scions in April or May just before grafting. Second, rather than first year wood, was usually preferred. This was said to advance the first flowering date of the newly grafted tree by one or two years. Once the two or three-budded scions were placed into the clefts (one or two parallel clefts would be split depending on the diameter of the grafting stock) or

into the openings produced by bark grafting (three or more openings separating the bark from the cambium), the newly grafted area was covered with wet clay (lo dzi), with mud, or even with a dirt clod and wrapped with hemp twine or other material. Cloudy weather was preferred for all these operations. Most cultivators then counted seven to ten years for the grafted tree to produce its first fruit. The much more common contemporary fall technique of shield budding ("en écusson") was not known, nor was any form of interstock grafting.

Because most fruit and walnut trees were planted by the previous generations of Alluetain men, it is difficult to say with certitude that pruning was a regular and important feature of management. It was probably not practiced at all on plums, pears or walnut trees. While suckers (lu gurmɜ̃/"les gourmands"), mistletoe (lo vɛrdʒ̃) and moss (la mɔsa) were removed from apple trees by most people early this century, the degree of attention given appeared to have varied considerably from family to family. Although most people disdained direct fertilization of the fruit and walnut trees, the domesticated animals that were pastured in the hayed parcels in fall (see Chpt. 10) would have contributed indirectly to their regular fertilization. The fruit trees were not treated traditionally with any type of insecticide.

The harvest

The majority of fruit varieties and walnuts, including plums and crab apples (lu krɔʒ̃), were gathered in October during a harvest period called la frita ("the fruit") which brought large numbers of

people together for this purpose. Finishing the fruit harvest in early October before undertaking the wine grape and potato harvests was preferred. In this way, the hayfield-orchards were "cleaned" before the bovines were brought from the "montagnettes" to pasture around the hamlets, usually late in October. There was considerable fear that the animals would otherwise choke on the apples and pears that had already fallen to the ground. If for some reason (usually weather related) the fruit harvest was delayed, the bovines would be kept away from the hayfield-orchards for this reason. The best looking fruit of the table varieties was gathered by hand pickers who climbed into the trees. The rest of the fruit was shaken from the branches and gathered from the ground. Walnuts were collected from the ground. Fruit and nuts were transported to the hamlets on sleds in sacks or wooden cases.

Most of the fruit gathered in October was produced by cider varieties and by not yet ripe table varieties. The bulk of this fruit went directly to making cider. Nevertheless, the nicer looking table fruit was kept apart and allowed to ripen progressively throughout the winter for consumption "in hand." While a few of these varieties ripened at the same time, most matured at staggered intervals between October and May or June of the following year (see Tables 6b and 6c). These later ripening varieties, the several early ripening, sweeter, table varieties gathered and consumed in August or September,

Table 6b: The Alluetain Apple Cultivars
Gathering and Ripening Times and Consumption Periods

Cultivar	Aug. Sep. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May Jun. Jul.	
La pomme blanche	/---/	(gathered in late August/early September, consumed in hand or as "soft" cider, might last 15 days)
La grand alexandre	/-------------/	(gathered in October, mostly into cider but also in hand for one month)
La pomme rave	/---------------------/	(gathered in October, used mostly for cider, but nice fruit eaten in hand to December/January)
La pomme d'adam	/-------/	(gathered in October, mostly into cider but also in hand for one month)
La pikarda	/- - - - - - -/------/	(gathered in October mostly for cider, but nice fruit eaten in hand in December and January)
L'eylau	/--------------------/	(gathered in October, eaten in hand through January)
La pomme grise	/- - - - - - - - - - - /-----------------/	(gathered in October, into cider then eaten in hand from January to March)
Le franc roseau	/--/	(gathered in October, mostly eaten in hand through April)
La calleville	/- - - - - - -/-----------------------------/	(gathered in October, eaten in hand from December to April)
La reinette	/- - - - - - -/--/	(gathered in October, into cider, from January through June in hand)
La pomme male (galantine)	/- - - - - - - - - - - - - - - - - - - /--------------------/	(gathered in late October, mostly for cider, can be eaten in hand from March through June)

Table 6c: The Alluetain Pear Cultivars:
Gathering and Ripening Times and Consumption Periods

	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.
la blã'kɛtə	/-----/ (ripe and gathered in mid August, eaten for two weeks approx. in hand)											
lo pri a dwezy	/-------/ (ripe and gathered in late August/early September, eaten in hand for one month)											
lo pri romã	/------/ (ripe and gathered late September, eaten in hand until 2nd or 3rd week in October)											
lo pri martɛ̃ sɛt	/- - - - - - - /----------/ (gathered late Nov., ripe in January, eaten through March)											
lo pri a livrə	/- - - - - - /----------/ (gathered in Nov., begins ripening in Jan., eaten mostly cooked through April or May)											
lo pri vɛrde	/------/ (gathered last, late Nov./early Dec., often after first hard freeze; only lasts one month approx., eaten cooked)											

permitted a family with a diverse holding of fruit trees to eat table fruit for perhaps ten or eleven months of the year.

In fact, there was clearly a logic which generated the configurations of many household fruit tree holdings: to ensure a continuous and varied supply of apples and pears for different purposes throughout the year, as well as from year to year, the average family sought to possess not only several functionally distinct varieties on the one hand, but precocious, average and late-ripening varieties on the other. However, no single Alluetain proprietor possessed trees of all the two dozen some apple and pear varieties that were censused in the commune. Those varieties used in making important products such as cider, which could easily absorb an entire season's production, were grown by many families in good numbers. While found in many family holdings, those varieties that produced fruit eaten only "in hand" upon ripening, all of which could not be consumed before spoilage began, were found in much smaller numbers.

The production and disposition of apple, pear and walnut products

Little easily interpretable quantitative data were available relative to the production and consumption of fruit and walnut products in Les Allues or neighboring communes. Apple, pear and walnut production has been irregularly reported over the years. In addition, between the 1750s, when production figures first became available, and the 1950s, reporting procedures and questionnaires changed innumerable times as political and agricultural administrations came and went. While walnut production was more regularly

reported than was fruit production, both groups were plagued by differences in what was actually reported. In most years for which agricultural statistics were available, quantities of walnuts were reported, but in some years, it was instead walnut oil that was cited. This problem was more pointed for apples and pears. Certain years "apple" production was reported, other years "cider apples" were reported, and in others, "cider apples and pears" were given, etc. (see Tables 6d through 6h which provide a brief look at some of the production figures available for apples, pears and walnuts). Despite such reporting problems and the fragmentary nature of production reports, a glance at these figures suggests that fruit and walnut production in Les Allues was sometimes of considerable importance. The agricultural report of 1929, which estimated that 1500 "pommiers à cidre" ("cider apple trees"), 450 "pommiers autres" ("other apple trees") and 230 walnut trees were found within the commune (DDA, SS 1929), supports this conclusion. Clearly such information suggests that fruit and walnut arboriculture should be considered as a substantial productive sector in the traditional Alluetain economy. It is, however, difficult to know the exact disposition of this production; while it is presumed that most apple, pear and walnut production was consumed internally by the Alluetain families, some of it probably made its way to the Moutiers market as well.

Apples, pears and walnuts were used in many ways in Les Allues. The commonly applied distinction between table fruit and cider fruit, for example, only partially captures the diversity of the fruit

Table 6d: "Apple Production" (a)

1818	0	quintal
1819	0	"
1820	5	"
1821	0	"
1822	0	"
1823	118	"
1824	79	"
1825	39	"
1828	20	"
1829	4	"

(a) Figures are from ADS, 1FS594, 5FS312, 5FS313, 5FS314, 5FS315, 5FS316, 5FS317, 5FS324. Original amounts were in "bichets du pays." The bichet of Moutiers is equal to .1543 hl (Raymond 1838). The hl, a measure of volume, has been converted to the qtl, a measure of weight, by the formula 1 hl of apples = approx. .85 qtl (from Watt, B.K. and A.L. Merrill 1963, Composition of Foods, USDA Agriculture Handbook No. 8).

Table 6e: "Cider Apple" Production (b)

1888	216	quintal
1894	12	"
1900	1500	"

(b) Figures are from ADS, 27M20, 27M28, 27M36. Original amounts were in quintals.

Table 6f: "Pear" Production (c)

1818	0	quintal
1819	0	"
1820	0	"
1821	0	"
1822	0	"
1823	26	"
1824	20	"
1825	26	"
1828	28	"
1829	6	"

(c) Figures are from ADS, 1FS594, 5FS312, 5FS313, 5FS314, 5FS315, 5FS316, 5FS317, 5FS324. Original amounts were in "bichets du pays." The bichet of Moutier is equal to .1543 hl (Raymond 1838). The hl is converted to the qtl by the formula 1 hl of pears = approx. .83 qtl (from Watt, B.K. and A.L. Merrill 1963).

Table 6g: "Cider Apple and Pear" Production (d)

1905	200	quintal
1910	100	"
1915	7	"
1920	50	"
1935	10	"

(d) Figures are from ADS, 27M45, 27M54, 27M63, 27M72, 27M90. Original amounts were in quintals.

Table 6h: "Walnut" Production (e)

1756	5	quintal
1820	3	"
1821	0	"
1822	18	"
1823	81	"
1824	81	"
1825	23	"
1828	27	"
1829	0	"
1888	80	"
1894	5	"
1900	100	"
1905	5	"
1910	0	"
1915	5	"
1920	0	"
1925	49	"
1929	4	"
1935	4	"

(e) Figures are from ADS, 5FS312, 5FS313, 1FS594, 5FS315, 5FS316, 5FS317, 5FS324, 27M20, 27M28, 27M36, 27M45, 27M54, 27M63, 27M72, 27M78, DDA SS 1929, 27M90. All original amounts prior to 1888, with the exception of 1822 (in decalitres), were in "bichets du pays." Those after 1888 were in quintals. The bichet of Moutier is equal to .1543 hl (Raymond 1838). The hl is converted to the qtl by the formula 1 hl of dry, shelled walnuts = approx. .35 qtl (from Guicherd 1930:176).

products that were locally consumed. Many apple and pear varieties were in fact eaten "in hand" fresh or after having been stored in cellars, and several varieties were grown solely for this form of consumption. The sweeter, earlier maturing varieties of table fruit were eagerly awaited in August or early September. At least one of these varieties was also made into "soft cider" (la sitra dɔ̃a/"le cidre doux"). However, the bulk of apple and pear varieties were semi-late or late maturing. During the October harvest period these varieties, not yet ripe, were much more sour tasting and thus better suited at this time of the year to the fabrication of "hard cider" (la sitra) and to a lesser extent, to cooking.

Even though most Alluetain families possessed vineyards at Brides-les-Bains--and wine was the preferred beverage--it appears that large numbers of people consumed considerable quantities of hard cider throughout the year (especially those families with small vineyard holdings, large fruit tree holdings, or a combination of both). A descriptive note pertinent to the entire canton of Bozel from the "Ten-year statistic" of 1862 (ADS, 27M11) provides an approximate idea of the importance of cider consumption in Les Allues and in neighboring mountainous communes:

> "les petits propriétaires boivent du cidre pendant la moitié de l'année et environ 1/2 litre par jour" ("the small proprietors drink approximately 1/2 liter of cider per day during one-half of the year").

Cider was sometimes also added to grape mash from which two wines had already been made (see Chpt. 7). This mix, to which sugar might be

added, would referment slightly to make a light alcoholic beverage tasting both of cider and wine (this drink is described for French-speaking Switzerland by Faes et al. 1924:43). The residue from cider-making, or apple mash, called la pɔmada, was distilled in November or December into brandy (la gɔta də la pɔmada). It was also placed around the bases of trees for fertilizer, or "planted" to make grafting stock (see supra). Those families possessing few vineyard parcels might distill a combination of all the mashes: grape, apple and pear.

It has not been possible to estimate the relative amounts of apples or pears consumed in hand, cooked, transformed into cider or sold. Several varieties of late-maturing pears were peeled and cooked--sometimes boiled in red wine or cider, sometimes baked--and served as dessert with sugar sprinkled on top. The nicer looking fruit of most apple and pear varieties were consumed "in hand" during the winter months as they ripened, or, depending on the personal circumstances of the families, sold on the local market. While it is probable that some of the better looking and more demanded fruit was sold in Moutiers at least as far back as the mid-18th century (see ADS, C863: Moutiers, 1755), all other evidence points to the likelihood that most fruit was consumed within the individual families.

For many of the families from the lower hamlets, walnuts (lu nwe) were the major source of oil. The residue remaining after pressing the oil (la trɔja də lo nwe) was saved and fed to domesticated animals. Some people said they also ate a bit from time to time.

Within the last 100 years or so, and especially just before and during the First and Second World Wars, the sale of standing walnut trees (lu noje) increased dramatically (apparently because of the demand for gun stocks), to the point that very few of these trees can still be found in the commune today.

* * * *

Though brief, this chapter has focused on one of the most poorly studied sectors of the traditional mountain economy in the northern Alps (see, e.g., Collomb & Raulin 1979:134). Undoubtedly the complexity and the importance of fruit and walnut arboriculture to Alluetain households largely surpasses this description. While I have generally concluded that household fruit tree holdings were diverse and that this diversity was predictable and important as it contributed to supplying functionally varied fruit to the families over much of the year, hardly any quantitative data were available to demonstrate concretely what the contribution of the many varieties was in satisfying basic needs. Next to nothing is known, for example, about the nutritional contribution of fruit and walnuts as they were consumed in many forms (see Appendix 2). Furthermore, it is not understood at all how residents of hamlets above approximately 1250 m reacted, or compensated, for the inability to grow apples, pears and walnuts at higher elevations.

Dictionary Entries

Section 6.a. The Folk Taxa of the Alluetain Vɛrdʒe

This section will present the folk botanical taxa commonly associated with the hayfield-orchards in Les Allues. The determination of the apple and pear varieties to the level of cultivar, many of which are not recognized by the "Catalogue officiel des espèces et variétés, Tome 3: Arbres fruitiers" (Document G.E.V.E.S.-I.N.R.A.) presented considerable difficulties. However, in all cases an attempt was made to establish equivalency between field specimens and a domesticated variety described in a published pomology, the best of which date to the 19th century. This could not be done in several cases, and in many others, equivalency is presumed and not claimed.

luz arbrə frytʃe. Malus spp., Pyrus communis L., Prunus domestica L. The Fruit trees (Apples, pears, plums)

Domesticated apple (lo pəmje/Malus domestica Borkh.) and pear (lo pɛrʃe/Pyrus communis L.) trees represented the dominant vegetation of the hayfield-orchards. The many cultivated varieties of these two species and those of the plum tree (lo prəmje/Prunus domestica L.), planted in or near the household gardens were subsumed in Les Allues by the superordinate taxon, luz arbrə frytʃe (see the plum cultivars, Section 5.a.). The term is extended to quince, peach and apricot trees that are known to be grown in the commune of Brides-les-Bains, and occasionally to the crab apple (lo krwaezne/Malus sylvestris Mill.) as well.

la blɑ̃'kɛtə. Pyrus communis L. A variety of the "Poire blanquet" (presumed)

Several "blanquette" pear trees were present in Les Allues and in neighboring communes early this century. This variety produced a small, mild but perfumed, very early maturing yellow pear, usually ripening sometime in August. The fruit could not be conserved long and was consumed "in hand" within a week to 10 days. It was especially appreciated for its precocity, its mild but savory flavor and for its ability to remain edible for at least several days after ripening (that is, before turning over-ripe and black or "blette"). Like the "white apple" (see la pɔma blɑ̃ts, infra), the "blanquette" trees were regularly marauded by local children. Trees were said to produce nearly every year but rarely in great amounts. The tree grew to over 10 meters.

It is likely that the variety of "blanquette" grown in Les Allues and the canton of Bozel corresponds with one of the three cultivars of "Poire blanquet" described by Leroy (1867:444-448).

l elo. Malus domestica Borkh. "l'Eylau"

The "Eylau" was one of the best known, highest quality and most widely cultivated apple varieties in the Tarentaise early this century (reputed to have been brought from the Eylau region of what is now East Germany by a soldier of Napoleon...Soc. Pom. de France 1947:238). In some regions of Savoie it was commercially produced and had considerable market success. In his 1930 pomological evaluation of the department, Grisard (1931:110) noted that the Combe de la Savoie region alone, between Albertville and Grésy-sur-Isère (immediately below Albertville and the entrance to the Tarentaise), exported 20 railroad wagonloads annually. This region appears to have been where the "Eylau" part of commercial apple production reached its highest proportion in Savoie (20% in 1944...Veyret-Verner 1944). In the department as a whole, the "Eylau" was estimated to represent 10% of total commercial apple production in 1958 (Min. de l'Agriculture 1961:24).

In the mountainous communes of the canton of Bozel, including Les Allues, apple production was primarily non-market oriented. Nevertheless, small locally produced quantities of "Eylau" were sold in the Moutiers market early this century. Otherwise the sweet, deep violet-red, striated, somewhat elongated fruit was consumed "in hand" between October, when it was gathered, and January, though sometimes it could be conserved longer. In Les Allues, many trees can still be found. It is interesting to note that this variety, which has had so

much success in the Tarentaise, has not been censused or cited in nearby French-speaking Switzerland, either by Faes et al. in the 1920s, or by Monico (1980) or by his mentor, R. Corbaz.

d ɛrba. Herbaceous plants in general

(See Section 8.a.)

l ɛrba epja. The larger Grasses

(See Section 8.a.)

lo frɑ̃ rɔʒo. Malus domestica Borkh. "la Pomme franc-roseau" (presumed)

The "Pomme franc-roseau" has been described by Leroy (1873:313) who considered it an apple of first quality. The same, or a related variety with the same name, was found cultivated in French-speaking Switzerland in 1928, especially in the mountainous canton of Valais (Faes et al. 1928:550). After finding the "Franc-roseau" cultivated in several regions of Savoie, including the Tarentaise, and appreciating "the beauty of the fruit...and the quality of its fine savory flesh...," Grisard (1931:110) recommended that its production be increased in the department. However, Grisard recognized two forms--a "big Franc-roseau" and a "small Franc-roseau"--and he counselled that only the "small" be retained, since the "large" was "deprived of these mentioned qualities...."

These observations by Grisard have been extremely helpful in sorting out what began as a complex agronomic and nomenclatural situation in the canton of Bozel. Clearly two types of "Franc-roseau" were grown there early this century, but in many cases, the same dialect term--lo frɑ̃ rɔʒo--was used to refer to both. However, at least three local arboriculturalists made some form of nomenclatural distinction between the two, usually marking the smaller form (lo frɑ̃ frɑ̃ rɔʒo = the "little Franc-roseau"; la mje rɔdz = the "red honey apple").

The two forms are similar in appearance. Both produce medium-

sized, horizontally flattened, deep red, vertically striated fruit. However, the fruit of the "big Franc-roseau" is somewhat larger, lighter red, earlier maturing and of shorter conservation, with the tree said to be more productive. The "little Franc-roseau" is smaller, deeper red, later maturing and of longer conservation, with the tree said to be somewhat less productive. In Les Allues, neither of these forms would be found growing in the 1980s, though several older cultivators claimed that lo frɑ̃ rəʒo and lo rəʒo had been grown there in their youth. Verbal descriptions of the fruit corresponded better with the "big Franc-roseau." Both forms were found growing in neighboring communes during the fieldwork period. Both were considered to be excellent table varieties, though the smaller form was more appreciated since it conserved through April (this is apparently the form described by Faes et al., while the larger and earlier maturing form is perhaps that described by Leroy).

la grɑ̃t alɛksɑ̃dr. Malus domestica Borkh. Grand Alexandre

The "Grand Alexandre," a large, greenish-yellowish apple with a variously extensive red wash, was grown in Les Allues and neighboring communes in small numbers. It was not considered a good table variety, and while producing abundant juice, its value for cider was diminished by the fact that its fruit often rotted on the trees before gathering (this fault was also noted by Faes et al. 1928:555 and by Beach 1905(2):4). The "Grand Alexandre" or "Alexandre" was nevertheless recommended by Grisard (1931:110), at the 1930 French Pomological Society Congress in Chambery, as a valuable addition to Savoyard orchards, especially in humid soils. The variety is well described in Leroy (1873:333-334).

On at least two occasions, I was shown what I believed to be the "Grand Alexandre" by owners who, while highly knowledgeable in fruit arboriculture, did not know the more common varietal name. One person called it simply la pɔma rədz ("the red apple"...see Soc. Pom. de France, 1947(1):394 for a similar observation).

la kalvin, la kal'vila. Malus domestica Borkh. a red Calleville variety (presumed)

Many varieties of white and red "Calleville" apples have been described in French pomological treatises (see esp. Leroy 1873:166+; Soc. Pom. de France 1927:382). A presumed red Calleville variety, called simply la kalvin or la kal'vila, was found growing in several

communes of the canton of Bozel, including Les Allues. The highly elongated, moderate-sized, dark red-violet fruit was said to be highly perfumed, excellently flavored with a low juice content and of long conservation. Its white flesh was veined--sometimes heavily--with red, and when completely ripe, the seeds could be heard striking their locules when the fruit was shaken. At Villard-des-Allues the fruit was gathered during the October harvest period and was eaten "in hand" throughout the winter, sometimes until spring. It was considered by most people to be the finest quality apple in the region. This is presumably the highly esteemed "Calvilla" variety that was first mentioned as being cultivated in the Tarentaise in 1755 (ADS, C863), then again in 1807 (Verneilh 1807:447) and 1821 (ADS, 1FS594).

lo krwaezŋe. Malus sylvestris Mill. Crab apple

(See Section 9.a.)

la mɔsa. Moss

(See Section 9.a.)

lo noje. Juglans regia L. Walnut tree

In 1930, Prallet began a short treatise on walnut growing in Savoie by stating that "it seems the walnut tree has always been very common around the villages and on the margins of main and rural roads" (in Guicherd 1930:167). He found walnut trees being grown to altitudes well over 1000 meters, including 1350 m in the commune of Bozel. In 1929, 230 trees were censused within the commune of Les Allues (DDA, SS 1929).

Walnut trees were grown in Les Allues mostly along the road and major footpaths leading into and away from the Chef-lieu and the hamlet of Le Villard, and thus in general below 1200 meters. While a systematic enquiry was not done, it appeared that most trees were owned by the inhabitants of these lower hamlets (and the upper commune families owned fewer trees, or none at all). As elsewhere, oil was the primary product derived from walnut trees (for salads and

for quick frying "fritters," etc.). The "cake" (la trɔja də nwe) remaining after pressing the crushed walnuts was also kept and fed to the domesticated animals, especially the calf(s). Walnuts (lu nwe) were gathered from the ground in October then kept in sacks to dry until December. Breaking walnuts open was a task of many family members when passing the early winter evenings with the stabled animals. Shells were cracked with a hammer on a wooden or slate board. Walnuts were eaten raw, or stored to be taken later to Bozel or Aigueblanche where they would be heated and pressed into oil. While production statistics are fragmentary and can be variously interpreted (shelled or unshelled nuts, wet or dry nuts, etc., see Table 6h supra), in some years walnut production was clearly significant. Several older Alluetains described the sale and felling of many walnut trees in the first half of this century. It was generally believed that wartime demand for gunstocks stimulated this market.

Nearly nothing could be learned about the varieties used or about traditional propagation techniques. Some older Alluetains felt trees were grafted, others felt they were not. Cadoret (1918:242,293) cites four varieties that were cultivated in Savoie and several others that seemed to be well suited to local growing conditions. Prallet (1930:146) cites five nationally known and three "local" varieties that he apparently found being cultivated in the department. However, no varietal names could be elicited in Les Allues or in neighboring communes.

la pikardə. Malus domestica Borkh. ?

La pikardə, also known in Les Allues variously as la pɔmə də vilarlyrɛ̃ ("the apple of Villarlurin" = a neighboring commune to the west) and la mɔ̃tanard ("the mountain apple") was the most enigmatic of the Alluetain apple varieties. Even though it was clearly established as an important cultivated variety in Les Allues and in the neighboring communities of St. Laurent de la Cote and Villarlurin to the west, I was unable to associate it with any previously described or mentioned cultivar from the pomological literature. Easily identified by its swollen peduncle, it was a highly fertile but rather poor tasting half-red, half-green variety with high juice content. For many Alluetain families, the "Piccard" was the most important cider apple. Several trees were owned by many families. The nicer fruit might be kept and eaten "in hand" until January, or prepared as "beignets" ("apple fritters"). The fruit was considered to be at its best for table consumption in December.

I believe that the "Piccard" may be a local hybrid between la pɔma rava (possibly the "Jacque Lebel," see infra) and la pɔma mal ("la pomme male," see infra).

la pɔma, lo pɔmje. Malus domestica Borkh., but also perhaps Malus ssp. Apple, Apple tree

The term la pɔma, though commonly used to describe the fruit of the apple tree, was also noted on a few occasions to have been used taxonomically. Even though Alluetains always preferred employing the "proper" names for taxa, most felt comfortable using la pɔma or lo pɔmje ("apple tree") as a generic taxon under which were subsumed all the domesticated apple varieties. This taxon was viewed by most people to be in direct contrast with lo krwaezne (crab apple, see supra). However, some informants claimed lo krwaezne was a sort of apple too, using la pɔma polysemously to form a superordinate apple category including both the wild and domesticated species. However, there was usually considerable lack of assurance on the part of those people proposing this clearly infrequent usage.

All evidence suggests that the wild apple (M. sylvestris Mill.) diffused very early to Western Europe from its genetic epicenter in Eastern Asia (Zeven & Zhukovsky 1975:140). Fruit remains were widely found in the northwest alpine lacustrine sites. Both Heer (1878) and Guinier (1908) found apples cut in two, apparently to facilitate drying and preservation for winter consumption. Occasionally a sort of mash has been found which is thought to remain from cider production (Renfrew 1973:138). Two positions exist in the paleoethnobotanical literature concerning the prehistoric domestication of the apple in Western Europe. Heer, for example, claimed to have found domesticated apples at the Bronze Age site of Robenhausen and his assertion was repeated by others (DeCandolle 1863:188, for example). Helbaek (1952:112) and more recently Villaret von Rochow (1969:201) have contested this claim. This last author has shown that while the Robenhausen apples were above average in size when compared to wild apples, they still were well within the range of size variation of wild apples found in contemporary Switzerland.

The use of apples was without a doubt important for the peoples of the lake-side settlements but their domestication during the prehistoric period remains uncertain. 500 years later, during the Roman period, Caton (2nd c. B.C.) in De Agricultura signalled several varieties of cultivated apple. 200 years later (77 A.D.), Pliny the Elder named 22 forms (Watkins 1976:248). Approximately a dozen varieties of apple were traditionally cultivated in Les Allues of the 30 some varieties found or said to be grown in the Vanoise Massif in the 1980s. The origins of several of these varieties remain unknown.

la pɔma d adɑ̃. Malus domestica Borkh. "la Pomme d'adam" (presumed)

Only one tree of "Adam's apple" (la pɔma d adɑ̃) was found in Les Allues in the 1980s. A few of this apparently little cultivated red and yellow variety were also being grown in neighboring communes to the north and east. "Adam's apple" was gathered during the October fruit harvest and allotted mainly to cider production, though it might also be eaten "in hand" into November. A good description of the cultivar known as "la pomme d'adam" in pomological literature could not be found. Leroy (1873), for example, had heard the name, but could not locate an example to describe. He suggests that the term was synonymously used for several different varieties of diverse origin. The "pomme d'adam" was said to have been cultivated this century in the department of Hautes-Alpes (Soc. Pom. de France 1947 (2):211). Faes et al. (1924:40) found a variety known by this name being grown in the district of Nyon (canton de Vaud) Switzerland, in the early 20th century where it was used as a cider apple.

la pɔma blɑ̃ts. Malus domestica Borkh. Yellow transparent (presumed)

An early maturing, highly fertile and non-seasoning, creamish-yellow apple cultivar was grown in small numbers in the canton of Bozel and in Les Allues. Several trees can still be found. Fruit could not be conserved for more than two or three days after picking. Such perishability made it unusual for any family to possess more than one tree. The variety was known either as la pɔma blɑ̃ts ("the white apple"), la pɔma dɔ̃a ("the mild apple") or, since it ripened and was quickly consumed in August, la pɔma di mɛ̃ d u ("the month of August apple"). The precocity was especially appreciated. By August or early September even the latest maturing varieties of the previous season were no longer available. For the last months (May-June) at least that these late ripening apples were being eaten, they had already lost most of their crispness and juiciness. The attraction of fresh, sweet and juicy "white apples" as they rapidly ripened led to heavy "marauding" by groups of youngsters. The fruit that managed to survive such surreptitious visits was otherwise consumed fresh or in "soft" cider (pressed in small quantities and consumed in three or four days).

It is likely that this cultivar is a member of the "Transparente" group of precocious cream white apples (perhaps the "Transparente blanche" = "Transparente jaune" described in Leroy 1873:846; see also the "Yellow transparent" in Beach 1905(2):247), members of which have regularly been found growing in mountain communities of French-speaking Switzerland (Faes et al. 1928:556; Monico 1980:286).

la pɔma grizə. Malus domestica Borkh. "Pomme grise"

The "Pomme grise" of Beach (1905(1):264), the "Pomme reinette grise" of Leroy (1873:684) and la pɔma grizə of Les Allues and the canton of Bozel would all appear either to be the same apple or closely related varieties. In most descriptions, the size of the fruit is recognized to vary considerably: trees found in Les Allues generally produced a small, evenly compressed, greyish-golden, yellowish-green, rough-skinned apple (= la "Reinette grise Haute-Bonté" of Grisard 1931:110?, but see Faes et al. 1928:551). The variety was moderately important in the canton of Bozel; several trees were found in Les Allues in the 1980s (the larger form of "Reinette grise"--common described in the pomological literature under the name "Reinette grise du Canada"--will be discussed under la rẽnɛtə, see infra).

The pɔma grizə was considered to be a high quality table fruit with firm, dry flesh. It was also appreciated in compote. The fruit was picked in October, ripened in January and was consumed through April (some people claimed it conserved much longer).

la pɔma mal. Malus domestica Borkh. "la Pomme male" or "Galantine"

The very late maturing, highly fertile cultivar known as la pɔma mal ("Pomme male") was extensively cultivated early this century in the Tarentaise, the canton of Bozel and in the commune of Les Allues. This variety produced a greenish, medium-sized fruit with a rust-red cheek. It is apparently little known outside of Savoie, even though it enjoyed considerable success in the department as a commercial fruit in the first half of this century. A description of the fruit could not be found in any of the late 19th century or early 20th century pomological sources. The "Pomme male" or "Galantine" name was not found in print until the early 1930s (Guicherd 1930:166; Grisard 1931:110). In the mid-fifties this variety represented approximately 5% of the commercial apple production in Savoie (Min. de l'Agriculture 1961:24). It is briefly described in the Verger Francais (Soc. Pom. de France 1947(2):280).

Gathered at the end of the fruit harvest period, the "Pomme male" was used by many Alluetain families to add a part of the acidity necessary to successful cider production (see Faes et al. 1924:44 on the importance of the various major constituents--sugar, acid, tanin--in cider-making). The nicer looking fruit were consumed "in hand" from March through June of the following year, but reaction was mixed when people were asked to respond about their quality as table fruit.

la pɔma rava. Malus domestica Borkh. ?

Also known as la pɔma plat ("the flat apple"), la pɔma rava ("the turnip apple") was grown in fairly good numbers in Les Allues and elsewhere in the canton of Bozel. This large, flat, greenish-yellow apple, carmen on the exposed cheek and waxy to the touch, was sweet, juicy, highly fertile even above 1000 meters and appreciated both for table as well as for cider consumption. The fruit ripened in late September or early October and was the first variety gathered at the time of the fruit harvest (la frita). The nicer looking fruit were saved for the table, eaten fresh or cooked, but would not conserve beyond November or December at the latest.

It is possible that the "turnip apple" of Les Allues is the "Jacques Lebel" of pomological dictionaries (Leroy 1873:400+; Faes et al. 1928:543-544), a variety successfully cultivated in the mountain communities of French-speaking Switzerland (Monico 1980:286).

lu pri, lo pɛr(e. Pyrus communis L. (+ Cydonia oblonga Mill.).
Pears (+ Quince)

Lo, or more so, lu pri (m.pl.) labels a generic taxon under which are subsumed the cultivated varieties of pear, the wild pear (Pyrus communis L.) and the quince (lo pri kwɛ̃/Cydonia oblonga Mill.) which grew in neighboring lower elevation communes.

Pears have occasionally been found in the prehistoric lacustrine sites of the northwestern Alps, but much less often than apples. Renfrew (1973:140) considered at least one prehistoric specimen to have been cultivated. Homer named several pear varieties in the 1st millenium B.C., as did Pliny the elder, though much later in the 1st century A.D. (Watkins ibid.:248). At least six varieties of pear were traditionally cultivated in Les Allues.

lo pri a dwezy. Pyrus communis L. "la Poire à deux yeux"

"La poire à deux yeux ("the two-eyed pear") or as it is also known, "la poire à deux têtes" ("the two-headed pear") has been well described by Leroy (1867:23-24) and by Le Catalogue Descriptif des Fruits Adoptés (Soc. Pom. de France 1927:509). Leroy claims that "among the pears cultivated in France, there is probably not one more ancient than this one" (ibid.:23). Trees producing this pale yellow,

seemingly double-calixed pear were found here and there in the canton of Bozel, including Les Allues, early this century. Fruit ripened rapidly in late August or early September and was consumed "in hand" or in "soft" cider. Fruit to be pressed into cider was gathered a week or more before the bulk of the pears began to ripen. The highly fertile and non-seasoning trees rarely grew to over 4 meters.

lo pri a livrə. Pyrus communis L. "la Poire à livre" (presumed)

"La poire à livre" or "la poire de livre" ("the one-pound pear") is a well known ancient variety extensively grown in the north of France (Leroy 1867:346-348; Soc. Pom. de France 1927:514). Lo pri a livrə, the most important and extensively cultivated of the Alluetain pears, appears to correspond with this variety. The enormous, green fruit with golden-brown cheeks were gathered in November and eaten from January through April or May. Tremendously hard before ripening, they were most often boiled in red wine, cider or in soups, or baked and eaten with sugar sprinkled on top. In late spring, when ripe, some were even consumed "in hand." Lo pri a livrə grew to 6 or 7 meters in Les Allues.

lo pri martĩ sɛt. Pyrus communis L. "la Poire de martin-sec"

"La poire de martin-sec" or "la poire de saint-martin" has been described in Leroy (1867:408-409) and in Le Catalogue Descriptif des Fruits Adoptés (Soc. Pom. de France 1927:310). It is thought to be a very old variety of unknown origin. While I was unable to locate trees of this variety in Les Allues during fieldwork, elderly arboriculturists knew the cultivar and believed it to have been present earlier this century. Several were found in neighboring communes, notably in Brides-les-Bains at the hamlet of La Saulce. Fruit were gathered in late autumn, usually in mid to late November. The relatively small, dry, rust-red pears were mostly cooked from January through early spring, but were also eaten "in hand" in the late season. It was not felt to be a good cider variety.

lo pri romã. Pyrus communis L. "la Poire romaine"

Lo pri romã ("the Roman pear"), found here and there in the canton of Bozel and in Les Allues, appears to correspond well with the pear "Beurré romain" (syn. "Poire Romaine") described by Leroy (1867:420-421). The dull, yellow, good-sized but somewhat irregularly-shaped pear ripened in late September or early October and could be eaten "in hand" for several weeks before turning over-ripe. Because of its particularly sweet, savory flavor and perfumed odor, it was considered to be one of the best of the traditional pear varieties for table consumption. However, the sometimes extreme height of the trees, which made for difficult gathering and resulted in damaged fruit as they fell to the ground, and its irregular fertility, were noted by arboriculturists.

lo pri vɛrde. Pyrus communis L. ?

Establishing equivalency with a previously described pear cultivar could not be done with this fairly common Alluetain variety. Several "green pear" types ("Poire verte...," etc.) were described by Leroy (1867:726; 729; 349-350), but the selection of a precise equivalent from these, or from the many other written descriptions of varieties which include the term "green" ("vert," "gros-vert," "verte-longue," etc.) was not possible.

Lo pri vɛrde was gathered in late autumn, often after the first big freeze of winter. This was said to help in getting the small, round, grayish-green fruit to fall from the very tall trees (10-12 meters). Even at this time of the year, the fruit was as "hard as a rock." They could only be eaten pealed and cooked, much like lo pri a livrə (see supra). However, unlike the much larger fruit which conserved until spring, lo pri vɛrde quickly turned over-ripe and by late December or early January was no longer edible.

la rɛ'nɛtə Malus domestica Borkh. Canada reinette

Commonly known as the "Pomme reinette du Canada," the "Reinette blanche du Canada" (Leroy 1873:637; Soc. Pom. de France 1927:423) or the "Canada Reinette" (Beach 1905:93), la rɛ'nɛtə is generally acclaimed as the overall highest quality, most appreciated fruit in Savoie, the archetypal commercial apple of the department (Grisard 1931:109; Guicherd 1930:166). Since the first decades of this

century, it has dominated commercial production in Savoie (60% of total apple production in the mid-fifties, Min. de l'Agriculture 1961:24). It has been proposed that the "reinette" was first brought to Savoie in the early decades of the 19th century by returning seasonal emigrants (Min. d'Agri. n.d.:20). However, if we accept that the 1755 citation of "pommes...renettes" from several communes in the Middle Tarentaise refers to this variety (ADS, C863), it is evident that the history of the Canada reinette in Savoie is considerably older (see also Verneilh 1807:447).

In Les Allues early this century, la rɛ'nɛtə was used both as a cider and as a table apple, but unlike lowland commercial orchards where it dominated, it was not the most common apple variety in the Alluetain hayfield-orchards. The "Piccard" (see supra), considerably more fertile than the reinette year in and year out, probably held this distinction. However, its importance in peasant holdings--while always apparently considerable--grew early this century as its reputation as a high quality table fruit generated increased market demand. In Les Allues fruit were gathered in late October. The inferior looking apples were added to the cider mix; the better looking fruit were kept to maturity in January. They could then be eaten "in hand" through spring. The reinette was also appreciated in compote and in tarts, and was sometimes sold on the Moutiers market. Some Alluetains prepared "soft" cider from this variety at intervals throughout the winter.

A second variety of large "Reinette," corresponding most likely to "Reinette grise du Canada" (Leroy 1873:689), was also found in Les Allues and in the canton of Bozel, though fewer trees were noted than of Canada reinette. This cultivar, often noted as somewhat different from Canada reinette by fruit tree owners, was called by the same name and treated similarly.

lo vɛrdʒ. Viscum album L. Mistletoe

Mistletoe is today contributing to the destruction of many abandoned Alluetain apple and pear trees. During the traditional economic period, the plant parasite was promptly removed when discovered. It was thought to be spread by thrush (le grive and lu mɛrlo/Turdus ssp.) defecation of undigested seeds.

This section has presented in part the dozen or so apple varieties and the six pear varieties traditionally cultivated in Les Allues and in several of the neighboring communes of the canton of Bozel. During fieldwork in the 1980s these varieties were either found in significant numbers, or were described by older fruit arboricuturists as being historically old and important, or both. During the course of this enquiry, at least fifteen other apple varieties and a dozen pear varieties were either found growing in the canton or were mentioned as having been grown at one time. An attempt to establish the relation between these fruit and previously described varieties was only superficially made. Nevertheless, in the following list of terms, where a nomenclatural similarity with a previously described or cited variety appears probable, the references are given.

Apples

Belle de Boskoop (Soc. Pom. de France 1927:369)
Belle fleur jaune (Soc. Pom. de France 1927:372)
Belle josephine (Soc. Pom. de France 1947(2):122)
Golden (Delicious) (Soc. Pom de France 1947(2):533)
lo gwẽ də vjo ("le museau de veau")
la karkavɕla (Soc. Pom. de France 1947(2):169)
Nationale (Soc. Pom. de France 1927:547)
Pomme d'Api (Leroy 1873:65+; Soc. Pom. de France 1927:366)
Pomme barbe (Soc. Pom. de France 1927:524)
Pomme court pendu (la pɔma kɛrpə̃di?) Soc. Nat. d'Hort. de France 1928:470)
Pomme de fer (Leroy 1873:299+)
Pomme normande (Faes et al. 1928:540,554)
la ram'bɔla
Reine des reinettes (Leroy 1873:611+)
Reinette d'Angleterre (Leroy 1873:616)
Winter banana (Soc. Nat. d'Hort. de France 1928:522)

Pears

Poire passe-crassane (Leroy 1867:505)
lo pri byre ("la poire beurré...Leroy 1867:415+)
lo pri d ʒkwa ("la poire curé"...Leroy 1867:610)
lo pri kormar ("la poire Colmar"...Leroy 1867:572+)
lo pri kwɛ̃ ("la poire coing" = Quince/Cydonia oblonga Mill.)
lo pri mɛsir ʒa ("la poire messire jean"...Leroy 1867:419)
lo pri mod ("la poire maude" or "de mode"...Guicherd 1930:183)
lo pri murbys ("la poire mouille-bouche"...Leroy 1867:729)
lo pri myska ("la poire muscat"...Faes et al. 1924:40)
lo pri rɔslɛ̃
la virgulər ("la poire virgouleuse"...Leroy 1867:743)

CHAPTER 7

The Traditional Alluetain Vineyard

Despite generally being considered a plant of the Mediterranean fringe (Olmo 1976:294), the wine grape (Vitis vinifera L.) was extensively grown in the alpine arc during the traditional period (for the distribution of grape cultivation within the French Alps, see especially Blanchard 1930). In Savoie, the wine grape has apparently been widely cultivated from at least the Roman period (Tochon 1887: see Section 9.a. following) and by the early 19th century nearly 8000 hectares were being cultivated (Verneilh 1807). Even though the American phylloxera plant louse destroyed most existing plantations in the late 19th and early 20th centuries, by 1912 the Savoyard vineyard had been replanted to over 10000 ha. (Guicherd 1930:106).

In the Tarentaise above Moutiers, three vineyard zones were of traditional importance (extending from roughly 400 m to around 900 m): a small zone on the left bank of the Doron des Bellevilles, just upriver of its confluence with the Doron de Bozel, served the communes of Villarlurin, St. Jean de Belleville and Fontaine-le-Puits (canton of Moutiers); a larger vineyard on the right bank of the Doron de Bozel between Moutiers and Bozel served the communes of Feissons-sur-Salins, Montagny, Brides-les-Bains, Bozel, St. Bon, La Perrière, and Les Allues (canton of Bozel); a much more extensive zone, beginning on

the left bank then moving to the right bank of the Isère River in the Middle Tarentaise, served the communes of St. Marcel to Bourg St. Maurice (cantons of Moutiers, Aime, Bourg St. Maurice). In the second vineyard zone between Moutiers and Bozel, where nearly all parcels are today within the canton of Bozel (holdings around Les Frasses are in the canton of Moutiers), the inhabitants of the nearby higher altitude communes of St. Bon, La Perrière and Les Allues had extensive holdings in what is now the lower elevation commune of Brides-les-Bains (commune of La Saulce prior to 1847). During the period for which evidence is available (1750+ approximately), this vineyard was broken into thousands of mostly privately owned parcels (the 743 "journaux" or approximately 220 ha. of the commune of La Saulce in 1730, for example, were composed of 4030 parcels, most of which were vineyard parcels; these were noted in the "Cadastre Sarde" as "seppes" or as "vigne"...ADS, C4400). Even though these holdings are not today, nor were they in the early 18th century, actually part of the communal territories of the higher elevation communes (and the history of the control of this zone has not been written), it is probable that this ownership pattern long predated the administrative formation of parishes and of communes. All evidence suggests this space was used for the growing of wine grapes by the surrounding higher elevation communities from a very early period (see Onde 1942:36, for a similar conclusion).

In 1730, most parcels of the nearly full south facing slope (600-900 m approximately) immediately north of the confluence of the Doron

des Allues with the Doron de Bozel (surrounding what is now the thermal station of Brides-les-Bains) were, and continue to be, owned by Alluetain families. In the 18th century there were also extensive noble, bourgeois and ecclesiastical holdings here--mostly people from Moutiers, nearby small towns and communes, but even some from as far away as Chambéry (ADS, "Cadastre Sarde de 1730": Map 453, Brides-les-Bains/La Saulce; C4400). Parcels on what is a moderate to steep hillside are mostly small, parallel to the fall-line (that is, running uphill-downhill in length), often terraced and heavily planted: one plant per square meter is the offhand rule employed by older viticulturists; in 1888 the communal report from Brides estimated there were "12,500 pieds" per hectare, or one plant every .8 m^2 (ADS, 27M20). With 210 ha. in production in 1888, the canton of Bozel vineyard alone was formed by at least 2,600,000 vine plants that year (see Table 7a). While we will see that several wine grape varieties--mostly reds, but also some whites--were the important cultural focus of this zone, traditional folk ecological and folk botanical knowledge relevant to la vno/the wine grape growing folk biotope, was not restricted to grapes alone. Both common beans (lo fazu/Phaseolus vulgaris L.) and squash (la kwɛrda/Cucurbita sp.) were also commonly planted in small quantities in vineyard parcels (several cultivars each). Many wild plants--some weeds, some useful--were also recognized and associated with the folk biotope. Table 7b presents the folk phytocoenosis of la vno/"la vigne." The folk botanical taxa associated with this, other vineyard zone folk biotopes, and the

Table 7a: Surface in Vineyard, Production Figures, Average Yield per Hectare in the Canton of Bozel

(Figures from the communes of La Saulce/Brides-les-Bains, Bozel, and Montagny; occasional early statistics also cite small production figures from Les Frasses or Feissons-sur-Salins; these have not been included.)

Year	Surface (ha.)	Production (hl.)	Hl/ha	Reference
1755 (a)	----	1150	----	ADS, C863
1771	----	355	----	ADS, C579
1818 (b)	----	4461	----	ADS, 1FS594
1819	----	3694	----	ADS, 1FS594
1822	----	1199	----	ADS, 5FS314
1823	----	1359	----	ADS, 5FS315
1824	----	990	----	ADS, 5FS316
1825	----	976	----	ADS, 5FS317
1828	----	1568	----	ADS, 5FS324
1829	----	1638	----	ADS, 5FS324
1862	137	4213	31	ADS, 27M11
1880	161	3906	24	ADS, 27M17
1888	210	1337	6	ADS, 27M20
1894	153	1140	7.5	ADS, 27M28
1905	114	----	----	ADS, 27M45
1910	111	----	----	ADS, 27M54
1915	82	1010	12	ADS, 27M63
1923	95	----	----	DDA, SS
1924	104	----	----	DDA, SS
1925	104	----	----	DDA, SS
1929	42	----	----	Guicherd ibid.:107
1935	102	1646	16	ADS, 27M90
1944	30	----	----	DDA, SS
1945	54	----	----	DDA, SS
1946	76	----	----	DDA, SS
1947	74	----	----	DDA, SS
1964 (c)	38	----	----	Cadastre viticole

(a) Those figures in "charges de vins de Moutiers" (1755, 1771) are converted to liters by the formula 1 charge = 72 pots, 1 pot de Moutiers = 1.452 liters (ADS, 1FS594). The "charge" thus equals 104.5 liters.

(b) Those figures in "setiers" (1818, 1819, 1822, 1823, 1824, 1825, 1828, 1829) are converted to liters by the formula 1 setier = 48 pots de Moutiers "et ce pot vaut 1 litre 452" (1FS594). The "setier" thus equals 69.696 liters.

(c) In 1955, it was established that Les Allues viticulturists owned 34 ha. of vineyards at Brides (thus in the whole of the canton of Bozel vineyard), in 1970 they owned 4 ha., in 1980, 3 ha. (ASADAC, 2, rue Plaisance, 73000 Chambéry).

vineyard zone in general (as highly localized taxa) are described individually in the Dictionary Entries following, in Sections 7.a. and 7.b.

Table 7b. The Folk Phytocoenosis of la vno/"la vigne" (* = wild)

l abˈsɛ̃ta/Artemisia absinthium L./Wormwood*
l alikãt/Vitis vinifera L./Alicante Bouschet
lez ãpwe nɛre/Rubus fruticosus L./Bramble*
l avɛrne/Vitis vinifera L./Aramon
la barlɔtir/Prunus spinosa L./Blackthorn*
lo bjɔ̃blɑ̃/Verbascum thapsus L./Great mullein*
lo durif/Vitis vinifera L./Durif
la dusɛt/V. vinifera L./Doucette
d ɛrba/Small phanerogams, weeds*
la farnɔza/Amaranthus blitoides Wats. + Chenopodium album L./Prostrate amaranth + Fat hen*
lo fazu/Phaseolus vulgaris L./Common bean (several cultivars)
5455/Vitis sp./Seibel hybrid No. 5455
4643/Vitis sp./Seibel hybrid No. 4643
lo gaeme/V. vinifera L./Gamay
lo grɑ̃ nɛr/V. vinifera L./Grain noir
la grɛnaʃ/V. vinifera L./Gouche rouge
lo gru nɛr/V. vinifera L./Corbeau
la gwaʃ/V. vinifera L./Gouais blanc
lo klɛtɔ̃/V. labrusca L. x V. riparia Michx./Clinton
la kwɛrda/Cucurbita sp./Squash (several cultivars)
la mɑ̃ˈdɔza/V. vinifera L./Mondeuse noire
la myska/V. vinifera L./Muscat
l otlo/V. labrusca L. x V. riparia Michx./Othello
lo plɑ̃ nɛr/V. vinifera L./?
la rãpna/Valerianella locusta (L.) Laterrade/Cornsalad*
la rwela/Convolvulus arvensis L./Field bindweed*
la ʃasla/V. vinifera L./Chasselas

While not affiliated with la vno as a folk biotope per se, four folk taxa recognized and named by Alluetains were known to grow within what could generally be called the vineyard zone in and around Brides-les-Bains (see Table 7c). All four taxa were highly localized within this zone and infrequently encountered. Information about their

whereabouts was communicated using place names (lu ma/"les lieux-dits"). They thus do not appear to have been affiliated, like the majority of folk taxa, with specific folk biotopes.

Table 7c: Unaffiliated, Highly Localized Folk Taxa Within the Vineyard Zone

lo marabu/Stipa pennata L./Plumed needlegrass
lo platano/Platanus orientalis L./Plane tree
lo poblo/Populus nigra L. and cv. Italica/Poplar and Italian poplar
lo tsatęne/Castanea sativa Mill./Sweet chestnut

Traditional Alluetain viticulture

Early this century, all wine grape plants were grown according to the "vigne basse" technique--that is, 3 or 4 short "arms" were directed from the trunk within 50 cm of the ground. These produced vine branches every year which were attached in gobiet form to a 1 meter long vine-prop (see explanation in Guicherd ibid.:118). According to Cadoret (1929:197), this technique "placed the production near the ground, which permitted obtaining complete maturity and quality wines." Despite the advent of several serious cryptogamic diseases from North America in the second half of the 19th century (Blackrot, Oidium, Mildew...Galet 1967:182; Guicherd ibid.:123; Perrier de la Bathie 1897:4), the phylloxera epidemic which destroyed all plants, and the near collapse of the traditional economy this century, many parcels are still exploited today.

Responsibility for the wine grape sector of the economy was masculine, though women and children helped with hoeing and harvesting

and the women were apparently responsible for the common beans and the squash when they were planted between the rows of grape vines. The Alluetain men would usually begin the vineyard season by making one to several trips in winter with sled and mule to deliver manure. Piles would be left at the summits of the several dispersed parcels which ordinarily constituted a familial vineyard holding. By late February or early March, activities related to upkeep and to the preparation of the plants for the new season were underway. Men would go down on foot to Brides (from four to ten km depending on the hamlet of residence) and would often stay several days at a time. They would sleep in small wooden shelters (le barake...which doubled as tool sheds) that were erected in corners of parcels here and there. More fortunate viticulturists possessed small stone buildings. Such living arrangements might be shared by two or more related men.

The first spring work involved changing the broken or rotted vine-props (lu paiʒo, usually made from lo saepɛ̃/Picea abies (L.) Karst., see Section 9.a.) and pruning back all plants to the 3 or 4 branch-producing "arms." During pruning periods the moon was closely watched, with the new moon being avoided. As the weather warmed, young vines were planted to replace older ones that had ceased to produce satisfactorily. Before the arrival of the phylloxera plant louse, which attacked the roots, new plants were propagated by layering traditional varieties (in French this technique is called "provignage"/"layering"...see Perrier de la Bathie ibid.:9; the young shoots were called de prɔvɛ̃ in dialect). These plants, also called

"directs" earlier this century because they were not grafted, were susceptible to the louse and could no longer be used in non-grafted form after its passage. By the early 20th century, almost all phylloxera resistant replacement vines were being purchased at Moutiers at la fɛra de rɔ̃po, ("la Foire des rameaux"/"the Branch fair"), usually held sometime around Easter (in 1980, on March 25).

In April, after all the plants had been pruned, several family members would help the household head move the topsoil from the bases of the parcels to the summits (as in the cultivated fields/ lu tsã...see Chpt. 4, laboring on the moderate to steep hillside behind Brides moved the dirt downslope, and it had to be regularly moved uphill). Laboring and weeding with hoes would then begin and when it was finished, the manure would be dispersed.

By May, the annual shoots were well formed and the plants were in leaf. The plants would be further pruned for suckers and would receive their first treatment of the new season. Today a solution of copper sulfate crystals and water is vaporized onto the vines with a wet pump. But in the first years after the phylloxera disaster, and the replacement of "direct" plants by French and traditional varieties grafted on American stock, or by non-grafted American varieties (lu plã amɛrikɛ̃ = "the American plants"), most people used a form of sulphur powder (lo soipra) purchased at the local pharmacy. It was applied either mixed with wood ash in a dry pump or wet mixed with water and locally produced limestone powder. All older viticulturists insisted that before the coming of the late 19th century

"maladies," including phylloxera, the vineyard had not been treated. Some viticulturists, or more likely their wives, would plant the common bean (apparently both the climbing and dwarf varieties of Phaseolus vulgaris L.) between several rows of wine grape plants at this time (see lo fazu, Section 5.a.; see also Dion 1977:5, fn17 for the historical context of this practice). Squash (la kwɛrda/Cucurbita sp.) might be planted in a corner of a parcel where a small pile of surplus manure was deposited.

By mid-summer, the grape plants had flowered, the fruit clusters were formed, and the annual shoots had become branches of 40 to 50 cm in length. These branches were then carefully tied to the vine-prop in a vertical position with the ends upward. Hemp string was most commonly used for tying, but golden osier branches (luz avã/Salix alba L. subsp. vitellina (L.) Arc., see Section 5.a.) might also be used. This ensured that the now-ripening grapes did not touch the ground, where they could be damaged by humidity or by small foraging animals, and better exposed them to the sun. The branches were maintained in this position throughout the winter so that the weight of the snow would have little chance of breaking them from the trunk and damaging the plant.

During mid to late summer, the vineyard parcels would be periodically visited to assess the maturing grapes and to treat the plants. Each was treated three to four times in an ordinary season, but in especially wet years they would be treated more often, particularly after heavy rains. Humidity was generally recognized as the culprit

which brought on the various maladies. From mid-August on, all new growth was removed and the meristems of the branches were broken off. It was believed as a result that the energy of the plant would go solely to the grape clusters. By September, the viticulturists were watching the ripening grapes and the weather very closely. Hail (la grêla) was especially feared at this time. In ordinary seasons, the grape harvest would begin around the first or second week of October, after the common beans and squashes had been removed. But during years of excessive summer heat (the grapes would ripen too quickly) or when successive nights of freezing weather occurred earlier than normal (stopping the ripening process and causing the clusters to fall), harvesting would begin in mid to late September.

The harvest

During the traditional period, the moment of the grape harvest was strictly determined at the Brides vineyard--and elsewhere in Savoie--by what is known as the "ban de vendange" ("the grape harvest decree"). This ordinance, usually decided upon by the municipal council of the commune in whose territory the vineyard was located, permitted harvesting (and the entry of harvesting equipment into the vineyard) only after a specified date. This decision was, in effect, arrived at by consensus, the result of continual evaluations and discussions about the weather and the state of the maturing grapes among council members--themselves often viticulturists--and other vineyard owners in the implicated commune. An advantage was thus gained at the vineyard by sacrificing individual to collective

decision-making: the crop was protected from damage caused by the uncontrolled movement of people, animals and equipment into the densely planted contiguous parcels, and the harvesting of non-mature grapes was avoided. A person known as the "Garde-champêtre" or the "Garde-vigne" ("Field guard" or "Vineyard guard") was charged with enforcing this decree. Local viticulturists greatly appreciated the presence of a guard at the vineyard. This not only ensured against theft of grapes by unscrupulous neighbors, it also liberated much needed manpower to work in other sectors of the economy (manpower that would otherwise have been lost to monitoring the vineyard during the last weeks of ripening). The plowing and planting of rye, the hemp harvest, the second hay cut, the fruit harvest, the potato harvest, and the grape harvest all usually occurred between mid-September and mid-October and manpower was at a premium.

The "ban de vendange" was said to have been legally established in Savoie in 1559 by Duc Emmanuel-Philibert (Coutin 1978:18). However, it seems likely that the written act was a concretion of an already long-standing custom of unknown time depth (see e.g. Perouse 1911:75). According to Tochon (1887:51+), the "ban de vendange" was still widely practiced in the department in the late 19th century. At the Brides vineyard, despite heavy attrition among viticulturists after the phylloxera epidemic, it was still followed in the first decades of this century. Today, even though the "ban" has been discontinued and the vineyard is no longer monitored by a "Garde-vigne," most viticulturists continue to harvest at the same moments.

Since all clusters were removed by hand, the grape harvest was a simple but time consuming activity. It might last up to two weeks for some families, depending on the number of plants to be harvested. Although a few white grape varieties were planted, red grape varieties were almost solely implicated in the harvest. The grapes from small numbers of plants of white varieties were usually eaten during the harvest. The red grape clusters were generally removed with a hand-knife, placed in a wooden recipient carried on the back (la brẽda), or more commonly in hand baskets (lo kavẽ) and carried to a spot where the mule or a cart was waiting to be loaded. Grapes were traditionally mounted to the various hamlets for vatting in thick cowhide recipients (lo bɔ/"l'outre") estimated to carry from 70 to 90 kilos (see a similar description in Tochon ibid.:54). Such grape transport appears to be general to the French wine-producing regions in mountainous areas where roads were traditionally few and poorly maintained (Dion 1977:53). The recipients were placed on each side of the mule saddle. During the two or three trips that a man could make in a day (depending on the distance between the vineyard and the hamlet of residence), the other members of the family would continue to harvest. Late last century and early this century, some families could afford tip carts. The grapes were dumped into round wooden tubs (la dʒɛrla) that were placed in the carts and transported to the hamlets. Today most viticulturists use oblong wooden cases which they transport by means of various types of motorized vehicles.

Vinification

The whole grape clusters were dumped into wooden vats made of Norway spruce (lo saepɛ̃/Picea abies (L.) Karst.) or, in the cases of more wealthy individuals, vats of oak (Quercus sp.). These vats were usually located in the cellars of houses or of secondary buildings, or in small out-buildings reserved for this purpose. The grapes were crushed either by walking on them with bare feet or by using wooden pistons. During the ten days to two weeks that it took for significant fermenting to occur, large amounts of grape juice (la mɔda) were drunk. When fermentation was slow in starting (low sugar content in the grapes; very cold late fall weather, etc.), grape mash would be periodically removed, heated and returned to the vat. Once the juice had cleared and fermentation was complete (in good years to between 7 degrees and 9 degrees), the wine was transferred to casks. The wine was then left to age. While it could be drunk right away, it was still sharp to the taste and viticulturists always preferred to have at least one month's supply to finish from last year's crop before beginning the new wine. In general, after pressing, the mash was returned to the vat, covered with water or cider and allowed to referment (sugar was added if it could be afforded). Fermented to 3 or 5 degrees, this after-wine or "piquette" (la pi'kɛta) was usually consumed before the regular wine. Some viticulturists were known to pull a third very weak after-wine from the mash in the same manner.

For those possessing or having access to a still (which most families appeared to have; 35 alembics were censused in the commune in

1929...DDA, SS 1929), the grape mash was distilled within one or two weeks (usually by mid to late November). This wood-fire process involved a two step distillation. The product of the first distilling--l ɛva fula, or "crazy water"--was distilled a second time before being consumed. If all went well, the result was an alcohol of between 40% and 60%. This "eau-de-vie" (la gɔta) was then consumed during the year among family and friends, often with various fruits macerated in it. It was also used medicinally to cleanse wounds of all sorts. As an ingredient in several traditional remedies, with various wild and cultivated medicinal plants macerated in it (genepy, caraway, madonna lily, etc.), grape mash alcohol was taken internally for a variety of disorders for both humans and animals.

Average vineyard holdings, yields and the disposition of production

It has only been possible to formulate very gross estimates of average vineyard holdings and wine yields at the individual level during the traditional period in the canton of Bozel. For lack of more direct statistical information, a variety of sources was used to piece together what must be considered to be a highly speculative evaluation of production and consumption.

Even though the canton of Bozel vineyard as a whole was greatly degraded by the 1960s, and only a fraction of the exploited surface of 1888 (210 ha.) was being cultivated in 1964 (38 ha. or 12%, see Table 7a), it appears that certain production information derived from the "Cadastre viticole" (Min. d'Agriculture, 1964), and from contemporary older viticulturists, is quite comparable to that which might have

been found in earlier pre-phylloxera periods. The average parcel size in the canton of Bozel vineyard in 1964 of 601 m^2 (see Table 7d) was, for example, only slightly larger than average parcel size in the commune of La Saulce in 1730 (which became, with some land additions, the commune of Brides-les-Bains in 1847). This commune, almost entirely composed of vineyard parcels at that period (5/6 estimated in 1829...ADS, 5FS324, commune de la Perrière), was formed of 743 "journaux" (approximately 220 ha.) and of 4030 parcels (= 553 m^2 average parcel size...ADS, C4404). Furthermore, as we saw earlier, planting densities between pre-phylloxera periods (.8 m^2 per plant in the 1888 Brides vineyard) and contemporary estimates by older viticulturists (1 m^2 per plant) are also highly comparable. I am encouraged to believe--because of the near equivalency of these two aspects of the vineyard at different periods--that the average surface exploited per viticulturist in the 1964 canton (1300 m^2, see Table 7d) was roughly similar to that exploited per viticulturist during earlier periods. Although calculations or estimates of yields were infrequent in agricultural reports, etc., during the traditional period in Savoie, it is likely that wine yields can be situated around 25 hectoliters the hectare (hl/ha) in the canton before the arrival of phylloxera (see Table 7e). This determination corresponds closely with the conclusion drawn by Nicholas (1978:696) that "yields reached 35 to 40 hectoliters the hectare in the best vineyards...but in most they were ordinarily around 20 to 25 hectoliters..." (see a similar estimate in Montmayeur 1865). If I am correct in assuming that 1300 m^2 was an

Table 7d: Structure of the Canton of Bozel Vineyard in 1964
(Min. d'Agriculture "Cadastre viticole")

Commune	T owners	T parcels	T surface	M No. Parcels/ Owner	M Surface/ Parcel	M Surface/ Owner
Les Allues	91	184	15h66a00ca	2	851 m^2	1721 m^2
Bozel	23	26	3h08a09ca	1.13	1185 m^2	1339.5 m^2
Brides-les-Bains	16	44	2h33a42ca	2.75	530.5 m^2	1459 m^2
Feissons-sur-Salins	16	30	1h91a17ca	1.875	637.2 m^2	1195 m^2
Montagny	56	234	5h42a17ca	4.25	231.7 m^2	968.2 m^2
La Perrière	55	83	6h53a77ca	1.5	787.7 m^2	1188.7 m^2
St. Bon	39	39	3h52a21ca	1	903.1 m^2	903.1 m^2
Total	296	640	38h46a93ca	2.2	601 m^2	1299.6 m^2

Table 7e: Estimated Production Figures for the Pre-Phylloxera Canton of Bozel Vineyard

Year	Yield/ha	Where	Reference
1860	17 hl/ha	arrond. de Moutiers "average year"	ADS, 27M1
1862	38 hl/ha	canton de Bozel "average year"	ADS, 27M11
1862	31 hl/ha	canton de Bozel "actual year"	ADS 27M11
1865	25 hl/ha	Savoie "vigne basse estimate"	Montmayeur 1865, cited in Coutin 1978:23
1868	30 hl/ha	arrond. de Moutiers "average year"	ADS, 27M4
1868	26 hl/ha	arrond. de Moutiers "actual year"	ADS, 27M4
1880	24 hl/ha	canton de Bozel "actual year"	ADS, 27M17
1887	20 hl/ha	Savoie "estimate"	Tochon 1887, cited in Perrier de la Bathie 1897:10
M	26+ hl/ha		

approximate average pre-phylloxera vineyard holding in the canton, at the 25 hl/ha rate of production, the average traditional peasant holding would produce around 325 liters of wine annually.

Most evidence indicates that the major part of these 300 to 400 liters of wine, the after-wines and the locally distilled grape mash alcohol were internally consumed in the canton during the traditional period. The average vineyard holding of 1300 m^2 in 1964 was significantly below the Savoie average of 2374 m^2 (Min. d'Agriculture, 1964) and well below the average of 3500 m^2 cited by Guicherd for the whole of Savoie in 1908, and of 3574 m^2 in 1925 (ibid.:106). This much smaller average holding would seem to reflect, at least in part, the predominantly non-commercial nature of the individual peasant vineyard, as Guicherd also concluded. This conclusion, that most vineyard products of the canton were internally consumed, is supported by the agricultural report from the Province of Tarentaise in 1758 which states "the (grape) harvest furnishes only the inhabitants of the (local) parishes" (ADS, C579). In 1868, the reporter for the arrondissement of Moutiers (including the canton of Bozel) also asserted that there were "some owners who distill the grape mash...but it is not delivered to commerce" (ADS, 27M4). It is interesting to note that the only published estimate of wine consumption at the individual level in the canton places it at approximately one-half of my own production estimate of 325 liters. In 1862, it was reported that the "small owner-cultivator" ("individu-adulte"/"adult individual") consumed one-half liter of wine per day (= approximately 180

liters/year...ADS, 27M11). A typical peasant family and economic unit of two adults (man and wife) and their children would thus consume roughly 360 liters of wine per year, well within the range of my production estimate of 325 liters (plus how many liters of after-wines?)

Despite this evidence, and the declarations of the older canton of Bozel viticulturists that most production was consumed by the individual families, several elderly men also admitted that some people regularly sold small amounts of wine and locally distilled alcohol in the early decades of this century. In spite of the 1758 report, it would appear that wine was an important source of revenue in at least some of the Tarentaise communes during the traditional period: in 1756, for example, the commune of Aime in the Middle Tarentaise derived more than one-third of total revenues from the sale of wine (ADS, C1426). In the early years of this century--and especially after the declaration of commercial wine production became obligatory (Guicherd ibid.:106)--if and when wine was sold in the canton, it was most likely done locally and surreptitiously.

Dictionary Entries

Section 7.a. The Grape Varieties Cultivated in the Canton of Bozel Vineyard

Material from grapes has frequently been recovered from the northern alpine lacustrine sites dated to the Bronze Age, but the consensus among paleoethnobotanists (Guinier 1908; Heer 1878; Neuweiler 1905; Renfrew 1973) is that these remains are from the wild form of the wine grape (*V. vinifera L. subsp. sylvestris (C.C. Gmelin) Hegi*). The exact use of the wine grape at this period is not known, but wine-making and/or oil production have been proposed. According to Olmo (1976:295), the domesticated wine grape spread through Western Europe with Christianization of the countryside during the Roman period. Tochon (1887), however, who cites Columelle, claimed that wines from Savoie were already highly appreciated in Rome in the 1st century A.D. This would suggest pre-Christian domestication or diffusion in the ancient province. While Les Allues and many other mountainous intra-alpine communes with territory extending into the upper foothill or lower montane zones produced wine grape products, and were in possession of at least a dozen grape varieties during the traditional period, it is not known precisely when cultivation of the vine began in the northern interior alpine region.

> "les différents espèces de plantes de vignes...sont très multipliés. Peu de vignerons prennent soin de les distinguer ou de les séparer; au contraire, on les

> confond assez généralement les uns avec les autres" (Verneilh 1807:431)
>
> "there are many different types of wine grapes. Few viticulturists take the care to distinguish among them, but instead usually confuse one with the other" (Verneilh 1807:431)

Before its destruction late last century and early this century by the phylloxera plant louse, the Tarentaise vineyard was composed of many distinct local and regional cultivars (mostly red wine grapes, but some whites), in contrast to the classic commercial vineyard composed of one well-known variety. While varietal diversity clearly increased as a result of the introduction of American, French and hybrid varieties during the reconstitution of the vineyard after the phylloxera disaster (in 1964, for example, the Alluetain vineyard holdings alone contained well over twenty grape varieties...Min. d'Agriculture, "Cadastre viticole"), such diversity nevertheless appears to have reflected the traditional pattern in the Tarentaise vineyard as well (Guicherd 1930:117; Perrier de la Bathie 1897:8; Verneilh above). All evidence indicates that varietal diversity occurred at the level of the individual holding as well as vineyard-wide. Such a mixed configuration of cultivars has usually been explained as resulting either from "the diversity of soils and situations in Savoie where the wine grape has been planted," from the ecological constraints of climate and altitude which stimulated the mountain viticulturists to continually try different cultivars (Guicherd ibid.:125), or from the availability of diverse cultivars given the location of Savoie in the midst of three well-known viticultural regions (Piémont, Dauphiné, Ain...Perrier de la Bathie

ibid.:10). Such essentially "etic" explanations do not coincide completely with the "emic" explanation furnished by older Alluetain viticulturists: many varieties in a single holding protected them from total loss under fluctuating mountain climatic conditions (each variety responding separately to different conditions).

While varietal diversity in the pre-phylloxera canton of Bozel vineyard appears incontestable, identifying the varieties implicated, describing them accurately and preserving them if necessary has proved to be a much more formidable task.

Older Alluetain viticulturists were consistent in repeating lo gru nɛr ("le gros noir"), lo grɑ̃ nɛr ("le grain noir") and lo plɑ̃ nɛr ("le plant noir") as the three most important red grape varieties grown early this century. L aramɔ̃ ("aramon"), also known locally as l avɛrne and lo gru gri, and lo durif ("durif") were also considered to be important, but in general they were secondary to the "top three." Several other red varieties--much less planted than the reds--were also cited. I made several attempts, with the help of a viticultural assistant,[1] to establish the relation between the varietal names elicited in dialect and those varieties censused in the 1964 "Cadastre viticole" (Min. d'Agriculture). Table 7f reproduces these varieties, the surface areas and relative percentages of total surface of each in the 1964 canton of Bozel vineyard. An attempt was also made to integrate into this analysis those varieties reported to have been cultivated in Savoie, and particularly in the Tarentaise, before and just after the phylloxera disaster (Tochon 1887; Perrier de la Bathie 1897; Guicherd 1930). Success in these

Table 7f: Configuration of the Canton of Bozel Vineyard in 1964: by variety (Owners from the communes of Les Allues, Bozel, Brides-les-Bains, Feissons-sur-Salins, Montagny, La Perrière). (* = cultivated before phylloxera)

Grand noir de la Calmette*		Gouais blanc*	
6.375 hectares	or 21.6%	.234 h	
Mondeuse noire*		Othello	
5.509 h	or 18.7%	.210h	
Durif		Seibel 4643	
3.808 h	or 12.9%	.187 h	
Cépages indéterminés (undetermined)*		Hibou*	
3.524 h	or 12.0%	.159h	
Hybrides divers de cuve (Diverse hybids)		Chasselas blanc	
2.365 h	or 8.0%	.133 h	
Seibels divers		Jacquère	
1.964 h	or 6.7%	.054 h	
Gamay noir à jus blanc		Petit Bouschet	
1.459 h	or 4.9%	.022 h	
Alicante Bouschet		Plantiers	
1.191 h	or 4.0%	.020 h	
Corbeau*		Couderc divers	
.644 h	or 2.2%	.016 h	
Aramon noir*		Pinot blanc vrai	
.492 h	or 1.7%	.011 h	
Seibel 5455		Baco 1	
.441 h	or 1.5%	.010 h	
Portugais bleu		Total	
.346 h	or 1.2%	29.485h	
Vinifera divers de cuve (Diverse vinifera)			
.310 h	or 1.0%		

endeavors was partial at best, and for several reasons. First, in many instances there were discrepancies among the three viticultural experts (op. cit.) with regards to varietal determinations and to the synonyms applied to different varieties in the various regions of Savoie (including the Tarentaise). Second, and most importantly, in the majority of cases the elderly viticultural consultants could not identify many of the plants they possessed in their vineyards. After the arrival of the more serious cryptogamic diseases, then of phylloxera late last century and early this century, these same men, but more so their fathers, had experimented with scores of wine grape varieties within a relatively short time in hopes of rapidly reconstituting their holdings. The uncontrolled movement into the Bozel vineyard of scores of unknown or poorly known French (but non-Savoyard) varieties grafted on American stock (mostly V. riparia Michx, V. rupestris Scheele in L. selections), of local/regional varieties grafted on American stock, and of "direct" American hybrid varieties (mostly V. labrusca L. x V. riparia Michx. cultivars, Clinton, Noah, etc...Galet 1967:163), must have created a highly confusing botanical and nomenclatural situation for local viticulturists. In addition, during the reconstitution of the canton of Bozel vineyard in the early decades of this century, those plants bought at Moutiers (produced and sold by merchant viticulturists/grafters from the region around St. Pierre d'Albigny and St. Jean-de-la-Porte) were neither controlled for quality nor for varietal integrity. Most elderly canton of Bozel viticulturists admit today they were often unsure of what they were buying or were

certain after the plants were in production that they had not purchased what they had thought. Third, neither myself nor my viticultural assistant was competent to determine the full range of wine grape varieties cultivated in existing plantations. The following descriptions of the varieties implicated in the traditional composition of the canton of Bozel vineyard, and at the various phases of its transformation, must therefore be appreciated in light of these problems. However, as we will see, the inability of Alluetain viticulturists to maintain a "tight" nomenclatural system relevant to the grape varieties in recent times must be viewed in the context of Verneilh's statement: the common peasant approach to wine grape cultivars may actually have been a pragmatic disinterest in precisely distinguishing among many of the functionally near-equivalent varieties cultivated in the traditional vineyard.

l alikãt. Vitis vinifera L. Alicante Bouschet (presumed)

A french variety of red grape distributed during the early post-phylloxera period by the St. Pierre d'Albigny viticulturists/grafters (Cadoret 1929:222; Guicherd 1930:140), the alicante bouschet represented 4% of the total canton of Bozel vineyard in 1964 (see Table 7f). This variety was known by most older canton of Bozel viticulturists. Its importance varied somewhat among holdings but it was widely recognized to be a secondary variety.

l avɛrne (syn. l ivɛrne, l aramɔ̃, lo ibu, lo gru gri). Vitis vinifera L. Aramon (Aramon noir + Hibou in the 1964 "Cadastre Viticole")

Despite the fact that the aramon noir and the hibou were censused as distinct varieties in 1964 (see Table 7f), Guicherd, supported by the authority of Couderc (1930:140), considered the two red grape cultivars to be so closely related to be the same variety. This same author cites hibou as the common term for this variety around Chambery and hivernais on the common term employed in the Tarentaise. Perrier de la Bathie (1897:13) claims the term "pomêtre" was used for this same variety in the canton of Aime (I found the term lo pɔm'jɛθo being used for what appeared to be the same variety in the vineyard of la Cote d'Aime in the Middle Tarentaise).

Statements by older canton of Bozel viticulturists about this variety (or these varieties) closely reflect the "lumping" and "splitting" polemic of the specialists (see especially Galet 1958: 1130; Guicherd ibid.:141; Tochon ibid.:94-95). Some believed the terms l avɛrne, l aramɔ̃, lo ibu and lo gru gri ("the big grey") represented the same variety; others believed they represented very closely related ones (the term lo ibu was the least known of these terms in the canton of Bozel).

While the aramon was considered to be a traditional variety, most older canton of Bozel viticulturists did not feel this to be one of the "top three." Its major drawbacks were felt to be its relatively low alcohol content, its susceptibility to disease, and its difficulty in maturing. The aramon noir and hibou accounted for only 2.2% of the total canton of Bozel vineyard in 1964 (see Table 7f). According to Guicherd (ibid.:140), the aramon is an old, pre-phylloxera variety in Savoie.

la bɛlɔʃna. Vitis vinifera L. Belochin rouge de la Tarentaise (presumed)

A highly local variety of red grape of secondary importance was described and referred to as the "Belochin rouge de la Tarentaise" by Tochon in 1887 (p. 98+). This information was repeated by Pulliat (1888:26), Viala & Vermorel (1901 vol. 7:43), Constantin & Gave (1908:151), and by Guicherd (ibid.:140).

Several canton of Bozel viticulturists recognized in this term the local name la bɛlɔʃna. Though not cultivated in large numbers, it was considered to be a very old variety which had now become rare. If censused in 1964 (see Table 7f), it was most likely included in the group of unidentifiable plants ("cépages indéterminés"), which accounted for 12% of the canton of Bozel vineyard that year.

lo durif. Vitis vinifera L. Durif

Though not usually felt to be one of the "top three," the durif was appreciated by the canton of Bozel viticulturists earlier this century (as well as today) for its regular annual production, for its high alcohol content and for its deep red color. In 1964, this variety represented nearly 13% of the total canton of Bozel vineyard. According to Guicherd (ibid.:144), its presence in Savoie is fairly recent, dating to the immediate post-phylloxera period (but see Perrier de la Bathie ibid.:13+ who suggests an earlier introduction).

la dusɛt. Vitis vinifera L. Doucette

According to the older viticulturists, a few plants of this little known white grape variety were traditionally planted here and there in the canton of Bozel vineyard. Cited by Perrier de la Bathie (1897:16) as specific to the Brides-les-Bains vineyard, this information was repeated by Galet (ibid.:1136). It is not known if this variety was censused in 1964; if so, it was probably included in the unidentifiable plant totals ("cépages indéterminés").

lo gaeme. Vitis vinifera L. Gamay

According to Guicherd, the common French "Gamays" came into Savoie during the post-phylloxera reconstitution of the vineyard (four varieties of Gamay were cited as being cultivated in Savoie in 1908...Constantin & Gave p. 152). In the Tarentaise they were said to have "rendered great service to the hillside vineyards, at the limit of wine grape cultivation, because of their regular production and easy maturation" (Guicherd ibid.:145). The variety "Gamay noir à jus blanc" accounted for nearly 5% of the canton of Bozel vineyard by 1964 (see Table 7f). In some holdings, this variety--which is now produced into a fairly popular commercial wine elsewhere in Savoie--was much more important.

lo grã nɛr. Vitis vinifera L. Grain noir, Grand noir de la Calmette (presumed)

Lo grã nɛr ("le grain noir"/"the black seed") was consistently cited by canton of Bozel viticulturists as one of the "top three" traditional varieties. Though a positive identification could not be made, it is likely that this term referred to the variety Grand noir de la Calmette (personal communication, M. Goddard, Dir. Dept. de l'Agriculture de la Savoie). According to Guicherd (ibid.:146), this fairly new, but nevertheless pre-phylloxera French hybrid "...spread somewhat into eastern France and particularly into Savoie..." after 1855. In 1964, this cultivar was the most common variety in the canton of Bozel vineyard, representing nearly 23% of all plantations.

la grɛnaʃ. Vitis vinifera L. Gouche rouge, Gouche noire (presumed)

Viticultural experts of the late 19th century have referred to a local variety of red grape cultivated in the arrondissement of Moutiers as the "Gouche or Guy-rouge de la Tarentaise," the "Guy-noir" (Tochon ibid.:96), the "Gouche noir," "Guy noire" or "Gouche rouge" (Perrier de la Bathie ibid.:13). This information was repeated by Guicherd (ibid.:142) and by Galet (ibid.:1136). According to Perrier de la Bathie (ibid.:13), it was "very common" around Moutiers.

Several older viticulturists responded to this information by suggesting that this must have been what they called la grɛnaʃ: an old, quite important red grape variety which they believed had now

been lost (the terms lo gi and lo gwi were found being used in the canton of Aime, presumably for the same variety). This same presumed variety--Gouche noire--was found being grown in the commune of Le Bois, near Moutiers, in 1964 under the name Gueuche noir (Min. d'Agri. "Cadastre viticole").

lo gru nɛr. Vitis vinifera L. Corbeau, Douce noire (presumed)

Older viticulturists consistently referred to lo gru nɛr ("le gros noir"/"the big black") as one of the "top three" traditional red grape cultivars in the canton of Bozel vineyard. The absence of a positive identification, and disagreement among viticultural experts, has made the determination of this cultivar highly speculative. Tochon (ibid.:95+), for example, claims two forms of "douce-noire" were traditionally cultivated in the arrondissement of Moutiers: the "douce-noire" and the "douce-noire grise." He gives "plant noir" as a synonym for the "douce-noire" and "ocanette" as a synonym for the "douce-noire grise." However, Perrier de la Bathie (ibid.:12+) gives "gros noir" as a synonym for the "douce noire" or "corbeau" in the Tarentaise and "ocanetta" as its synonym in the canton of Aime (the terms la ðɛ'nɛta, la ðɛ̃ta/"la chainette"/"the small chain" were employed in the canton of Aime in 1980 to refer to an unidentified red grape variety). For this author, the "douce noire" is "one of the most common (varieties) in Savoie" and "has nothing in common" with the "douce noire grise" of Tochon. Pulliat (1888:87) supports Perrier de la Bathie in citing "gros noir" as a synonym for "corbeau," while Viala & Vermorel (1901-1909 vol. 2:371) cite "plant noir," "gros noir" and "corbeau" all as synonyms for "douce noire" in Savoie and Haute-Savoie. As to the "douce noire grise," Viala and Vermorel (p. 373) split the difference between Tochon and Perrier de la Bathie, claiming "ocanette" as a synonym for this variety, which nevertheless "has no relation to (the "douce noire")." While Constantin & Gave (ibid.:151+) repeat Tochon, after outlining the disagreement between the two earlier Savoyard writers, Guicherd (ibid.:132), supports the position of Perrier de la Bathie. On the other hand, Galet (ibid.:1136) repeats the information provided by Tochon. This confusing situation is further obscured by the regular use of the term lo plɑ̃ nɛr/"le plant noir"/"the black plant" in the canton of Bozel to refer to another (?) of the "top three" traditional varieties (see plɑ̃ nɛr, infra).

If lo gru nɛr is indeed the "corbeau" (or "douce noire") of viticultural treatises, by 1964 it represented only 2.2% of the canton of Bozel vineyard.

la gwaʃ. Vitis vinifera L. Gouais blanc, Gouche blanche, Gouache blanche, Guy blanc (presumed)

Both 19th century Savoyard viticultural experts (Tochon ibid.: 111; Perrier de la Bathie ibid.:16) described a white grape--the "Gouache, Gouche blanche or Guy blanc"--as local to the Tarentaise. This information was repeated in later viticultural treatises (Guicherd ibid.:151+). Several older canton of Bozel viticulturists provided the term la gwaʃ in response to questioning, claiming this to be a very old white grape variety planted here and there in local vineyard holdings. .234 h, or less than 1% of the total cantonal vineyard, was planted to this variety in 1964 (see Table 7f).

lo klɛ̃tɔ̃. Vitis labrusca L. x V. riparia Michx. Clinton

Of the post-phylloxera "direct" American hybrids, clinton and othello (see l otlo, infra) were the best known in the canton of Bozel, though only small numbers of each were planted. The "foxy" taste of both was not appreciated and in 1964 no plants of clinton were censused in the canton. Elsewhere in the Tarentaise, this variety is quite commonly used decoratively on house facades to 1300 meters.

la mɑ̃'dɔza. Vitis vinifera L. Mondeuse noire (presumed)

Several elderly canton of Bozel viticulturists provided this term, but claimed the "Mondeuse" was of little significance in the canton. The fact that in 1964 the mondeuse noire was the second variety in total surface (18.7%...see Table 7f) suggests that this highly important Savoyard variety might have been known locally by another name. Perrier de la Bathie cites "Plant noir" as one of many synonyms for the mondeuse (see plɑ̃ nɛr, infra) and this was repeated by Viala & Vermorel (1901 vol. 2:274).

lo myska. Vitis vinifera L. Muscat (presumed)

This term was associated locally with a white grape variety which was commonly eaten during the harvest period.

Perrier de la Bathie (ibid.:16) cites the "Muscat blanc commun" as a variety traditionally cultivated in Savoie but which had suffered extensively from the late 19th century cryptogamic diseases. Constantin & Gave (ibid.:151) cite six varieties of "Muscat" cultivated in Savoie as "raisins de table" ("table grapes"). Guicherd (ibid.:140) claims "le Muscat" is an old but unimportant white grape variety in Savoie.

l otlo. Vitis labrusca L. x V. riparia Michx. Othello

Of the post-phylloxera "direct" red grape American hybrids, othello had the greatest success in the canton of Bozel vineyard, though less than 1% of the vineyard was planted to this variety in 1964. Its vigor and large-sized grapes were appreciated, while its "foxy" taste was not. This variety, like clinton, was often directed onto the facades of houses and other buildings in the Tarentaise. Othello, clinton and other "direct" American hybrids (noah, etc.) were known collectively in the canton as lu plɑ̃ amɛrikɛ̃ ("the American plants").

lo pla n r. Vitis vinifera L. ?

Lo plɑ̃ nɛr was widely recognized in the canton of Bozel as one of the "top three" traditional red grape varieties. Conflicting information from 19th century viticultural experts, and the inability to make field determinations, has hindered a precise evaluation of this term. Tochon (ibid.:95), for example, gives the name "plant noir" as a synonym for "douce noire" (or "corbeau") in the Tarenaise, while Perrier de la Bathie (ibid.:11) cites it as a synonym for the "mondeuse noire" (which would correspond better to the "unnamed" 18.7% of mondeuse noire plants found in the canton in 1964...see Table 7f; see la mɑ̃'dɔza, supra). Such conflicting information is variously reproduced by later writers (Viala & Vermorel 1902 (2):274; Constantin & Gave ibid.:151; Guicherd ibid.:132). One elderly viticulturist, when asked to describe the plɑ̃ nɛr, unknowingly echoed these inconsistencies by suggesting that perhaps lo gru nɛr and lo plɑ̃ nɛr were the same thing!

lo Ʃasla. Vitis vinifera L. Chasselas

Small numbers of plants of unidentified chasselas white grape varieties were traditionally grown in the canton of Bozel vineyards. Most older viticulturists had heard of several sub-varieties, but were not sure which ones they or their fathers had planted. Constantin & Gave (ibid.:150) cited 13 varieties of "Chasselas" grown in Savoie for table grapes. Like lo myska, they were eaten fresh during the harvest period or were added to the marc before distilling to increase sugar content.

4643. Vitis sp. Seibel hybrid No. 4643

This and the following seibel hybrid No. 5455 were the best known of the post-phylloxera "direct" seibel hybrids to be introduced into the canton of Bozel vineyard. The seibel 4643 was said to have been planted during the 20s and 30s and produced well for several seasons, then collapsed, and was no longer sought by local viticulturists reconstituting their holdings. Guicherd (ibid.:157) would seem to provide the answer to the failure of this hybrid: "Its resistance to phylloxera is doubtful and it is necessary to treat it once or twice to guarantee against mildew; furthermore, it is attacked by anthracnose in cool soils." Less than 1% of the total vineyard surface remained in Seibel 4643 in 1964.

5455. Vitis sp. Seibel hybrid No. 5455

After the failure of seibel No. 4643, many canton of Bozel viticulturists tried seibel No. 5455 with much better success. In 1964, collectively all seibel hybrids represented 6.7% of the total vineyard, and 5455 was the single most common seibel hybrid in the canton (= 1.5% of total...see Table 7f).

Miscellaneous

Many other varieties of both red and white grapes have been cited as cultivated in the Tarentaise or in the arrondissement of Moutiers: "blanc verdan" (Perrier de la Bathie ibid.:16; Constantin & Gave ibid.:154; Guicherd ibid.:140), "lignan blanc" or "lugnan" (Tochon ibid.:111; Perrier de la Bathie ibid.:17; Constantin & Gave ibid.:151), "prié blanc" (Tochon ibid.:81; Constantin & Gave ibid.:151), "rogettaz" (Tochon ibid.:97 = two varieties; Perrier de la Bathie ibid.:14; Constantin & Gave ibid.:153; Guicherd ibid.:143), "rogin" (Tochon ibid.:97; Perrier de la Bathie ibid.:14; Constantin & Gave ibid.:153; Guicherd ibid.:143) and "verpelin blanc" (Tochon ibid.:81; Perrier de la Bathie ibid.:16; Constantin & Gave ibid.:155; Guicherd ibid.:140). None of the elderly canton of Bozel viticultural informants responded to these names.

7.b. Non-grape Cultivars and Wild Plants of La Vno and the Vineyard Zone Around Brides-les-Bains

la ab'sɛ̃ta. Artemisia absinthium L. Wormwood

Through wormwood was not restricted to the vineyard zone, it was most often associated with vineyard parcel and path margins. While felt to be a weed where it was unwanted, wormwood was gathered and employed as an insectifuge. It might be burned, with the smoke directed towards very bad infestations, or the fresh plant put into places where insects were not wanted (in clean clothes, in armoires, in the vineyard buildings, etc.).

les ãpwe nɛre. Rubus fruticosus L. Bramble

Bramble was both a useful plant and a weed, depending on context (see Section 9.a.). It has probably become associated with vineyard parcels only within the last fifty years or so as it has increasingly taken over abandoned parcels within this zone. It has thus become a plant that contemporary viticulturists--who find themselves with abandoned land rather than vineyard parcels adjacent to their producing land--must deal with on a regular basis.

la barlɔtir, le barlɔ'tire, le bar'lɔte, lez ɛpne barlɔ'tire, lez ɛpne nɛre. Prunus spinosa L. Blackthorn

The situation of blackthorn and its association with vineyard parcels is similar to that of bramble. Following the massive abandonment of land within the vineyard zone during the last fifty to eighty years or so, blackthorn has expanded rapidly into these areas. It was, however, already present in naturally brushy areas (la brusaje, see Chpt. 9) within the vineyard zone where microrelief permitted little improvement.

lo bjʔblã̃. Verbascum thapsus L. Great mullein

(See section 5.b.)

d ɛrba. Herbaceous, named or unnamed phanerogams

Used polysemously in at least three senses, d ɛrba is associated with la vno as the group of small, weedy, functionally equivalent phanerogams--whether named or unnamed in other contexts--that were removed during the summer season by hoeing (rabna/"biner") to reduce competition with the vines. The term was likewise applied to similar vegetation which grew in garden parcels (lu kurti, see Section 5.b.). In this sense, d ɛrba was nearly equivalent to la krwe ɛrba ("weed"). In a second sense, d ɛrba was used to refer to any herbaceous plant that was not more specifically named. In this sense, it could be considered a "residual category" (Hunn 1977:57). In a third sense, d ɛrba was sometimes extended to all, or most, vegetation with fodder and/or forage value in hayfields (see Chpt. 8) and pastureland (see Chpt. 10) respectively. This usage was clearly motivated, like "weed" was in the first sense, by an appreciation of functional equivalency within a set of otherwise dissimilar taxa. However, in this sense, the positive aspects of the taxa as a group were noted rather than the negative ones.

la farnʔza, d ɛrba farnʔza, lo tsu gra. Amaranthus blitoides Wats. and Chenopodium album L. Prostrate amaranth and Fat hen

(See Section 5.b.)

lo fazu. Phaseolus vulgaris L. Common bean

(See Section 5.a.)

la kwɛrda. Cucurbita sp. Squash

(See Section 5.a.)

lo marabu. Stipa pennata L. Plumed needlegrass (localized)

Earlier this century, a stand of plumed needlegrass could be found growing along the southern ridge of the "la Gorge aux Pigeons" on the northern margin of the main body of the Alluetain vineyard. This plant enjoyed a wide reputation as the finest of decorative "flowers" when dried, and was regularly sought at this single site to be used as a household ornamental by Alluetains and their neighbors. During the fieldwork period, no trace of this site was found, but descriptions offered by elderly Alluetains and cognate terms employed by neighboring communities cited in published accounts (Gave 1908:9; Meilleur 1985:61) confirm the determination.

lo platano. Platanus orientalis L. Plane tree (localized)

Several of the contemporary public areas within the small town of Brides-les-Bains, adjacent to the Alluetain vineyards, as well as several squares in Moutiers, have been planted to plane trees. Some of these trees are probably over 100 years old. Alluetain viticulturists, passing through Brides to get to their vineyards, or in some cases working at the thermal station as wage laborers, became familiar with these introduced trees. Plane trees had little or no other cultural significance to the peasant way of life.

lo poblo. Populus nigra L. and CV. Italica. Poplar and Italian poplar (localized)

Spontaneous poplar was highly localized in a few wetter areas along the Doron edge near the thermal station of Brides-les-Bains. Little interest was shown toward these trees, though Alluetains had little trouble identifying them. However, Italian poplar, planted here and there around Brides--and known by the same term--was also found planted at several sites within the territory of Les Allues. Though elderly people were not sure why these trees had been planted

(several men said they produced a light wood for cases, etc.), a few can still be found today along roads and property margins or in deciduous coppice that has expanded as properties were abandoned.

la rãpna. Valerianella locusta (L.) Laterrade. Cornsalad

Cornsalad appears to have been a common wild plant of the vineyard zone. Some families gathered it in early spring from their vineyard parcels and consumed it fresh as a first green salad (see Section 5.a.; la salada(a) and la salada(b)).

la rwela. Convolvulus arvensis L. Field bindweed

(See Section 4.b.)

lo tsatɛne, lo marɔne. Castanea sativa Mill. Sweet chestnut
(localized)

Several sweet chestnut trees could be found earlier this century around "la Noyeray," a private property to the south and perhaps 250 meters upriver from Brides on the right bank of the Doron de Bozel. This place (lo ma/"le lieu-dit") was regularly marauded by children from neighboring communes, including Les Allues. Chestnuts (the larger ones sometimes called lu marõ, thus lo marɔne/"le marronnier") were grilled and eaten hot or with milk poured over them.

NOTES: CHAPTER 7

1. During the summer of 1984, I had responsibility for Vanoise National Park Research contract #6/84 awarded to Jean-Pierre Tournier: "Aspects appliqués, conservation, étude de marché: la myrtille en Vanoise." Mr. Tournier, author of a master's thesis, "La Vigne et le Vin en Savoie," Institut de Géographie Alpine, Université de Grenoble, accompanied me on several occasions in my investigation of the Tarentaise vineyard. His knowlege of Savoyard viticulture was helpful in sorting out the complexities of the canton of Bozel vineyard.

CHAPTER 8

The Alluetain Hayfield Sector

Even though it has been characterized in the past as the "soul" of Savoyard agriculture (Costa 1773:235) and more recently, as the essential link between the agricultural and pastoral sectors of the traditional economy (Collomb & Raulin 1979:134, 169fn21), there are few detailed descriptions of the hayfield sector in Savoie. Most scholarly work relevant to the pastoral economy has stressed cheese and butter production, stock raising and the various systems of summer pasturing of cows, sheep and goats which developed in the high mountains to ensure this production (see e.g. Arbos 1922,; Briot 1896; Rey 1930; see Chpt. 10). Little has been written specifically about the land types and the organizational strategies which produced the hay necessary to overwinter these animals in Savoie (but see Tracq 1973), or about the largely unrelated gathering activities which took place in the hayfields and in the several folk biotopes also found within the hayfield zone (but see Meilleur 1985). Yet, haying probably represented the single most time consuming summer pursuit and produced, in the form of dry fodder, the greatest vegetal quantities of all the traditional agricultural sectors of the economy. However, this lack of attention is perhaps not so remarkable when the overtly simple nature of haying and the fact that little hay was marketed are

considered. Gathering has infrequently been studied in relation to either the agricultural or the pastoral sectors of the economy (but see Chabert 1897; Constantin & Gave 1908; Kruker & Niederer 1982; Meilleur 1982, 1983, 1985; Niederer 1980). Certain aspects of the hayfield sector have, however, been fairly well described: there has been considerable recent attention given to the irrigation systems which developed in the hayfields in various regions of Savoie (Le Monde Alpin et Rhodanien (3-4), in press; see also Godefroy 1941; Onde 1940; Perouse 1911:78+).

This chapter will examine in some detail the physical and temporal organization of the hayfield sector and the related folk ecological knowledge as they fit into traditional economic life and land use in Les Allues. In this commune, as elsewhere in the northern Alps, significant surface areas were maintained and managed as hayfields (lu pra/"les prés"). During the traditional period, these lands were annually mowed to ensure the production of hay and therefore the stabling each year--over a six or seven month winter--of at times well over 2000 large domesticated animals (see Table 10a). The high mountain resource use pattern observed by Burns in Queyras (1963:137) and by Netting in Valais (1972:134), which associated stepped haying stations, fragmented holdings and a highly mobile work force, was also present in Les Allues. But here the haying activities, which occurred within a roughly 900m to 1700m zone, were also structured in a way in which--as in the cultivated field and the vineyard sectors--individual production was subsumed to group control,

even while maintaining the principle of private property. It will become clear that the several folk biotopes associated with the hayfield sector (lo pra especially, but also la mojasir, lo rɔtire and lo sɛtʃy...see infra) were also regularly visited for activities not directly related to haying: gathering as well as early spring and late fall pasturing of domesticated animals were also basic functional aspects of the hayfield sector. The high numbers of folk botanical taxa associated with these hayfield zone biotopes (see Tables 8a, 8b, 8c, 8d) reflect not only the intense interest directed toward their fodder producing potential but this extended pattern of use as well.

The hayfield zone folk biotopes and their folk phytocoenoses

While hayfield parcels (lu pra) constituted the dominant folk biotope of the hayfield zone in Les Allues, mainly because of differences in drainage and microrelief at least three secondary folk biotopes were also found within this same zone: la mojasir, a wetland type, lo rɔtire, a marshy land type much wetter than la mojasir, and lo sɛtʃy, a dry land type. All four folk biotopes were functionally defined within this zone primarily by relation to their differential ability to produce dry fodder (lo fɛ̃/"le foin"/"hay") for consumption by domesticated animals in winter and to a lesser extent by their gatherable plant (and animal) producing and fall pasturing potential. Each was also conceptually defined by folk ecological considerations related to natural floristic configuration and an appreciation of the presence or absence of soil moisture. In fact, only the extreme wet or dry microhabitats within the hayfield zone were named. Several

less extreme differences in degree of wetness or dryness in lu pra were noted, but were not linguistically labeled (e.g. wetter pra were known to produce more second hay, see infra). As in all other folk biotopes, these two aspects of the hayfield zone folk biotopes--function and ecological physiognomy--were clearly closely related. Those vegetational components of the hayfield biotopes that were selected for cultural recognition and naming, and which took the form of taxa either positively perceived as producing "good" hay, gatherable products and fall pasture or negatively perceived as producing "bad" hay or as somehow interfering with haying and pasturing, were the same taxa which together formed the folk phytocoenoses of these various folk biotopes. Tables 8a, b, c and d respectively reproduce the folk phytocoenoses of the folk biotopes lo pra, la mojasir, lo rɔtire, and lo sɛtʃy (see the Dictionary Entries following, in Section 8.a., for detailed descriptions of each taxon).

Table 8a: The Folk Phytocoenosis of Lo Pra

l ani/Carum carvi L./Caraway
lo bababɔr/Tragopogon pratensis L./Goatsbeard
la bitʃ'wano/Arnica montana L./Arnica (in leaf only)
la biz/Briza media L./Quaking grass
lo bove/ Colchicum autumnale L./Meadow saffron (spring seed pod form)
la dzã'xãna/Gentiana lutea L./Great yellow gentian
l ɛrba di ma'lɛzo/Geranium sylvaticum L./Wood cranesbill
l ɛrba epja/Graminae ssp./The larger Grasses
l ɛrba rɔdz/Onobrychis viciifolia Scop./Saintfoin
lo fmɛt/Lycoperdon ssp./Puffball
la gɔra/Salix caprea L./Goat willow
la kã'pãna/Campanula ssp./(the larger) Bellflowers
la kãpa'nɛta/Campanula ssp./(the smaller) Bellflowers
la karɛla/Festuca paniculata (L.) Sch. & Th./ Golden fescue
lo kɔ̃flabo/Gentiana acaulis L./Koch's gentian

Table 8a: Continued

la kokwara/Heracleum sphondylium L./Hogweed
lo kuku/Primula veris L./Cowslip
lo laetsʒ̃/Sonchus spp. + Taraxacum officinale Web/Sow-thistles + Dandelion
la lɛ̃gabwe/Polygonum bistorta L./Bistort
la mã̂ di bɔ̃dʒ/la mã̂ di dʒablo/Orchidaceae ssp./the common, showy Orchids with palmate roots
la margɔ'rita/Leucanthemum vulgare Lam./Ox-eye daisy
lo milpɛrtɥi/Hypericum ssp./St. John's Wort
lez otə'nɛ̃se/Colchicum autumnale L./Meadow saffron (in fall flower form)
lo paeʒo/Lathyrus ssp./Vetchlings
le pɛ'zɛte sar'vadze/Vicia ssp./(wild) Vetches
la primɔvɛr/Primula vulgaris Huds./Primrose
la salada/Taraxacum officinale Web./Dandelion (in leaf only)
lo sãti'gɔla/Rumex ssp./(the small-leaved) Docks and Sorrels
la tartariz/Rhinanthus alectorolophus (Scop.) Poll./Greater yellow rattle
lo trijole (sar'vadzo)/Trifolium pratense L./Red clover
le tsa'pɛle/Pulsatilla alpina (L.) Del. subsp. sulphurea (DC.) A.&G./Yellow alpine pasque flower
lo tsardʒ̃/Carduus ssp., Centaurea ssp., Cirsium ssp./ Thistles, Star-thistles and Knapweeds
la tsar'dɔsa/Carlina acaulis L./Stemless carline thistle
la tsɛv'rɛla/Laserpitium latifolium L./Sermontain
lo vraro/Veratrum album L./False helleborine

Table 8b: The Folk Phytocoenosis of La Mojasir (in the hayfield zone)

lo boke dzɔno/Tussilago farfara L./Coltsfoot (in flower)
l ɛrba epja/Graminae ssp./The larger Grasses
la jets/Carex ssp.+Juncus ssp./Sedges and Rushes
la kwa də rna/Equisetum arvense L./Common horsetail
la mã̂ di bɔ̃dʒ/la mã̂ di dʒablo/Orchidaceae ssp./the common, showy Orchids with palmate roots
la mɛ̃ta sarvadz/Mentha longifolia (L.) Huds./Horse mint
le pate/Petasites hybridus (L.) G., M.&Sch. and Tussilago farfara L./Butterbur and Coltsfoot (in leaf only)
la rɛn de pre/Filipendula ulmaria (L.) Maxim./Meadowsweet

Table 8c: The Folk Phytocoenosis of Lo Rɔtire
(in the hayfield zone)

lo butɔ̃ d ɔr/Trollius europaeus L./Globe flower
la jets/Carex ssp.+Juncus ssp./Sedges and Rushes
lo ke/Ranunculus aconitifolius L./White bachelor's buttons
lo krɛsâ/Veronica beccabunga L./Brooklime
la kwa dɔ rna/Equisetum arvense L./Common horsetail
la pʃir d ano/Primula farinosa L./Birdseye primrose
la rɛn de pre/Filipendula ulmaria (L.) Maxim./Meadowsweet

Table 8d: The Folk Phytocoenosis of Lo Sɛtʃy
(in the hayfield zone)

la blã'tsɛta/Graminae ssp./(medium to short) Grasses
l ɛrba dɔ la fwir/Hieracium pilosella L./Mouse-ear hawkweed
la karɛla/Festuca paniculata (L.) Sch.&Th./Golden fescue
le pate dɔ tsɛt/Antennaria dioica (L.) Gaert./Mountain everlasting
lo prɔ̃ pɔθe/Thymus serphyllum L./Wild thyme
lo tsny/Nardus stricta L./Mat grass

Lu pra/"les prés"/"the hayfields"

The hayfields (lu pra) of Les Allues, as in other high mountain communes of Savoie, were generally located outside, or beyond, the cultivated fields, grosso modo, between the hamlets and the "montagnettes" (see Chpt. 10), though also between some of the more distantly dispersed hamlets. Like the cultivated fields with which adjacent hayed parcels sometimes rotated (see Chpt. 4), the mostly privately owned and highly fragmented hayfields in Les Allues were grouped into concentrated blocks. Where these blocks were particularly expansive, the term la pravɛri/"prairie" might be applied. However, unlike the cultivated fields which cut horizontally across the fall-line and were mostly rectangular, hayfields were more irregular in shape with many running lengthwise vertically to the fall-line. Nevertheless,

hayfields, like the cultivated fields, were permanently bounded by at least four slate or other stone markers, one or more being placed on each of the four sides. Straight branches of goat willow--which sometimes sprouted into small trees--could also be found planted at parcel corners early in this century. These branches protruded beyond the mostly grassy, leguminous and composite hayfield flora to ensure that the limits of the parcels could be found at the moments the fields were to be mowed. Some of the hayfields in the lower hamlets were also planted with apple and pear trees. In terms of mowing, these parcels were treated much as would parcels without fruit trees and were usually called simply lu pra. However, where fruit trees were concentrated into many contiguous parcels, these emplacements were called lu verdze (hayfield-orchards), a distinct folk biotope (see Chpt. 6).

Gensac (1972:61) groups the vegetation of most Alluetain hayfields into the phytosociological association Trisetum flavescentis. It is interesting to note that the six species cited by Gensac as dominant and characteristic of this association--Trisetum flavescens (L.) Beauv., Polygonum bistorta L., Agrostis capillaris L., Campanula rhomboidalis L., Rumex arifolius All., and Geranium sylvaticum L.--were all noted to a greater or lesser degree by Alluetains.[1] All are variously included within the semantic fields of five of the named Alluetain folk botanical taxa commonly associated with hayfields (see Briot 1896:153+; Delpech & Denudt 1978; Jacquot et al. 1958; Rey 1930:16+ for several more detailed analyses of the

vegetational configurations of hay meadows and the chemical composition of hay at several stations in the northern Alps).

Unlike many high altitude communes elsewhere in Savoie and in the northern Alps which irrigated all or part of their hayfields (Godefroy 1941; Netting 1972; Niederer 1980:39+; Onde 1940), the Alluetain hayfields were not regularly irrigated nor equipped to be irrigated with canals, etc. Nevertheless, in severely dry years water might be crudely diverted from small watercourses onto nearby hayfields before the second cut of hay (lo rekɛr) began. Several neighboring communes in the canton of Bozel did, however, regularly irrigate, one of which, La Perrière, even drew water into a sophisticated hydraulic system from the Doron des Allues (see also ADS, L556). All evidence also seems to indicate that "foin sauvage"/"wild hay" (Kruker & Niederer 1982; Niederer 1980) was not cut on the more distant and inaccessible communally owned properties (though it was cut in the neighboring commune of St. Martin de Belleville...see also Messines ibid.:46+ and Rey 1930:21-22 who cite several communes in Savoie where such hay was traditionally cut). The privately owned, non-irrigated hay parcels were thus the primary source of winter fodder in Les Allues.

I have found only three estimates of hayed surfaces in the commune (in the various agricultural statistics that were surveyed, hayfield surfaces were more commonly embedded in pastured surface totals). The latter two of these figures, 627 ha. of "prés...à faucher" in 1862 (or 7.4% of total surface of approximately 8500 ha....ADS,27M11) and 566 ha. of "prés et herbages" in 1900 (or 6.7% of

total surface...ADS, 27M36), would appear to be legitimate estimates of hayfield surfaces. A total of 287 ha. of "prés naturels" in 1802 (or 3.4% of total communal surface...ADS, L556) is probably a significant underestimation of hayed surfaces in a year when population was even higher than in 1862 (see Table 2a). According to Messines (ibid.:46), who derived his figures from the highly accurate Cadastre Sarde, hayfields reached 9% of total surface in the canton of Bozel in the early 18th century.

Haying ordinarily began in the lower hamlets in the first days of July, but even in the higher hamlets (above 1300m) mowing was usually underway by the 15th of the month. The commencement date fluctuated somewhat from year to year in each "quarter" or hamlet depending on the state of maturation of the vegetation any given season. But well before mowing began in July, a few days of work, usually in June, had already been allotted to the hayfields. The eradication or reduction of several unwanted plant species, notably great yellow gentian and false helleborine, was the primary object of this effort. These two species, apart from being rejected as fodder by the domesticated animals, were difficult to mow when in adult form because of their hard stalks. Before the vegetation had mounted very high in springtime, individual plants were identified and removed by cutting with a scythe at ground level.

Organization of hay production: the "bans"

There was an implicit awareness among the cultivators that hay (lo fẽ) should be cut at the moment most grass florets began to open,

or even slightly before. To ensure, among other things, that the required labor force was constantly present at this moment, as the vegetation progressively matured at higher and higher elevations, and at differentially exposed sites, this consciousness was codified in Les Allues into several intra-communal systems of linked haying stations or "bans" (lu bã̃). While it is not clear whether these systems were organized traditionally at the level of hamlet or quarter, the order of cutting (there were several tens of haying stations or bans in each system), the date each ban was opened to haying and the number of days allotted to mowing at each were prescribed by common accord of the property owners involved. Each year, after evaluating the actual state of the vegetation, the heads of households of the probably five or six quarter haying systems--acting through "les hommes du quartier" (luz ɔmo di kartʃe/"the men of the quarter"...see Chpt. 2)--set the dates for beginning the cut and the dates that all remaining bans would be opened to mowing. These ordinances were then posted and enforced by the "gardes champêtres" of the commune. The last posting of haying bans apparently took place just before World War I.

In concrete terms, since each ban or haying station was composed of many separately owned contiguous parcels, and only one or two days was allotted at each stop before the next ban was opened to haying, the owners of the parcels at each ban mowed their hay at the same time, then moved in unison to the next ban, and so on throughout the haying season. According to elderly Alluetians, this ensured against

the trampling of hay which would result from uncontrolled entry into the unfenced hayfields--most of which were not provided with direct access by roads or paths--and from the loss of hay by unscrupulous neighbors at times when one might be engaged elsewhere.

Such haying bans appear to be very old in the region. Article Five of the Alluetain Municipal Code of 1359 for example, "fixed the 'bans' or fines to be payed for all infractions committed in the forest or in (private) properties" (Coutem 1883:113). While this reference does not specifically mention haying or hayfields, a similar 18th century (1755-56) code from the "Quarter of Villemartin," in the neighboring commune of Bozel, does: articles..."13, 14, 15, 16, 17-20, 28 fixed the days before which one could not cut in each designated prairie under penalty of a two 'pound' fine" (Acad. de la Val d'Isère 1890:486).

Haying usually began within the first ten days of July in all haying systems. Once begun, it generally continued uninterrupted every day except Sunday until mid to late August when the mowers from the lower hamlets usually moved for four or five days to the cultivated fields to harvest the winter rye (those from the higher hamlets would generally harvest rye after the first hay cut was completed). Once finished there, these mowers returned to the hayfields, ordinarily finishing the first cut by the end of the month. Almost all people of working age were mobilized for haying and both men and women mowed--with scythes (le dej...see Collomb & Raulin ibid.:135 for a description of this and the other haying tools). But before haying

began in the bans, most people mowed the vegetation at the edges of their hay parcels adjacent to roads and paths in anticipation of the movement of large numbers of people, animals and vehicles during the summer months. Depending on the posted dates in the different hamlets or quarters, all (or most) people implicated in a given system would arrive on the morning that the first station was to be cut and the hay season would then be considered underway. Those people whose hay parcels were toward the outside of the ban would cut paths through their parcels creating the access necessary to those fields located toward the center. But before most cutting actually started, the limits of the individually owned parcels would be stepped off. This operation, as one might imagine, was closely followed by all owners to ensure against overcutting by neighbors. Mowing then began "en masse" from the uphill left side margins (looking downslope) of the parcels down, in repeated cuts. If labor was available, perhaps as many as two or three people might be found mowing any given parcel at a given time in staggered rows. Someone--usually children--generally followed close behind the mower(s) spreading the cut hay evenly on the ground and removing several unwanted vegetal species, especially great yellow gentian, hogweed, horsetail, thistles, sermontain, false helleborine, etc. Perhaps a day or two after cutting, someone from each family would return to flip the hay with a rake (lo raxɛl) to ensure complete drying. A day or two later, when dry, it would be rolled with ropes into 40 to 60 kg bundles (lo fe/"le fagot"), loaded onto elongated wooden sleds (la lwedz a fɛ) pulled by mules, and transported to the

barns. Most hay was brought directly to the barns in the hamlets. However, some families did stock some hay in barns at the "montagnettes." This hay would usually be brought to the hamlets in early winter.

Each ban was allotted one, or if especially big, two days of haying before the mowers were obliged to move to the next station. The ability of any family to finish cutting at a given ban was determined mostly by the surface area of hayfields it owned in this ban and by its available labor force. Sometimes people with large holdings in a particular ban were unable to finish their cut before they were obliged to move to the next station. Upon arrival in a ban where their holdings could be easily mowed within the allotted time, they would rapidly return to finish mowing at the earlier station before the group moved again. Clearly, if familial holdings were highly unequal from ban to ban, this created significant problems in supplying labor at the optimum moment for cutting, in scheduling use of the hay sled and the mule, in watching over their holdings, etc. There was thus a well expressed preference on the part of families to possess balanced holdings in each of the many bans, and to achieve this end, exchanges--usually verbal--were commonly practiced. Such problems of imbalance were drastically accentuated if the two adult family members each had inherited parcels in haying systems some distance apart (e.g., they were from distantly separated hamlets). If holdings in another system were small, it might be considered a pleasure to work for a day or two in another quarter or hamlet, thus

giving the "outsiders" a chance to visit with less often seen community members or even family members of one or the other of the spouses. However, if such holdings were important, some arrangement had to be made to reduce travel time and dispersal of several key components of the means of production (tools, traction animals, human labor). In general, verbal or perhaps even notarized exchanges were made with families in similar but inverse situations. Sales were sometimes practiced but did not appear to be preferred. If one of the spouses' holdings were superior to those of the other, this would clearly influence the choice of hamlet of residence after marriage.

A typical day during the haying season early this century started for an average Alluetain family at 4:30 or 5 a.m. with coffee and bread. Shortly afterward, husband and wife walked to the hayfields and began working. If they were finished or well advanced with mowing in the ban that was actually being cut, one or both might return to a previously cut ban and work at flipping the hay or bringing the dryed hay to the barn. Around 8 or 9 a.m., vegetable soup that was brought along to the fields was consumed with bread and "tomme" cheese (see Chpt. 10; Appendix 2: A Nutritional Evaluation of Alluetain Foods). The woman worked with the man until 10:30 or 11 a.m., then returned to the house to prepare the main meal and to feed the mule if it was not being used in the fields, etc. Depending on relative wealth, various types of conserved meats such as sausage, salt pork, ham, etc., could be added to the corn meal summer staple of polenta, though most elderly people claimed that meat was consumed only once or at most

twice a week early this century. This might be followed by cheese, a salad, and perhaps a fruit. If the couple was working far from the house, the meal would be carried there and the family would eat together in the company of friends and relatives. If closer in, the man would return to eat at home. After a short rest either in the field or at home, both adults would work again until 5 p.m. or so when they would again rest and have a bit of bread and cheese or whatever might be left over from the midday meal. The couple would work together until 8 p.m. or so when the woman would return to the house to prepare a light evening meal of soup, bread and cheese, etc. Her husband would join her around 9 or 10 p.m. Wine, cider or water would be drunk during the day depending on the fortune and/or preference of the different people.

By the end of August, the last, though not always the highest of the bans, had been cut in all the quarters or hamlets of the valley (in the haying system of the hamlet of Mussillon earlier this century, the last bans were located on an east-facing slope at least 100 meters in elevation below bans with full south exposure that had been mowed earlier). Because of the time allotted to the rye harvest in the lower hamlets, and the later start in the higher ones, most elderly Alluetains estimated that 40 days or so were attributed to this first hay cut.

As September came, and even as the work load diversified to the rye harvest in the upper hamlets, to the pulse, barley and oat harvest

in all hamlets, to plowing and sowing rye fields, to gathering precocious fruit, to returning animals to the "montagnettes" and restarting individual cheese-making (see Chpt. 10), etc., Alluetains still found time to make a second cut of hay (lo rɛkɔr/"le refoin") in many of the same fields they had mowed earlier (the shorter vegetation found at higher elevations was called lo rɛkɔrdʒ̃). Fields with higher soil moisture were recognized as producing more hay and were preferred for this cut. The quantities of hay produced by this September mowing were considerably less than those produced in the first cut. In 1894, for example, the average return per hectare of 34.55 quintals (3455 kg) in the canton of Bozel was composed of 21.55 qtl. in the first cut and 13 qtl. in the second, the latter cut thus being approximately 40% as productive as the first (ADS, 27M28). The degree of community organization and the effort expended on this cut depended for all families on the success of each in meeting its fodder needs in the first cut. From year to year such success was mostly related to climate and of course, to each's hayfield holdings.

Quantities produced and the disposition of the hay

It has been difficult to assess the amounts of hay produced by individual families in Les Allues. Direct measurement was not possible, agricultural statistics do not provide such information, and estimates by elderly Alluetains were inconsistent. However, elderly people regularly proposed that amassing 400 to 500 bundles of hay (at approximately 50 kg/bundle) was an ideal amount that each family strove for to feel comfortable in overwintering their livestock

holdings (50 kg x 450 bundles = approximately 22,500 kg or 22 tons of hay). In two instances, people also claimed that averaging 10 bundles a day during the first cut period was a very good rate of production (10 bundles x 40 days = 400/bundles/season). Despite this apparent consensus, when these same people were asked to detail the number of animals overwintered during the seasons they had amassed such amounts, or to estimate the hay quantities necessary to overwinter individual animals of the different domesticated species and age classes (cows, heifers, sheep, goats, mule...see Chpt. 10), their answers fluctuated wildly. There was agreement, however, that cows and near adult heifers consumed 3 times what sheep and goats consumed and that the mule consumed 2 to 3 times that of the cow (since the mule had to be fed all year round; the bovines, ovines and caprines needed only six months of dry fodder a year, during the 180 day stabling period). Using a figure provided by Bozon (1968:361) of 1500 kg to 2000 kg of hay needed to overwinter a milk cow in the neighboring and economically similar Haute Maurienne, it has been possible to calculate a hypothetical stock holding in Les Allues based on the 400-500 hay bundle estimate of the elderly Alluetains. Though highly speculative, the Bozon figure (1750 kg average to overwinter a milk cow) would allow an Alluetain family amassing the ideal amount of 22,500 kg (or 450 bundles at 50 kg per bundle) to overwinter 12.85 cows alone, or approximately 3 cows, 4 heifers, 1 mule and 10 sheep and goats. If one added to this hay figure the considerable quantities of leafy forage amassed for the sheep and goats (le dzavęle, see Chpt. 9),

several more of these animals might potentially be overwintered. Table 10a, which provides a highly abbreviated view of Alluetain animal holdings, would suggest that these figures are somewhat exaggerated. A much more complete ethnohistorical appraisal of traditional livestock holdings is necessary to improve upon such rough calculations, which, nevertheless, do not appear to be exceedingly far off the mark.

While these hay and livestock figures must thus be considered highly speculative gross estimates relevant to an "ideal" family, actual amounts of hay amassed and livestock overwintered certainly must have varied significantly among families depending on their fortunes. But while the amount of hay cut by each family clearly depended on its hayfield holdings and on the related number of animals each sought to overwinter, it also depended on the climate--especially annual precipitation--which was said by elderly Alluetains to strongly condition hay productivity any given year. This latter variable would seem to be implicated in what appears to be a highly fluctuating pattern of annual hay production and average production per hectare, as suggested by Table 8e.

Table 8e: Alluetain Gross Annual Hay Production and Estimated Production per ha.

Annual hay production in Les Allues

Year	Amount	Source	Est. prod. per ha. (based on 600 ha. of Alluetain hayfields... see p. 269, supra)
1771	10,000 qtl	ADS C579	17 qtl/ha
1818	24,000 qtl	ADS 1FS594	40 qtl/ha
1819	19,000 qtl	ADS 1FS594	32 qtl/ha
1822	3,500 qtl	ADS 1FS594	6 qtl/ha

Production per hectare regionally

Year	Amount	Where	Source
1862	15 qtl/ha	Les Allues	ADS 27M11
1882	30 qtl/ha	Arr. de Moutiers	Cadoret 1929:84
1887	31.24 qtl/ha	Canton de Bozel	ADS 27M20 (23.24 qtl/1st cut, 9 qtl/2nd cut)
1894	34.55 qtl/ha	Canton de Bozel	ADS 27M28
1894	26.95 qtl/ha	Canton de Moutiers	ADS 27M28

It is not clear how each family reacted to this annually fluctuating hay productivity, but in dryer years the lesser quality forage-producing biotopes (*la mojasir*, *lo rətire*) would be mowed and more energy would be expended on cutting the second hay. If quantities in the first cut were drastically down because of drought, hayfields close to small watercourses might be crudely irrigated after this cut to improve the quality and quantity of the second cut.

Sending animals to other families within the commune or even outside the commune for overwintering was also a possible response to more extreme conditions, but this appeared to occur in Les Allues only in exceptionally dry years.[2] In such years, animals might have to be sold or butchered before the end of winter to reduce the pressure on the available stocks of hay. But such responses appeared to be infrequent. It would seem most reasonable to conclude that the number of animals overwintered any given year by an average Alluetian family was actually significantly below the number that could be overwintered in an average year of hay productivity. In fact, elderly Alluetains seemed to confirm this in stating that generally more hay was amassed each year than could be consumed over the winter. In good years, some of this hay was carried over to the following winter, especially if climatic conditions the following summer indicated that hay production might be down. The limiting factor which seemed to dominate calculations of numbers of animals to be overwintered thus appears to be the one or several bad hay years which would occur over an undetermined extended period of mostly average production (see 1822, for example, in Table 8e.). The risk of losing all or most of an animal holding in an exceedingly poor year--and the hardship that would result in attempting to rebuild an animal holding in a mostly non-moneyed economy--seemed to dampen most attempts to overwinter greater numbers of animals and appeared to result in numbers of animals overwintered averaging well below what could potentially be overwintered in a year of normal hay productivity. Though speculative, it is

possible that such an explanation could account for the discrepancy found between the numbers of animals that could have been overwintered given the "ideal" quantities of hay said to be amassed in Les Allues and the numbers of animals actually held by each family as suggested in Table 10a.

In the recollection of the oldest Alluetains, hay production was always consumed within the commune by the producing families. In lean years, some families might be helped by relatives or friends, or, much more rarely, hay might be bought from families producing surpluses. Hay was, of course, primarily used as dry fodder for overwintering domesticated animals. However, it was also traditionally used as bedding material for both humans and animals. The broken flower tops (le pɔxe, le pɔθe), which formed a dust-like residue on the barn floorboards, were infused in water and the liquid administered to ailing animals (see also Constantin & Desormaux 1910:335). On occasion, when attempting to rapidly convert a cultivated field to a hayfield, an Alluetian might sow this flower top residue, rich in grass seed, directly on the abandoned cultivated field.

Several ethnohistorical examples were found that indicated that small quantities of hay had either been sold or seized in Les Allues during periods of armed conflict and military occupation. On the 24th of October, 1792, at least two acts were drawn up by individuals selling a total of 102 quintals of hay "aux troupes piédmontaises" (AC, Series D. N 4, p. 22). On 7 Pluviose (Jan.-Feb.), 1793, the commune was ordered to furnish "40 quintaux de foin" to the

(presumably Republican) army (AC, Series D. N 1, p. 80). In the Middle Tarentaise commune of Aime, hay sales represented a small part of total community revenues in 1756 (ADS, C1426). It is possible that Alluetain families sure of winter hay surpluses also sold small amounts of hay at the Moutiers market or perhaps even within the commune.

Activities unrelated to haying in lu pra

Alluetians engaged in at least two economic pursuits in the hayfields that were not related to haying: gathering and the pasturing of domesticated animals. While both were practiced in several other folk biotopes, gathering especially was particularly relevant in the hayfields because of this biotope's proximity to the habitation zone. In very early spring, the floristic diversity of the hayfields was exploited by women who engaged in numerous short gathering forays. The object of this effort was mostly to provide fresh greens to vary and to improve the winter diet dominated by conserved foods (see Meilleur 1982). Several of the more important wild alimentary plants gathered were found primarily in lu pra (bistort, docks and sorrels, dandelion, goatsbeard, etc.). Several plants were also gathered in hayfields at this time as well as later in the season for medicinal use (caraway, St. John's worts, etc.), to smoke (arnica leaves), or to be used as green fodder for the rabbits and/or guinea pigs kept by some families for food (hogweed, sow-thistles and dandelion). Before the vegetation was high enough for trampling to be viewed very seriously by adults, children also

regularly entered the fields to procure snails Helix pomatia/lu bu) which were often sold in Moutiers. Fresh green treats like goatsbeard were eaten and other locally recognized taxa were transformed into toys (Koch's gentian, cowslip, etc.). In fall, the only traditionally used mushroom, the puffball, might be gathered as needed for medicinal purposes.

Individual hayfield parcels were also variously used to pasture domesticated animals for a few days before these animals were taken to the "montagnettes" in late May (see Chpt. 10). While Alluetains stated they would have preferred to keep animals away from all their hay parcels in spring to save such properties exclusively for later haying--and some did send their livestock directly to the commons (lu kmɔ̃) at the end of winter stabling--many families also grazed their cows in one or two of their lesser quality hayfields close-in to the hamlets. This allowed these owners to keep a close eye on the somewhat shaky-legged and skittish bovines for the first few days after they had been brought out from the stable and before they were moved to the "montagnette." This transitional period was short and the impact on the hayfields was small. In October, these same animals were moved in the opposite direction to the hamlets from the "montagnettes" where they had been kept for two or three weeks after the termination of the three month summer "alpage" season (11 June - 14 Sept.). Once in the hamlets, the livestock, which was now brought into the stables each night, was grazed during the day in the now mowed hayfields (1st or 2nd week in October until sometime in

November). Each family rotated its animals among its privately owned hayfields to ensure that as many as possible would be fertilized. Concentrations of manure would be dispersed over all corners of the fields. While free passage across neighboring properties was tolerated in fall, common pasturage ("vaine pâture") does not appear to have been traditionally practiced in Alluetain hayfields as it was in other regions of Savoie (see e.g. Meiller 1985:53).

Other hayfield sector folk biotopes: la mojasir, la rɔtire, lo sɛtʃy

Because of the microrelief and drainage differences within the hayfield zone, some areas were considerably wetter or dryer than the average hayfield (lo pra). Such differences in topsoil humidity were of course reflected in the vegetation. In recognizing the more extreme degrees of presence or absence of water, Alluetains employed three folk biotopes, each characterized by a particular folk phytocoenosis (see supra). Two were wet land types (la mojasir, lo rɔtire) and the third (lo sɛtʃy) was a dry land type. While they could all be found elsewhere in the commune, and especially within the pasturable zone where animals were grazed in summer (see Chpt. 10), their relevance was accentuated when they were found within the intensively managed and less expansive hayfield zone. Several functional differences were recognized among them.

La mojasir/"terrain mouillé"/"moderate wetland"

La mojasir was a folk biotope characterized by a moderately wet topsoil which was dominated floristically by a mix of large grasses

(l ɛrba epja) and sedges and rushes (la jets, see Table 8b). This land type, often located in depressions with poor drainage, was interspersed fairly extensively within the better drained hayfields, though it rarely constituted entire parcels. The mostly tough and unpalatable vegetation predominant in la mojasir was disdained by the domesticated animals. Whether these wet areas would be mowed any given year depended on the amount and quality of hayfields available to the various owners and in general to the success of hay production that same year in the better forage-producing parcels. Clearly le mojasirɛ were mowed to a greater extent during drought years to compensate for the reduction in more desirable fodder. In such cases, fodder from la mojasir was given first to the secondary livestock (sheep, goats, heifers) and withheld as long as possible from the mules and especially the milk cows. Salt would often be added to the toughest vegetation to make it more savory. In ordinary years, le mojasirɛ would be less extensively mowed; that vegetation which was cut was used mainly as litter for the overwintered animals.

Lo rɔtire/"terrain très mouillé"/"marsh"

A second wetland folk biotope--lo rɔtire--was also found within the haying zone, though it was much more localized and where found, much less extensive. Lo rɔtire was characterized by an even greater presence of water in and on the topsoil than la mojasir. It was, to quote several Alluetains, "meaner" than la mojasir--a place where one "sank in" rather than just getting wet feet.

Lo rɔtire was a much less "useful" folk biotope for forage than la mojasir and attempts had been made by several Alluetains to drain such areas where they occurred within the confines of privately owned hay parcels. The vegetation associated with lo r tire (see Table 8c) was difficult to mow, did not dry well and furnished poor animal fodder. Nevertheless, it might be mowed in exceedingly dry years. Frogs (le rnaje/Rana temporaria) might be sought here in spring, for family consumption or more commonly, for sale.

Lo sɛtʃy/"terrain sec"/"dry land"

The term lo sɛtʃy was used to describe a folk biotope characterized by a shallow, dry topsoil and a sparse usually low-growing mostly grassy vegetation (see Table 8d). Such configurations were found here and there within the hayfield zone where the natural landscape jutted out to form knolls (lu du/"les mamelons") which were subject to greater wind and water erosion than surrounding, lower areas. In some instances, the mother rock protruded through the topsoil.

The low-growing grassy vegetation of lo sɛtʃy was extremely difficult to cut with the scythe; it was said lo sɛtʃy was best mowed in wet weather, the humidity permitting the scythe to "grab" more effectively the shorter grasses. Several xerophilous wild plant species (mouse-ear hawkweed, mountain everlasting, etc.) were gathered in this folk biotope and used for medicinal purposes. In deeper but poorer calcereous soils golden fescue might be found.

* * * *

Hay-making clearly represented a major productive sector in the Alluetain economy during the traditional period. Even though the bulk of this production was not directly consumed by humans, hay-making contributed fundamentally to the wealth and well-being of the individual Alluetain families by providing the forage necessary to overwinter the perhaps two to three thousand domesticated ungulates kept by all the households together (see Table 10a). By allowing Alluetains to overwinter all, or most, domesticated animals themselves, rather than sending the animals to be wintered outside the commune because of lack of hay (see supra, note 2), hay-making permitted the families to engage in significantly more animal husbandry than some neighboring communities with less productive and/or extensive hayfield zones. They thus benefitted from the sale, or much less commonly, the consumption of the animals produced above replacement levels (see Chpt. 10). Even though average individual animal holdings, average annual increases in holdings and replacement levels have yet to be adequately determined (or explained), most Alluetain families claimed that they were able to sell a few animals every year (usually either heifers or sheep). All evidence also suggests that overwintering large numbers of animals provided plentiful amounts of manure, undoubtedly a major contribution to productive success in many other economic sectors (especially cultivated fields, vineyards, household gardens, hemp plots). Perhaps such benefits are

the basis for the collective imposition of a strict management regimen upon the hayfield sector, which, all other things being equal, appeared to result in greater amounts of hay available to the families, thus potentially increasing their ability to overwinter livestock. While the energy investment in terms of human labor was high during the 6 to 8 weeks of near-continuous mowing in summer, the input in fertilizers and in maintenance at other times of the year was low. Up until the hayfield vegetation reached a height where trampling was thought to prejudice production, the dominant hayfield zone folk biotope (lo pra) also constituted a repository for many fresh greens and medicinals.

Dictionary Entries

Section 8.a. The folk taxa of the Alluetain hayfield zone

l ani (syn. lo sɛ̨ri). Carum carvi L. Caraway

Caraway is a common wild plant of the Alluetain hayfields and pastureland. Seed was gathered by some families in mid-summer and infused in alcohol (la gɔta/"l'eau-de-vie", see Chpt. 7). This simple preparation was then drunk as needed to combat indigestion, gas, excessive farting and related stomach pains.

lo bababɔr. Tragopogon pratensis L. Goatsbeard

This common plant of the lower hayfield zone was gathered by Alluetain children in June while still tender. The sweet, succulent interior part of the stem was consumed raw. Once in flower, the plant became woody and was no longer eaten.

la bitʃ'wano. Arnica montana L. Arnica

The common subalpine species, Arnica montana L., appears to have been split into two folk taxa by Alluetains. The term la bitʃ'wano was used to refer to the plant where it occurred in the higher hayfield zone. Here, the leaves were traditionally gathered, dried and smoked in lieu of tobacco by some people. While no positive identifications were made linking the term unequivocally with this species, all evidence indicates it refers to the vegetative form of arnica before mowing and before flowering (two elderly Alluetains claimed that la bitʃ'wano in fact referred to the leaves of l arnika ...see Section 10.a...but most others did not make this connection, insisting the two terms referred to distinct plants...but see Chabert 1897:67; Constantin & Gave 1908:10). The term l arnika was used to refer to the plant where it occurred in the higher elevation common pastureland (lo paturadzo) and where the flowers were gathered for medicinal use.

la biz (syn. la trãblət, lo pã d aeʒo). Briza media L. Quaking grass

Of no particular use other than as one of many hay and forage producing plants, quaking grass was apparently named in Les Allues--while many functionally equivalent species were not--because of its highly distinctive spikelets which "trembled" in the wind.

la blã'tsɛta. Graminae ssp. Medium to short grasses

The term la blã'tsɛta was most often employed to refer to different groupings of short grasses, difficult to mow, which grew in dry, well exposed areas with little topsoil within the hayfield zone (see lo sɛtʃy, supra). On several occasions, common grass species (Festuca ssp., Calamagrostis varia (Schrad.) Host., etc.) were keyed-out in the field (see also Chabert 1897:569). However, the term does not appear to apply to individual species, but to any group or configuration of grasses which became stunted (up to 15 cm or so) by the unfavorable growing conditions of the dryland folk biotope. It was said that la blã'tsɛta was most effectively mowed when wet, permitting the scythe to "grab" the fine stalks.

lo boke dz no. Tussilago farfara L. Coltsfoot

Coltsfoot is common to much of Alluetain territory. It is most obvious in early spring on the wetter borders (le bɔrdɔre) between the lower and mid-elevation hayfields and footpaths or roads. The bright yellow flowers were an encouraging sign that spring had arrived. They were gathered and dried, then infused as needed and the tisane drunk to combat coughing. After blossoming, the dry flowerless stems were used as "trumpets" by children. Most people did not make an association with le pate, a taxon constituted by the vegetative forms (that is, leaves) of coltsfoot and butterbur (see infra), thus splitting the Linnean species into two folk taxa.

lo bove. Colchicum autumnale L. Meadow saffon

As elsewhere in the northern Alps (see e.g., Meilleur 1985:57), the species Colchicum autumnale L. was split into two folk taxa by Alluetains. Lo bove refers to the fruit-bearing capsule form of the plant which appears in spring in the hayfields and lower pasturelands. This folk taxon was said not to make flowers. It was considered to be highly toxic, though no particular effort seemed to have been made to eliminate it. Alluetains often claimed that grazing livestock simply ate around the capsules. The autumn form of the meadow saffron--in flower--was referred to as lez otə'nĩse (see infra). No association was made between the two aspects of the Linnean species.

lo butʒ̃ d r. Trollius europaeus L. Globe flower

Globe flower was recognized as a characteristic taxon of lu rɔtire (see supra) and small watercourse edges (lu lʒ̃ də lɛva). It produced "a bad hay" (ʒ̃ move fɛ̃) and a "bad forage" (ʒ̃ move fu'radzo).

la dzã'xãna, la dzã'θãna. Gentiana lutea L. Great yellow gentian

Because of the difficulty mowing the hard, thick stalk of the mature great yellow gentian and because of the plant's poor forage value, Alluetains constantly tried to keep this perennial out of the hayfield and pasturable zones. Young stalks would be cut individually with a scythe in spring before the vegetation had mounted very high. Persistence could usually erradicate the plant from "infested" areas after several years; continued attention kept it from reinstalling itself. Less attentive hayfield owners had to remove the stalks after mowing.

Even though the great yellow gentian was negatively perceived when found growing in hayfields and in the better pasturelands, the plant had important economic value. Its root was widely sought in the "rougher" pasturable areas, either to be macerated in white wine or distilled into alcohol. The resulting products were felt to be highly effective in reducing colic and indigestion and in combatting worms in both animals and humans. 150 to 200 kg of roots were estimated to be necessary to produce 4 or 5 liters of alcohol.

A toy something like a kazoo, called lo nunu, was made from the easily separated multiple dermis stalk and a piece of membrane removed from the lower leaf of an immature plant. The height of the plants when mature any given year was said to be an index of the snowfall depth that could be expected the following year.

l ɛrba də la fwir. Hieracium pilosella L. Mouse-ear hawkweed

A characteristic plant of lo sɛtʃy within both the hayfield and pasturable zones, mouse-ear hawkweed was sought to combat diarrhea (la fwir) in both humans and livestock. A handful of the tomentose leaves was boiled in water and the resulting solution administered three times a day for several days.

l ɛrba di ma'lɛzo. Geranium sylvaticum L. Wood cranesbill

There was not a uniform use of this term ("l'herbe du malaise"/ "herb of malaise") among elderly Alluetains. Most people used it to refer to Geranium sylvaticum L. which grew abundantly (or at least became much more visible) in the second growth of hay (lo rɛkɔr/"le refoin"). It was claimed this species was disdained by the domesicated animals and especially by the bovines. Several people generlized the vocable to other species that were also rejected by livetock, most notably to Ononis repens L. and Colchicum autumnale L.

l ɛrba epja. Graminae ssp. The larger grasses

The taxon l ɛrba epja ("l'herbe à l'épi"/"the herb with the spike") seems to come closest to corresponding in Les Allues to what Berlin et al. (1974:26) call "a folk botanical life-form." The term was regularly applied to the group of common larger grasses (and to individual plants), especially to those which dominated in the hayfields (e.g. Agrostis capillaris L., Dactylis glomerata L., Festuca rubra L., Trisetum flavescens (L.) Beauv., etc.), though the term might also be applied in general to stands of large grasses elsewhere in pastureland (lo paturadzo, see Chpt. 10) and even to the domesticated cereals. Dactylis glomerata L. seems to have been the focal referent among the wild grasses and Secale cereale L./la sɛla among the domesticated ones. When pressed, some Alluetains would extend

the term to the smaller, less conspicuous grasses (e.g. to Nardus stricta L./lo tsny), while others would not. Clearly the focus was on the larger, economically important and common Graminae that were not specifically named, though several that were named were included by some Alluetians.

l ɛrba rədz. Onobrychis viciifolia Scop. Saintfoin

Although red clover (Trifolium ssp./lo trijole) and lucerne (Medicago sativa L./la luz rna) were more commonly planted as artificial forages in the Alluetain cultivated fields early in this century, some people periodically experimented with saintfoin (see Section 4.a.) and escapes occurred into the cultivated field margins and lower hayfields. In its wild form (subsp. montana (DC.) Gams), saintfoin was also a fairly common component of the higher hayfields and pasturelands.

lo fmɛt. Lycoperdon ssp. Puffball

Puffball "powder"--actually spores from the fruiting body of the mature fungus--was sprinkled on cuts and abrasions in Les Allues to stop bleeding in humans and animals. Puffballs could be found in late summer and fall in the mowed hayfields. Several might be gathered by each family and used as needed throughout the year. Puffballs were the only mushrooms to be traditionally gathered in the commune (see Meilleur 1982).

la gɔra. Salix caprea L. and Salix ssp. Goat willow and wide-leafed willows in general

Long, straight branches of goat willow and other common wide-leafed Salix "tree" species (e.g., S. cinerea L., etc.) and their various hybrids were sometimes transplanted from deciduous coppice (lo rɛbje) or from the Doron edge (lo lɜ̃ dɔ lɛva) to hay parcel corners to ensure boundaries could be easily found at the moment hay was to be mowed. These branches sometimes sprouted into small trees which subsequently produced branches of their own. Such "semi-domesticates" were usually pollarded each year. This not only ensured a minimum of shadow cast on the hayfields, but also resulted in the

annual production of flexible branches or de jɔre ("les attaches"/ "fasteners"). These were used to wrap up various bundles, especially le dzavɛle, leafy forage bundles of ash and sycamore (see Section 9.a.), making their handling much easier.

la jets. Carex ssp., Juncus ssp. +. Sedges and Rushes

The two wetland folk biotopes (la mojasir and lo rɔtire), found mostly within the hayfield and pasturable zones, were characterized and mostly recognized by the presence of la jets, a vegetational configuration dominated by sedges and rushes (51 Carex species and 9 Juncus species have been identified in the Vanoise National Park and its peripheral zone...Gensac 1974:39+). In ordinary years, such vegetation (but especially the rushes) was gathered by alpage team members and used as animal litter, human bedding and to pad cheeses during their transport (see Chpt. 10). Rushes were also "worn" by some Alluetain men in lieu of socks; they were said to ensure against blisters and to keep the feet much cooler in summer than socks. In exceptionally dry years, la jets was mowed in the hayfield zone and used as winter fodder.

la kɑ̃'pɑ̃na. Campanula ssp. especially, but also Digitalis grandiflora Mill. and Primula veris L., etc. The large Bellflowers, Large yellow foxglove, Cowslip, etc.

Several large bellflowers (C. barbata L., C. rapunculoides L., C. rhomboidalis L., C. rotundifolia L., etc) were common in the Alluetain hayfield and pasturable zones. The term la kɑ̃'pɑ̃na ("cowbell") was used to refer to these and other Campanula species, as well as to other common bell and tube-shaped flowers that were not more specifically named (e.g. Digitalis grandiflora Mill., but see lu dʒa in Section 9.a. and lo kuku, infra).

la kɑ̃pa'nɛta. Campanula ssp., Pulmonaria ssp., Soldanella alpina L., etc. The smaller Bellflowers, Lungworts and Alpine snowbell, etc.

Several Campanula species with smaller flowers than those denoted by the preceeding vocable were also found within the hayfield and pasturable zones. The term la kɑ̃pa'nɛta ("small cowbell") was

extended to a number of these small, brightly colored, tube or bell-shaped flowers that were not more specifically named.

la karɛla. Festuca paniculata (L.) Sch. & Th. Golden fescue

Golden fescue appears to be the primary referent of this term in Les Allues, as it was to a cognate term in Termignon, Haute Maurienne (see Meilleur 1985:61), though consultants were not unanimous in selecting this species. Several elderly Alluetains claimed they could no longer remember what plant the vocable labeled; for these people, the term represented what Hunn (1977:36) has called a "loose name." The sedge-like properties of this highly visible and distinctive grass (triangular, sharp-edged often cutting leaves) and its preference for a dry rather than a wet habitat probably contributed to some of this confusion; several people said it was n ɛrba epja ("a large grass") while others said they thought it was na jets ("a sedge or rush"....see supra) which grew in dryer areas, a contradiction to the common use of this last term. Less clearly associated with the dryland folk biotope (lo sɛtʃy) than la blâ'tsɛta, la karɛla was also said to be found in dryer hayfields (lu pra) or in common pastureland (lu paturadzo dɔ la komna, see Chpt. 10).

In the early decades of this century, la karɛla was not known to be useful in any way in Les Allues. To the contrary, the sharp adult leaves were known to cut the mouths of the domesticated animals and the large clumps of this plant were usually not mowed nor grazed. It is possible that la karɛla was at one time more appreciated in Les Allues as an early spring commonland forage for sheep, as it still is in Termignon, Haute Maurienne (Meilleur 1985:61). However, this use was unknown early this century in Les Allues when sheep had lost much of their earlier economic importance.

lo ke. Ranunculus aconitifolius L. White bachelor's buttons

White bachelor's buttons is a common plant of watercourse edges (lo lɜ̃ dɔ lɛva) and very wet prairies (lo rɔtire) within the Alluetain hayfield zone. It is closely associated with la jets (see supra) both ecologically and functionally; it is generally viewed negatively as a bad hay. If consumed in large enough amounts it is said to give cow's milk a bad taste. Nevertheless, it was viewed somewhat more positively as an acceptable forage in very early spring when livestock was pastured in poorer habitats like la mojasir and lo rɔtire. This occurred for only a short period just after animals

were brought out from the stables and before they were taken to the "montagnettes" (see Chpt. 10).

lo kɔ̃flabo. Gentiana acaulis L. and Gentiana ssp. Koch's gentian and by extension, the small blue-flowered Gentians

The vibrant blue flowers of Koch's gentian are common in spring in the mid to upper elevation hayfields and pastureland in Les Allues. Children would amuse themselves by smashing the open end of the long, fused tubular corollas against their hands, hoping to provoke small explosions of air. In flower, the plant was said to make a decoration when pressed and dried. The term is extended to the other small common blue flowered gentians: G. bavarica L., G. clusii Perr. et Song., G. verna L., etc.

la kokwara, de kokware. Heracleum sphondylium L. and Umbelliferae in general. Hogweed and by extension, most large "typical" Umbels.

The term la kokwara, employed with the feminine singular definite article la, refers to the very common, highly visible hogweed of Alluetain hayfields and pastureland. Hogweed is said to grow most densely in abandoned cultivated fields converted to hayfields which had thus once been heavily fertilized on a regular basis. La kokwara was not appreciated in hay parcels because of its hard to mow and inedible stalk. The plants were separated from the better hay after mowing, piled up and usually burned. The leaves were nevertheless sought as green fodder for rabbits and the occasional guinea pigs kept by Alluetain families. The hard adult stalk might also be transformed into a whistle (lo sibla) by an enterprising child.

The term de kokware, employed with the indefinite plural article de, was used to refer to the common, large visible Umbelliferae with "typical" umbelliferous inflorescences that were not more specifically named (such as Angelica silvestris L., Anthriscus silvestris (L.) Hoffm., Daucus carota L., Chaerophyllum aureum L., Pimpinella major (L.) Huds., etc.). The "atypical" Umbelliferae genera were not considered to be denotata of this term (such as Astrantia, Bupleurum, etc.)

lo krɛsɑ̃. Veronica beccabunga L. Brooklime

Brooklime was gathered around springs (le surse/"les sources"), watercourse edges (lo lɔ̃ də lɛva), retting pits (lu nɛr) and in very wet areas (lu rɔtire) within the hayfield zone early this century. Small amounts were consumed in salads and in soups. Brooklime could be considered na salada ("une salade"/"a salad") in a functional sense (see la salada(b), Section 5.a.).

lo kuku (syn. lo ʃik t, lo ʃiʃɛt, la kɑ̃'pɑ̃na). Primula veris L., and by extension, P. elatior (L.) Hill. Cowslip and by extension Oxslip.

These two primroses of the Alluetain hayfield zone were felt to be gay additions to the spring flora. The umbellate clusters of flowers, especially of cowslip, were sewn into balls with hemp string for children's toys. Individual flowers were said to be sucked by children for their nectar. The vocable la kɑ̃'pɑ̃na was used by several people in lieu of lo kuku, or as a synonym. However, la kɑ̃'pɑ̃na was more often employed to label any large, bell or tube-shaped flower (Campanula ssp., Digitalis grandiflora Mill., etc.) that was not more specifically named (but see lu dʒa; see la kɑ̃'pɑ̃na, supra).

la kwa də rna (syn. la kwa d ano). Equisetum arvense L. and by extension Equisetum ssp. Common horsetail and Horsetail in general.

While common horsetail and other Equisetum species could be found in several folk biotopes (lo pra, lo rɔtire, even in wetter cultivated fields, lu tsɑ̃), la kwa də rna was most commonly associated with la jets (sedges and rushes, see supra) and la mojasir. Rejected as fodder by livestock, it was negatively viewed by Alluetains.

lo laetsɔ̃. Sonchus arvensis L., S. oleraceus L. and Taraxacum officinale Web. Perennial sow-thistle, Smooth sow-thistle and Dandelion

The two sow-thistles and the dandelion formed the core of a functional category of composites with milky juice (laets ...lo laθe/"lait"/"milk"), found close-in to the hamlets (see Section 5.a.), whose leaves were sought as green fodder for rabbits and guinea pigs. While the sow-thistles were not characteristic hayfield and pasturable zone species, the dandelion was common in both hayfields and around mid and high elevation pasturable zone buildings (see Chpt. 10). As la salada (see Section 5.a.), dandelion leaves were gathered and eaten in spring at these locations. Once in flower, the dandelion became lo laetsɔ̃ and was used only for animal fodder, if at all.

la lɛ̃gabwe. Polygonum bistorta L. Bistort

The leaves of this very common hayfield and pastureland species might be gathered in May or early June and added to soups.

la mɑ̃ di bɔ̃dɨ/la mɑ̃ di dɨablo. Orchidaceae ssp., especially Dactylorhiza maculata (L.) Soo., D. majalis (Rchb.) Hunt & Summ., Gymnadenia conopsea (L.) R. Br. and Nigritella nigra (L.) Rchb. The common colorful Orchids in general and especially Heath spotted orchid, Broad-leaved marsh orchid, Fragrant orchid and Black vanilla orchid, respectively.

Many orchid species, represented by several genera, are common wild plants in Les Allues from the montane well into the alpine zones. While the extension of the denotata of the two dialect terms varies somewhat from person to person, the common colorful orchids of the hayfield and pasturable zones--which are the most often encountered and noticed of the orchids--appear to represent the semantic focus of the often employed double name la mɑ̃ di bɔ̃dɨ/la mɑ̃ di dɨablo ("the hand of good God"/"the hand of the devil"). These terms are clearly derived from an appreciation of the fleshy, palmate root systems of several common showy species, notably the broad-leaved marsh orchid, the heath spotted orchid and the fragrant orchid, all common in la mojasir within the hayfield and pasturable zones. The black vanilla orchid is common in higher and dryer hayfields and pasturelands. Upon presentation of the entire plant of one of these

species, most elderly people will refer to the old, flaccid and brown palmate root of the preceeding year as la mɑ̃ di dyablo and to the new, turgid and white root of the year as la mɑ̃ di bɔ̃dɣ (see also Constantin & Gave 1908:79). It is interesting to speculate why such nomenclatural salience would be shown to plant species for which no use was known in the early decades of this century. Dactylorhiza maculata and D. majalis were at one time commonly gathered elsewhere in France (op. cit.) and apparently also in Savoie for salep during famine periods (Chabert 1897:30).

la margɔ'rita. Leucanthemum vulgare Lam. Ox-eye daisy

The ox-eye daisy, a common species of dryer hayfields and pastureland, was widely admired for its beauty. In several instances, clusters of ox-eye daisy were found in and around the hamlets (garden edges, against buildings, in the cemetary, etc...see Section 5.a.) where they had been transplanted as decoratives. Smaller, overtly similar species (Aster bellidiastrum (L.) Scop., Bellis perennis L., etc.), sometimes called le pt(ite margɔ'rite, might be treated in much the same manner.

la mɛ̃ta sarvadz. Mentha longifolia (L.) Huds. Horse mint

The descriptive epithet sarvadz ("sauvage"/"wild") was added to the head term mɛ̃ta to distinguish this common wild wetland species from the cultivated mints of the household garden (see Section 5.a.). The wild species was clearly recognized as an aromatic, medicinal plant to be prepared in infusions or macerated in alcohol and administered to combat indigestion in humans and in animals. It had mostly been replaced in this role early this century by the cultivated varieties.

lo milpɛrtɥi. Hypericum maculatum Crantz. and H. perforatum L. Imperforate St. John's Wort and Perforate St. John's Wort

Both St. John's worts are common plants on parcel margins and path edges, etc. within the hayfield and pasturable zones. Individual plants were gathered, dried and infused and the resulting liquid employed as an eye wash.

lez otɔ̃'nɛ̃se. Colchicum autumnale L. Meadow saffron

The late summer and fall flowers of meadow saffron were the primary referent for this vocable (d otɔ̃/"automne"/"autumn"). By being told the skin of their fingers would peel, children were frightened into not touching this common poisonous species of the hayfield and pasturable zones. The majority of elderly Alluetains made no connection with lo bove, the spring seed capsule form of the same plant (see lo bove, supra), thus separating the Linnean species into two folk taxa.

lo paeʒo. Lathyrus heterophyllus L. and L. pratensis L.. Heterophyllus vetchling and Meadow vetchling

Both Lathyrus species are found here and there in Alluetain hayfields: L. heterophyllus in sunny, dryer hayfields approaching the dryness of lo sɛtʃy; L. pratensis in cooler, more humid, less well-exposed sites. As one of many components of hay, the vetchlings were said to be sought out and eaten first by the stabled domesticated animals and for this they were very favorably viewed by livestock owners.

le pate (syn. le pa d an). Petasites hybridus (L.) G., M. et Sch. and Tussilago farfara L. Butterbur and Coltsfoot

The very similar appearing leaves of these two common species--emerging from the ground at approximately the same time in spring in or near la mojasir within the hayfield zone--were indistinguishable to elderly Alluetains. The use of the dialect term le pate was triggered by this vegetative aspect of both plants, which, in this form, together constituted a single folk botanical taxon. Even though the leaf size differential was sometimes noted (butterbur leaves are much larger), most people explained this away as a result of differences in growth stage or in soil and water conditions, etc. The flowers of coltsfoot, which appear before the leaves, are separately labeled (lo boke dzɔno, see supra) and constitute for most people a distinct folk botanical taxon. One person claimed, however, that le pate were a later form of lo boke dzɔno.

le pate dø tsɛt. Antennaria dioica (L.) Gaert.. Mountain everlasting

Mountain everlasting, a common species of the dryer areas (lu sɛtʃy) within the hayfield and pasturable zones, was gathered then infused as a remedy against colds and flu. It was often mixed with other wild plants such as alpine rose blossoms, alpine pansy flowers, etc.

la pɛzɛta sarvadz, le pɛ'zɛte sar'vadze. Vicia sepium L. and Vicia ssp. Bush vetch and wild Vetch in general

Two species of wild vetch (V. sepium L. and V. sylvatica L.), and probably others (see Gensac 1974:191), occur in various Alluetain folk biotopes. By reference to the culturally salient cultivated species V. sativa L. (see Section 4.a.), these species were called le pɛ'zɛte sar'vadze (the plural form was almost always used). The bush vetch was fairly common in the lower to mid elevation hayfields. Like lo paeɲo (see supra), to which it was felt to be closely related (as well as to other plants bearing distinctive papillionaceous flowers), owners noted that stabled livestock consumed the vetchs before the rest of the hay.

lo prɛ̃ pøẽe, pɔxe. Thymus serphyllum L. Wild thyme

Wild thyme is a common plant of dryer areas within the hayfield and pasturable zones. It is most often associated with lu sɛtʃy where surface rocks are present. Wild thyme was mostly gathered for use as a medicinal; it was prepared in the form of a tisane and administered against diarrhea, indigestion and even colds and flu.

la primɔvɛr. Primula vulgaris Huds. Primrose

The appearance in April of the bright yellow, acaulescent flowers of this common species was viewed by Alluetains as an encouraging sign of spring. Flowering began in lower elevation hayfields and progressed upward through the hayfield zone for more than a month.

la pʃir d ano. Primula farinosa L. Birdseye primrose

Birdseye primrose is a common species of boggy lands (lu rɔtire) within the hayfield and pasturable zones. No cultural significance could be identified during the fieldwork period to account for the nomenclatural marking.

la rɛn de pre. Filipendula ulmaria (L.) Maxim. Meadowsweet

Commonly found in wetter areas (la mojasir and lo rɔtire) within the hayfield zone, meadowsweet was of little forage value. Its flowers were gathered and infused as a diuretic for both humans and animals.

la salada. Taraxacum officinale Web. Dandelion

This dialect term was used polysemously (see la salada(c), Section 5.a.). Small, tender dandelions were sought in hayfields and around the pasturable zone buildings in spring by Alluetain women wishing to break the monotony of winter fare dominated by conserved foods. As fresh greens, they were most often consumed in the "salad" (la salada(a)), eaten before or after the main noon meal. Later, in summer and throughout the fall, and especially after flowering, the plants were no longer gathered for human consumption, but were gathered as green fodder for rabbits, guinea pigs and pigs. Once mature and no longer tender, the dandelion was referred to as lo laetsɜ̃ (see supra).

lo sɑ̃ti'gɔla (syn. la foja forta). Rumex ssp. The small-leaved Docks and Sorrels

Several small-leaved Rumex species (R. acetosa L., R. acetosella group, R. arifolius All., R. scutatus L., etc.) were common plants of the hayfield and pasturable zones. All were recognized as having a slightly acid tasting leaf ("la feuille forte"/"the strong leaf") and they were sometimes chewed by people searching to refresh themselves when away from the hamlets. Leaves were also added to soups by some

people as a flavoring. Lo sãti'gɔla and lo laepe (see Section 10.a.) were thought to be closely related.

la tartariz. Rhinanthus alectorolophus (Scop.) Poll. Greater yellow rattle.

Disdained by livestock, greater yellow rattle was recognized in Les Allues as a "bad" hay. It was said to grow abundantly in hayfields and cultivated field parcels during years which began with exceptionally cold spring weather.

lo trijole (sar'vadzo). Trifolium pratense L. and Trifolium ssp. The Red clovers

Several clover species commonly occur in Alluetain hayfields and pastureland (Gensac 1974:182+). The ubiquitous wild red clover, T. pratense L., appears to be the focus of the vocable which, nevertheless, includes the other wild red clover species (T. alpestre L., T. alpinum L., etc), as well as the subspontaneous and cultivated forms (see Section 4.a.). While red clover was recognized as one of the best dry fodders, especially as it improved milk production, it was also thought to provoke meteorism (lo kɔ̃flə/"gonfler"/"swelling") in bovines when consumed wet in spring. Four-leaf clovers were sought as good-luck charms.

le tsa'pɛle (syn. l epɔza, lo tsaepe fu). Pulsatilla alpina (L.) Delarbre. subsp. sulphurea (DC.) A.&G. Yellow alpine pasque flower

The yellow flowered subspecies of the alpine pasque flower becomes increasingly common in the upper hayfield zone from where it extends well into the higher pasturelands (lu paturadzo, see Chpt. 10). The plant was felt to have little hay or forage value, but its distinctive appearance (many, elongated plumose styles after flowering) was regularly noted by elderly Alluetains (la tsa'pɛla = "small hat"?; l epɔza/"l'epouse"/"spouse"; lo tsaepe fu/"le chapeau fou"/"the crazy hat") and it appears to have been used as a children's toy.

lo, lu tsardɔ̃. Carduus ssp., Centaurea ssp., Cirsium ssp. Thistles, Star-thistles and Knapweeds

Many species of thistles from these three genera occur in a variety of folk biotopes from the montane to alpine zones in Les Allues. All are referred to generally as lu tsardɔ̃ (m. pl.), and in most cases, are viewed negatively. Several species regularly occur in Alluetain hayfields and pastureland (Carduus personata (L.) Jacq., Centaurea montana L., C. scabiosa L., Cirsium spinosissimum Scop., etc.). These might be removed from hay after mowing to prevent injuries to the mouths of livestock.

la tsardɔsa. Carlina acaulis L. Stemless carline thistle

Even though the stemless carline thistle was felt to be a "bad" hay and forage, it was of considerably greater interest to Alluetains than the other thistles (lu tsardɔ̃, see supra). In the early decades of this century, the receptacles of this plant were occasionally consumed raw by children while playing or by adults working in the higher hayfields or pasturelands (see also Chabert 1897:19). The tough sepal-like bracts of this plant were said to close upon the flowerheads before the advent of wet weather and to reopen only when dryer weather was imminent.

la tsɛv'rɛla. Laserpitium latifolium L. Sermontain

Fairly common in the Alluetain hayfield zone, sermontain was difficult to mow when mature. It was thus considered to be a "bad" hay. Children were instructed to walk ahead of the mowers and to pull the hard-stemmed plants up by their roots. In the pasturable zone, it was felt to be a useful forage only when young and tender. Sermontain was considered to be na kokwara, that is, a kokwara or "typical" umbel. However, it was not felt to be la kokwara, that is, the kokwara or Heracleum sphondylium L. (see supra).

lo tsny. Nardus stricta L. and Graminae ssp. Mat grass and other very low-growing grasses

Closely associated with la blã'tsɛta (see supra), lo tsny was felt to be even more low-growing and difficult to mow than that group of grasses. Mat grass, common in shallow, dry or sandy topsoils (lu sɛt(y) of the hayfield and pasturable zones, appears to have been the focal species of this term.

lo vraro. Veratrum album L. False helleborine

False helleborine was, and is, a common plant in well fertilized hayfields and pastureland. It was considered to be a highly poisonous plant, and when mature, its woody stalk made it difficult to mow. These two features made it a "bad hay and/or forage and in spring considerable effort was expended by some families in removing it from hayfields. Individual stalks were cut with the scythe in hopes of eradicating the plant (the same was done to the great yellow gentian...see dzã'xãna, supra). False helleborine was nevertheless a highly useful plant. Its roots were smashed and macerated in water and the resulting solution was used in fall to scrub down bovines before their reentry into the stables for over-wintering. The liquid, it was claimed, was effective in killing the insect vermin that had parasitized the cows during the five months or so of outdoor grazing.

NOTES: CHAPTER 8

1. Toward the goal of better understanding the conceptual basis of the folk biotope, it might be a useful future project to compare a concrete set of folk biotopes, like the 20-some Alluetain categories, with those phtyosociological or other ecological categories employed by vegetation ecologists to order the same or a similar biotic space. Because of the continuous nature of plant associations as they intergrade into each other, it appears, a priori, much less likely that the semantic fields of folk biotopes will be isomorphic (that is, identical) with the vegetation ecologists' categories, as the bulk of folk taxa (discontinuous by nature) were shown to be by Hunn (1975) with scientific biological taxa.

2. In the highest communes of the Tarentaise and the neighboring Haute Maurienne, large numbers of animals were commonly wintered outside the communes of their owners, in lower elevation communes with more plentiful hay supplies. In Termignon (Haute Maurienne), for example, over 90% of the sheep and milk-cows were over-wintered outside the commune, sometimes at considerable distances (see Meilleur 1985:41+). Such practices were costly to the animal owners: offspring normally born in winter were lost as payment to the winter keepers, as were two shearings of sheep's wool.

CHAPTER 9

The Alluetain Deciduous Coppice and Coniferous Forest

One of the first major environmental modifications effected upon the valley of Les Allues by the earliest permanent inhabitants was the removal of large tracts of primitive vegetational cover to provide space for agricultural, pastoral and village sites (Bartoli 1966:92+; Bocquet 1983; Onde 1938a:5). As we have seen, thirteen of the fourteen Alluetain hamlets are located within a well delimited area of the once wooded upper montane and lower subalpine zones of the valley (see Chpt. 2, Figure 2d). These hamlets, and the agricultural and hay-making zones immediately surrounding them, were built around small, more or less level shoulders located on the valley walls at relatively short distances from the Doron des Allues, the traditional source of mechanical power. The more expansive, flatter, well drained and better exposed of these sites were probably cleared first. Above this zone, but below timberline (1500 - 2000 m approximately), natural forest cover was also greatly modified. Not only were openings made on both the east and west-facing valley walls for the many privately owned "montagnettes" and for adjacent community-owned spring and fall grazing lands (lu kmɔ̃...see Chpt. 10), but as the high mountain summer pastoral sector of the economy expanded in the southern, upland half of the valley, the upper forest edge was progressively removed to

provide fuel for cheese-making while at the same time extending alpine meadow downslope and increasing pastoral carrying capacity (Chavoutier 1977; Mougin 1919; Onde 1938a:61). Despite such radical changes to the indigenous woody cover from the lower montane zone to the upper subalpine zone, many of the steeper and rockier sections of the commune--less suitable for agricultural, hay-making, pasturing and habitation purposes--were traditionally maintained as deciduous coppice (lo rębje) and coniferous forest (la fore). While coppice and forest areas appear to be physically less appropriate for the more acute forms of domestication, their importance to the community's well-being should not be underestimated. Both these and several related secondary folk biotopes traditionally provided many resources essential or of great value to the Alluetain high mountain way of life. Even though the surface areas allotted to the two primary wooded biotopes apparently waxed and waned as human and domesticated animal population pressure and outside industrial demand for combustible increased and declined over the years, and in spite of periods of apparent lax management and surveillance, coppice and forest lands in Les Allues do not appear to have dropped below what was necessary to provide the customarily diverse wood and forest products and avalanche and slide protection that were annually demanded of them.

While most coppice land was privately held, managed somewhat intensively and maintained at a pre-climax deciduous wood and brush vegetational stage, in opposition to this and the other economic

sectors already described, the major part of the coniferous forest was owned by the collectivity rather than by individuals and was managed much less intensively. In fact, it was maintained at a successional stage much more closely approaching that of climax vegetation (para-climax) than any of the other major folk biotopes. Despite increasing national government involvement in the management of forests in the last 250 years, and significant long-standing private ownership of forested parcels, the historically old collective ownership of large sections of coniferous forest has persisted even until today, ensuring community members their long-established right of access to these lands and their resources. As a testimony to the perceived importance of collectively owned land to community well-being in the Tarentaise, an attempt by the Sardinian government during the 18th and 19th centuries to stimulate the transfer of communal forests to private control met with little success. Despite significant government regulation today, access to publicly owned parcels of coppice and especially of forest, is still felt to be a birthright. Privately owned wooded parcels, subjected to considerably less government regulation, are also considered to be major parts of the familial holding and potentially significant contributors to wealth and security. Though individuals today often ask management advice from locally stationed government forestry agents (who are charged, among other things, with monitoring all cuts and marking all trees to ensure against theft from government supervised, communally owned lands),

they jealously guard the ultimate rights of decision making and use on private properties to themselves.

The traditional use of many and diverse wood and forest products in both the communal and private coppice and forest contrasts sharply with the contemporary commercial model of forest exploitation in which only a small number of species are generally extracted. The traditional multi-purpose approach to coppice and forest use was reflected in large numbers of folk botanical taxa--both woody and herbaceous--being associated with the two primary and several secondary "woody" folk biotopes. This section will look in some detail not only at the physical distribution, historical relevance and ownership pattern of coppice and forest land, but at the manner in which these folk biotopes were traditionally managed and utilized. The folk botanical taxa associated with each coppice and forest-related biotope will be described individually in the Dictionary Entries following, in Section 9.a.

A brief history of the Alluetain forests

The earliest written documents pertaining to the use of natural resources in the northern Alps after the Roman period--from the 12th through the 15th centuries--deal extensively, among other things, with the management of communally owned forests. Coutem, in a survey of the Alluetain communal archives of in 1883 (p. 113-114), found reference to the management of the "communal forests" as early as 1359, including the local appointment of two "forest guards" and the fixing of fines to be paid for forest-related infractions. The

"Règlement de la Communauté des Allues"/"Regulation of the Community of Les Allues," written in 1390 by locally elected officials and agreed upon by the majority of the heads of household (translated into English in Appendix 1), was primarily concerned with regulating the use of communally owned lands through the application of monetary fines for ordinance violations (what Hardin 1968:1247 has called "mutually agreed upon coercion"). Such questions as who had rights in the forest, what "essences" could be removed, and how and when the forest could be entered, etc., were dealt with in this "Regulation" (see also Meilleur 1985:12, for similar references to natural resource regulation in the neighboring Haute Maurienne region). A reading of such documents suggests that by the end of the Middle Ages (if not much earlier), the main features of the sub-contemporary agro-pastoral economy were in place, and that the management and protection of forests to ensure sustained availability of resources and equal access to all community members was a major concern of the high mountain communes. While it was not possible to determine from the 1390 "Regulation" the percentage of communal territory occupied by forest, the parts of the forest owned by the different proprietors (as it was for the early 18th century...see Meilleur 1983: Table 9a), nor a comprehensive listing of the resources extracted from it, this document seems to indicate, at the very least, that a significant part of the forest was owned at this time by the community of Les Allues who near-exclusively ensured its management and protection.[1] It is distinctly possible that important collective holdings in this

property type (and in pastureland, see Chpt. 10) significantly predate this late Medieval period, and management of such land may even have been, as Perouse has suggested (1911:15,59), "la raison d'être" for the formation, during the Middle Ages or earlier, of the socio-economic and political entity known today as the commune.

Despite the existence of forest-related national government legislation in Savoie from at least the mid-16th century (Mougin 1931:162; Perouse ibid.:72+), local community control of forests in the Tarentaise predominated well into the 18th century, if not much later (op. cit.; Paillard 1983; Palluel-Guillard 1983). It was not until the hundred year period between 1730 and 1830 that a "coherent" forest legislation at the national government level (laws of 1729, 1770, 1822, and 1833) began to take shape in Savoie (Lovie 1961:741). Nevertheless, such legislation was apparently little applied, if at all, to communally owned forests in high mountain valleys with difficult access such as Les Allues where, in 1732 for example, 56% of the forest was collectively owned (see Table 9a). Even though openly recognizing the power of the communes to "care themselves...for the conservation of the woods...", in 1738 (Cot 1841:416) the House of Savoie, recently elevated to the Monarchy of Sardinia (in 1713), also began pushing at this time, through a variety of edicts, for the transfer of communal forests and pasturelands to private hands as a means of intensifying their commercial exploitation and thus augmenting tax revenues (Perouse ibid.:58-59). It was believed that the edicts of 1762 and 1771, which permitted the communes to purchase

their emancipation from feudal obligations (Guichonnet 1973:308), would push the collectivities into a need for ready cash. This effort

Table 9a: Ownership of the Alluetain Forest and Coppice in 1732 (Adapted from the Cadastre Sarde of 1732) (See Meilleur 1983:130-131)

Total communal surface in 1732	9,112 ha
Total number of parcels in 1732	34,447
Surface in forest & coppice	466.9 ha
Number of parcels in forest & coppice	1,545
Average parcel size in forest & coppice	3,022 m^2
Percentage of total communal surface in forest & coppice	5.12%
Surface in forest & coppice owned by the community of Les Allues	261 ha or 56% of total, formed by 31 parcels averaging 8.4 ha/parcel
Surface in forest & coppice owned by the "bourgeoisie" (non-community members mostly from Moutiers)	92 ha or 20% of total, formed by 266 parcels averaging 3,458 m^2/parcel
Surface in forest & coppice owned by individual community members	82.6 ha or 17% of total, formed by 1,180 parcels averaging 700 m^2/parcel
Surface in forest & coppice owned by the clergy (primarily the archbishopric of Tarentaise, at Moutiers)	26.3 ha or 6% of total, formed by 57 parcels averaging 4,614 m^2/parcel
Surface in forest & coppice owned by the nobility (mostly from Moutiers)	5.3 ha or 1.13% of total formed by 11 parcels averaging 4,818 m^2/parcel

culminated in 1781 with the authorization of the sale of communal properties. It was especially hoped the communes would seize this opportunity to sell communal forests to private owners interested in more intensive forms of management. According to Perouse (ibid.:59+), resistance to such sales was fiercest "from the less fortunate community members" with little or no "private" forest holdings. These individuals were clearly concerned about the loss of their traditional access to forest and pasturelands and, in fact, less than 25% of the Tarentaise communes sold communal property at this time (op. cit.). Les Allues, mostly emancipated since before the Middle Ages--or perhaps always having been a more or less "freeholding" community (Coutem 1888:112)--was apparently not implicated in such sales. However, it is still not clear exactly when national government intervention in the management of communal forests began to rival local control. After the annexation of Savoie to France in 1860, the 512 ha. of communal forests became subject to the French "Forest Code" ("Code Forestier"), but as the Alluetain communal forests have grown with the abandonment of pasturable "commonlands" (see Chpt. 10), submission of these forests to government management has not followed in all cases. While 650 ha. are today subject to the "Forest Code," at least another 100 ha. have still not been brought into this management regime (Pers. Comm. M. Piercy). While strict management is assured in most communal forest today, during periods of past political instability and military conflict, especially during and just after the revolutionary period, 1790-1795 (Plagnat 1954:13),

national government presence and surveillance in the forests diminished. In some communal forests, mostly in the last two hundred years, this has led to considerable loss from theft or to other forms of destruction (Fourchy 1944; Lenoble 1923; Leroy 1957:505; Mougin 1919, 1931:132). It is not clear whether this is a recent phenomenon related to increased national government supervision (and especially the periodic lack of it), resulting in diminished communal supervision, or whether the removal of significant contraband, and various forms of administrative inattention leading to forest damage, has greater historical depth.

Taken as a whole, individually owned forest parcels were, and still appear to be, less extensive than collectively owned forest (see Table 9a: 44% vs. 56% in 1732). Like the deciduous coppice, private forest parcels were, from the late 18th century at least, theoretically subject to the forms of management adopted by the individual proprietors, though within quite strict government guidelines (see Leroy 1957:504+; Mougin 1931:164+; Reed 1954:52). Forest parcels continue today to be closely monitored by their owners who are the primary beneficiaries of their exploitation (the National Forest Office/ "Office National des Forêts" asks 5% to 6% of revenues from the sale of timber from communal forests that it manages...Leroy 1957:548).

The woody vegetation folk biotopes: their configuration, distribution and role in the Alluetain economy

Phytosociologists have described a number of ecological groupings in Les Allues dominated by woody species (Gensac 1972). These vary from dense, low-growing, woody vegetation dominated by single species (e.g. green alder thicket/"Fourré d'Aune vert"), through various mixes of bush and tree species and deciduous and coniferous species (e.g. beech wood with Norway spruce/"Hetraie à Epicéa"), to both deciduous and coniferous tree stands dominated by single species (e.g. aspen wood/"Bois de feuillus divers + Tremble"; Norway spruce stand/"Faciès à Epicéa"; Siberian stone pine stand/"Faciès à Pin cembro"; etc.). Elderly Alluetains also recognize, regularly visited and sought natural resources from several folk biotopes dominated by woody vegetation.

Two dialect terms were repeatedly elicited in discussions involving wood and forest land and its management in Les Allues: lo rębje and la fore. Each corresponded with a major folk biotope dominated by woody vegetation. Each was defined generally by appreciating the overwhelming presence of woody species within prescribed geographical areas of the commune and specifically by noting several of the overt morphological distinctions commonly made between deciduous and coniferous trees: differences in the diameters of the trunks (e.g., smaller/larger), in the number of trunks per plants (e.g., several/one), in leaf form, etc. What I have called the deciduous coppice (lo rębje) was ideally composed of a mix of deciduous trees and shrubs, often with several smaller diameter trunks

per plant, while the focal forest (la fore) was composed of higher-growing usually pure stands of conifers--most often Norway spruce--with unique, large diameter trunks. Because of the natural and human induced ecological diversity of the woody vegetational cover within the valley, and the wide-spread intergradation among even the most salient and seemingly stable of the phytosociological "woody" groupings, there were often marked real vegetational differences within the semantic ranges of each of these terms as they were applied in specific instances. Closer examination revealed, among other things, that woody deciduous vegetational cover was not always "mixed" in Les Allues, nor was all forest dominated by the most common conifer, Norway spruce. There were, and still are today in Les Allues, Scots pine and Siberian stone pine forests as well as sectors of woody deciduous vegetation in which single tree or bush species dominated (e.g. aspen, green alder). Cursory evaluations of such vegetation by elderly Alluetains would often result in their being called respectively la fore and lo rɛbje. But when it was necessary, for economic or other reasons, to mark a distinction between the ideal coniferous forest or deciduous coppice and their variants, or related but distinctly different woody vegetational forms, modifying epithets or phrases were commonly used in combination with the two major "woody" biotope "head" terms (e.g. la fore d arɔla = "Siberian stone pine forest"), often in conjunction with place names (lu ma/"lieux-dits").

The distribution of these "woody" folk biotopes within the commune was patchy, though several regularities could be identified in this distribution. Clearly there were also important differences in management techniques and use strategies among the various "woody" biotopes. Such distinctions were sometimes further cross-cut by management and resource use differences related to publicly versus privately owned land. The Alluetain "woody" folk biotopes, their vegetational configurations, distributions, and economic relevance will be discussed in the following pages.

The "woody" deciduous folk biotopes

Agents of the King of Sardinia finished the cadastral map of Les Allues in 1732. With local participation, succinct and presumably accurate descriptions of property were established as a means of determining the taxable value of the 34,447 parcels of land which were found in the commune during those years (see Meilleur 1980). More than thirty classes involving woody deciduous vegetation were formulated, ranging from "épine" ("bramble") and "broussailes" ("brushland") to "bois à tremble" ("aspen wood") and "gros bois fayard" ("large beech"...ADS, C1984-C1990; see Table 9b).

Table 9b: Woody Deciduous Vegetation Land Types From the 1732 Alluetain "Cadastre Sarde"

Cadastre Sarde	Suggested Approximate English Translation
épine	bramble
broussailles	brushland
brouss. + murger	brushland + cultivated field rock pile
brouss. + pierrailles	brushland + rock pile
brouss. + roch ou rocailles	brushland + boulders
brouss. + paturage	brushland + pastureland
brouss. + pré + pierrailles	brushland + hayfield + rock pile
brouss. + pré	brushland + hayfield
brouss. + ravine	brushland + ravine
grosses broussailles	large vegetation brushland
pré + brouss. + murger	hayfield + brushland + cult. field rock pile
bois noir + brouss.	coniferous forest + brushland
bois + brouss.	deciduous wood (?) + brushland
bois + brouss. + paturage	deciduous wood + brushland + pastureland
bois	deciduous wood (?)
bois + pré	deciduous wood + hayfield
bois + rocher	deciduous wood + boulder
bois mêlé	mixed deciduous wood (?) or deciduous + coniferous wood (?)
bois taillis	deciduous coppice
bois taillis + paturage	deciduous coppice + pastureland
bois en ligne	deciduous wood in line (presumed plantation?)
paturage + bois en ligne	pastureland + wood in line
pré-marais + bois	wet hayfield (perhaps le mojasir?, see Chpt. 8) + deciduous wood
bois fayard	beech wood
petit bois fayard	small vegetation beech wood
gros bois fayard	large vegetation beech wood
bois fayard en ligne	beech wood in line (presumed beech plantation?)
bois pin + fayard	Scots pine (?) + beech wood
bois à tremble	aspen wood
bois de chêne	sessile oak wood
bois de vernes	grey alder wood
bois de frêne	ash wood
bois défriché	cleared (deciduous and/or coniferous?) wood

In contrast to this detailed fiscal classification of woody deciduous vegetation--in which, because of the non-uniform nature of many parcels, several non-deciduous and non-woody biotopes were included in combination form--elderly Alluetains recognized only one "woody" deciduous folk biotope with major economic importance (lo rɛbje/"the deciduous coppice"). Several variants in which one species dominated (e.g. lo bwe dɔ trɛ̃blo/"aspen wood") and one folk biotope of secondary economic importance (la brusaje/"the brushland") were also recognized. It is possible that a third folk biotope of woody deciduous vegetation also existed where dense stands of green alder could be found near timberline.

Lo rɛbje: the deciduous coppice and its variants

Early this century, lo rɛbje constituted a botanically diverse folk biotope dominated by a mix of deciduous "tree" (l arbro) and "bush" (lo bwaesɔ̃) taxa (see Table 9c).

Table 9c: The Folk Phytocoenosis of Lo Rɛbje
(* = distinctive taxa)

la agasja/Robinia pseudacacia L./False acacia
l aje/Sorbus aria (L.) Crantz./Whitebeam
l arbro/Tree*
la barlɔtir/Prunus spinosa L./Blackthorn
la bjola/Betula pendula Roth./Silver birch
lo bwaesɔ̃/Bush*
lu dɔa/Digitalis grandiflora Mill./Large yellow foxglove
d ɛpñe/Rosa canina group/Dog rose
lez ɛrablo/Acer campestre L./Field maple
lo fɔ/Fagus sylvatica L./Beech*
lo frɛno/Fraxinus excelsior L./Ash*
lo frɛno sar'vadzo/Sorbus ssp./Whitebeam + Rowan
la gɔra/Salix caprea L./Goat willow
lo grata pɔdz/Daphne mezereum L./Mezereon

Table 9c: Continued

la kɔtra/Corylus avellana L./Hazel*
lo krwaezn̥e/Malus sylvestris Mill./Crab apple
le krwaezole/Ribes uva-crispa L./Gooseberry
lo pɛrʃe/Pyrus communis L./Wild pear
lo plano/Acer pseudoplatanus L./Sycamore*
lo poblo/Populus nigra L. CV. Italica/Italian poplar (localized)
lo pri də sɛ̃ martɛ̃/Crataegus monogyna Jacq./Hawthorn
lo ptʃe/Prunus padus L./Bird cherry
la sabin/Juniperus sabina L./Savine (localized)
lo savy blɑ̃/Sambucus nigra L./Elder
la tatola/Viburnum latana L./Wayfaring tree
lo tijəl/Tilia ssp./Lime
lo tme/Sorbus aucuparia L./Rowan*
lo trɛ̃blo/Populus tremula L./Aspen*
le θrize/Prunus avium L./Wild cherry*
lo tsɛn̥o/Quercus petraea (Matt.) Liebl./Sessile oak
la tʃɛvrafwir/Lonicera xylosteum L./Fly honeysuckle
la vɛrna/Alnus incana (L.) Moench/Grey alder
la vjabla/Clematis vitalba L./Traveler's joy

The actual species combinations in lo rɛbje within different areas of the commune varied considerably depending on elevation and exposition, etc. Groups of parcels classed as rɛbje by elderly Alluetains were often found in fairly close proximity to each of the hamlets (generally between hayfields/lu pra and coniferous forest/la fore, in difficult terrain). In the lower reaches of the commune, however, the folk biotope became less easily recognizable where it intergraded with a Scots pine forest on the steep hillside above Brides-les-Bains. While a systematic breakdown of ownership was not done, the majority of land classed in this folk biotope appears to have been privately owned, though some communal ownership can be demonstrated. All evidence indicates that most parcels were traditionally maintained at an artificial woody vegetational stage of

natural succession. Trees were periodically removed from lo rɛbje to provide household firewood (lo bwe a borla) and to make tools and utensils, etc., and leafy branches were annually lopped to provide winter forage for domesticated animals. The traditional rɛbje thus appears to have been managed as a coppice (in French, "taillis") and on several occasions elderly people selected this French term to describe the folk biotope. While a clear conservation ethic was expressed by several Alluetains with regard to its exploitation--with emphasis on restricting overcutting and assuring sustained production, especially of firewood--most details of management are poorly known (e.g. the cycle of cutting, interval between cuts, etc.). References from the "Cadastre Sarde" of 1732 (see Table 9b) to "wood" and "beech"..."in line" would suggest that some parcels at least were planted at this early date. Nevertheless, there was no recollection by elderly Alluetains of the deciduous coppice ever having been planted. From the late 19th century, as the traditional economy increasingly collapsed, and since the first half of this century, when electricity was installed and oil-burning stoves became progressively affordable, the deciduous coppice has been less and less exploited for firewood and other products (the surface in communally owned coppice in all of Savoie similarly dropped from 1876 to 1928...Mougin 1931: 506-507). This evolution, coupled with the rapid degradation of adjacent abandoned hayfields (lu pra) and cultivated fields (lu tsã), some of which were already extensively covered with woody vegetation by early this century, has led to one-time well defined and managed

parcels of this folk biotope becoming today nearly indistinguishable from the surrounding vegetation.

It seems clear, nevertheless, that the primary traditional function of lo rɛbje was to produce household firewood. In 1732, not only the Alluetain peasantry, but also the lay and ecclesiastical aristocracy and the bourgoisie of Moutiers, owned coppice in the valley (see Table 9a), apparently in all cases for the production of fuel. In Les Allues, the preferred species, sessile oak, beech, and grey alder if they could be had, were saved for heating houses (actually often the enclosed kitchen only) and for cooking. Wood from communally owned coppice was cut by corvées and used to heat communal buildings (e.g., the public schools...see also Perouse 1911:80). The lesser quality woods (aspen, goat willows, etc.) were burned for other domestic chores (making l'eau-de-vie, cheeses, etc.). Trees were usually cut in early spring or late fall when the labor demands from other sectors of the economy were reduced. The wood would be brought out on sleds (usually with la lwedz a bre/"the hand sled"), either in early spring when snow was still on the ground, or in winter. Hardwoods (ash, hazel, sycamore, wild cherry, etc.) would also be periodically removed as needed to make agricultural implements and tool handles, etc., or might be burned. Ash and sycamore trees especially were lopped of their branches in fall, creating distinctive pollards. Their foliage was dried and fed to sheep and goats in winter.

In several areas of the commune, the deciduous coppice was dominated by single species (this was also noted by the "Estimators" in 1732, see Table 9b). Where such single-species dominance extended over a large area, such as an aspen stand on the right valley wall between the hamlets of Le Villaret and La Gittaz, the term lo bwe ("the wood") was sometimes applied (e.g. lo bwe də trɛ̃blo/"the aspen wood"). In cases of less extensive single-species stands, it was more common to say simply of them, "there is some beech" or "there is some grey alder, etc....in the deciduous coppice," adding the place name (lo ma/"lieu-dit") where such concentrations were found. It is probably best to consider these groupings to be simple variants of the "ideal" mixed deciduous coppice.

Another example of dominance by a single deciduous woody species was also noted by Alluetains, though not ordinarily in relation to lo rɛbje. At cooler, more humid sites within the upper coniferous forest as well as near timberline, often near small watercourses or springs, green alder (lez ar'kɔse) could be found growing in dense stands. In many cases, such sites were located in the higher "commonlands" (lu kmɔ̃), not far from the alpine pastures or "alpages" (see Chpt. 10). The term for the plant itself was usually also applied to such stands, thus seemingly being used polysemously to refer both to the plant as well as to the folk biotope where it was found.[2] Because of its proximity to the "alpages" and its rapid regeneration after being cut, green alder was extensively used as a fuel for summer cheese-making.

The secondary "woody" deciduous folk biotope: la brusaje/ "brushland"

Though said by elderly Alluetains to be closely related to lo rɛ̀bje, la brusaje ("brushland") can probably best be identified as a second "woody" deciduous folk biotope. Clearly, however, the separation of the two biotopes was based more on an appreciation of differences in degree than on a distinct and unambiguous dissimilarity. Apart from differences in the way the two folk biotopes were exploited, simply put, la brusaje was dominated by "bushy" species (lu bwaesʒ) rather than by "trees" (luz arbro...see Table 9d). A similar statement can be made about the perceptual separation between brushland and pastureland (lo paturadzo, see Chpt. 10), which was dominated by herbaceous species (d ɛrba). In Les Allues, brushland often buffered the forest from pastureland in the common grazing areas above the hamlets. While clearly herbaceous vegetation dominated in pastureland, many woody species could also be found in "rougher," rocky areas and in transition areas between pastureland and forest, etc. It is difficult to say at what point woody species' density in pastureland would trigger use of la brusaje to describe a given site.

While widely found in such areas at some distance from the hamlets, fairly well defined zones of brushland were also maintained traditionally in areas of difficult microrelief within the cultivation zone, often in quite close proximity to the hamlets (e.g., in and around rock piles--lu murdʒe, in ravines--le ravne, in exceedingly rocky terrain, etc., on both private and public land). Maintenance of such sites in brushland was accomplished primarily by grazing animals

in them in spring and by removing trees as they reached heights that would cast shadow on surrounding cultivated lands.

Several useful plants (medicinal, edible and "industrial") were also periodically extracted from this folk biotope as the need arose. However, the great diversity of brushland--extending through several natural climatic zones--ensured that this folk biotope's floristic content varied significantly at different elevations. Alluetains recognized this, generally adding a descriptive epithet or place name to differentiate between brushland at higher altitudes where it buffered pastureland and forest, and brushland in and around cultivated areas at lower altitudes. Table 9d presents the folk phytocoenosis of la brusaje; those taxa found in rocky areas or in buffer zones associated with common pastureland are marked.

Table 9d: The Folk Phytocoenosis of La Brusaje
(* = associated with common pastureland)

lez ã'bryne/Vaccinium uliginosum L./Northern bilberry*
lez ãpwe/Rubus idaeus L./Raspberry*
lez ãpwe nɛre/R. fruticosus L./Bramble
lez a'rkɔse/Alnus viridis (Chaix) DC./Green alder*
la barlɔtir/Prunus spinosa L./Blackthorn
lo bwaesɔ̃/Bush
lo dzɛnɛvro/Juniperus communis L./Juniper*
lez ɛpne/Rosa canina group/Dog rose
la gɔra/Salix caprea L./Goat willow
le juθre/Vaccinium myrtillus L./Bilberry*
la kɔtra/Corylus avellana L./Hazel
lo mjãfjã/Amelanchier ovalis Med./Amelanchier
la pɛtɛrla/Rhododendron ferrugineum L./Alpine rose*
lo pri də sɛ̃ martɛ̃/Crataegus monogyna Jacq./Hawthorn
le rɔ'dzɛte/Vaccinium vitis-ideae L./Cowberry*
lo savy blã/Sambucus nigra L./Elder
lo savy rədzo/S. racemosa L./Red-berried elder
la tatola/Viburnum lantana L./Wayfaring tree
la tʃɛvrafwir/Lonicera xylosteum L./Fly honeysuckle
la vjabla/Clematis vitalba L./Traveler's joy

By the mid-20th century, this once much less common and apparently fairly well bounded folk biotope had gained large parts of the commune as a result of the abandonment of once intensively managed lands (especially pastureland/lu paturadzo, hayfields/lu pra and cultivated fields/lu tsã). Whereas in the past la brusaje had its role in a well manicured and ordered landscape, today it is negatively perceived as an often bitter reminder of the downfall of a once flourishing economy and way of life.

The "woody" coniferous folk biotope: la fore/"the forest," and its variants

Though fewer in number and more difficult to interpret than their deciduous counterparts, many coniferous forest property types were also recognized in Les Allues in 1732 by the "Estimators" of the Sardinian King (see Table 9e).

Table 9e: Coniferous Vegetation Land Types from the "Cadastre Sarde": Les Allues (ADS, C1984-C1990)

Cadastre Sarde	Suggested approximate English Translation
bois sapin	Norway spruce (the common coniferous forest species)
pré + sapin	hayfield + spruce
bois noir	coniferous forest (presumably Norway spruce...see ADS 20F11, Fonds Perouse, Les Allues; but also perhaps dense Siberian stone pine or silver fir stands?)
bois noir + pré	coniferous forest + hayfield
bois noir + paturage	coniferous forest + pastureland
bois noir + rocher	coniferous forest + boulder

Table 9e: Continued

bois noir + brouss.	coniferous forest + brushland
bois noir + pré + brouss.	coniferous forest + hayfield + brushland
pré + bois noir + teppe	hayfield + coniferous forest + once cult. field (3)
bois mêlé	deciduous trees + coniferous trees mixed (?)
bois défriché	cleared forest or coppice (?)
bois d'aute futté	mature Norway spruce of the first quality (see Guinier 1947:160 for a definition of "haute futaie")
pré + bois d'aute futté	hayfield + mature, first quality spruce
bois pin	pine forest (Scots pine, Siberian stone pine or both?)

While this classification provides a clear picture of the range of land types with coniferous elements at the individual property level during the traditional period, it does little to inform us on the manner in which the coniferous vegetation was ecologically perceived by the Alluetain peasantry itself. The constraints imposed by the need to accurately describe individual parcels for fiscal purposes, many of which were non-uniform, created many classes that would otherwise not have been formulated by Alluetains. In fact, the ethnoecological classification of land dominated by conifers was much simpler. By eliminating from these various 1732 classes the non-coniferous and non-woody land types included with conifers in combination form, the remaining types would all have been subsumed by the single "woody" coniferous folk biotope recognized today by elderly Alluetains: la fore/"the forest." Nevertheless, much as several vegetational and/or structural distinctions in the dominant spruce

forest were noted in 1732 by Sardinian "Estimators" for fiscal purposes (e.g., bois pin /"Scots pine"; bois défriché/ "cleared wood"), early this century where coniferous species other than spruce occurred in pure (or nearly pure) stands, or where openings occurred in the forest, ecological variants of la fore were also recognized by Alluetains. Such distinctions had clear economic relevance.

While waxing and waning over the years, la fore appears to have consistently covered large areas of Alluetain territory from the lower montane zone (from approximately 700 m) to the upper subalpine zone (to over 2000 m). Coniferous forest was mostly relegated to steeper, rockier sections of the lower and middle commune, and on both valley walls above the mid-commune habitation zone (see Fig. 2d). However, at several particularly abrupt points within the habitation zone (e.g., between Le Villaret and La Gittaz), coniferous forest penetrated right to the edge of the Doron. Though its greatest mass was dominated by Norway spruce, because of differences in altitude, exposition, substrate, soil humidity, etc., the coniferous forest was nevertheless botanically diverse. Where single, non-spruce coniferous species dominated, Alluetains recognized forest variants, employing the "head" term of the folk biotope, la fore, modified by the conspicuous single-species term. On one hand, a Scots pine forest (la fore də pɛ) occupied a large section of the lower commune below the habitation zone on the steep, calcareous hillside above Villarlurin and Brides-les-Bains, between approximately 700 and 900 m. On the other hand, toward the southern, higher end of the valley, the small

Tveda plain at 1700 m was completely surrounded by Siberian stone pine forest (la fore d arəla) which extended to over 2000 m. In between, forested areas were dominated by spruce. It was to pure or near-pure stands of this essence that the unmarked term la fore (understood as la fore də saepɛ̃/"the spruce forest") was applied polysemously, much as the type species of an immediately superordinate taxon might be labeled polysemously by the same term(Hunn 1977:36). Alluetains noted and named many woody and herbaceous folk taxa common to this economically important set of habitats; most corresponded at a one to one level to Linnean species (see Table 9f).

Table 9f: The Folk Phytocoenosis of La Fore

l arbro/Tree
lez ar'kɔse/Alnus viridus (Chaix) DC./Green alder
l arəla/Pinus cembra L./Siberian stone pine
la barba də saepɛ̃/Alectoria jubata, etc./hanging forest Moss
lo dzɛnɛvro/Juniperus communis L./Juniper
lez ɛθrele/Fragaria vesca L./Wild strawberry
la fyrdzɛta/Polypodium vulgare L./Polypody
le kokamɛle/Mushrooms
lo ljɛr/Hedera helix L./Ivy
lo mlɛz/Larix decidua Mill./European larch
la mɔsa/Moss
lo pã di kuku/Oxalis acetosella L./Wood sorrel
lo pɛ̃/Pinus sylvestris L./Scots pine
la pɛtɛrla/Rhododendron ferrugineum L./Alpine rose
lo saepɛ̃/Picea abies (L.) Karst./Norway spruce
lo tsɛ̃da/Achnatherum calamagrostis (L.) Beauv./Calamagrostid feather-grass (localized)
lo varno/Abies alba Mill./Silver fir

Openings (lez ɛklɛrsi) created by avalanches or by lumbering activities, though labeled by a term general to openings or clearings of many kinds (e.g., openings in a hayfield, in the clouds, etc.),

were also economically important and were recognized to form a forest variant (or "sub-biotope") with particular vegetational characteristics (see Table 9g).

Table 9g: Folk Taxa Associated with Lez ɛklɛrsi in the Forest

lez ăpwe/Rubus idaeus L./Raspberry
le juθre/Vaccinium myrtillus L./Bilberry
lo plɔmatso/Epilobium angustifolium L./Rosebay willowherb
lo tme/Sorbus aucuparia L./Rowan

A systematic breakdown of coniferous forest ownership was not undertaken. However, the majority of forested land appears to have been owned by the collectivity in large tracts. While most families also possessed forest parcels, these were usually small and highly fragmented (see Table 9a). In both cases of public and private ownership, forest vegetation can best be described as paraclimax. Though heavily modified by human activities, the dominant woody vegetation was only sporadically removed here and there by clearcuts. These usually occurred on private land. Rather, in most lumbering activities individual trees were cut selectively and removed without radically changing the main features of the presumed primitive vegetation. While lumbering, mostly for Norway spruce, has steadily increased over the last century, and traditional forest uses have declined, several customary forest-related activities were observed during fieldwork. However, the traditional use of the forest was much more diverse than forest use today. The Alluetain forest was a major

source of wealth and well-being, mostly to individuals and to the collectivity, but also on occasion to external powers.

The traditional use of the forest and its variants

The scope of traditional forest use in Les Allues was enormous: from the procurement (gathering, hunting) of a wide range of individual organisms to satisfy specific needs, to the protection of hamlets and cultivated properties against rock slides and avalanches by the forest mass. Both privately and collectively owned properties of coniferous forest supplied large quantities of fuel, lumber, tool-making material, and medicinal, alimentary and other culturally significant plants to the individual families. On occasion, through the sale of timber and through forest-related wage labor, forested properties generated important monetary revenues both to the collectivity and to individuals. In the past, the communally owned forest was also regularly opened to grazing of sheep and goats (see Appendix 1). During the period in which salt was produced by the House of Savoie from the natural salt-bearing springs at Salins near Moutiers (16th - 19th centuries), Les Allues, like its neighbors, was obliged to deliver firewood for the high energy consuming salt-extraction process. At times of armed conflict, the Alluetain forest was similarly subjected to outside demands. Most of the activities occurring in the forest, with the exception of berry gathering, were the responsibility of Alluetain men.

Firewood

Though difficult to demonstrate without direct measurement, it appears that the coniferous forest, rather than the deciduous coppice, provided most of the wood for the various combustible needs within the commune. While deciduous hardwoods were preferred for inside cooking and heating, spruce was probably more widely used for this purpose, as it was for all exterior fires (bread-making in communal ovens,[4] cheese-making in the "alpages," the "montagnettes" and in the hamlets, cooking calcareous rock to make plaster, distilling "l'eau-de-vie," etc.). The proximity of the various essences to where firewood was needed often conditioned what was burned: summer cheese-makers in the "alpages" above the Tveda plain more often burned Siberian stone pine and green alder than spruce early this century; the lime kiln below Le Villard appeared to have burned mostly Scots pine, etc. Firewood for these various activities was obtained in several ways. Personal fuel needs were met by removing one's own wood from private forest holdings (much as in the deciduous coppice) and through institutionalized procurement from the communal forest. Communal combustible needs, much less important than individual family needs, were usually supplied by forming corvées and removing firewood from collectively owned properties.

All community members had rights of estovers to an annual allotment of wood from the communal forest. Fallen, sick or dead trees (called lo ʃabli/"le chablis"), or those felt by the government

forestry agent to be interfering with better quality trees, constituted lo bwe d afo'jadzo ("le bois d'affouage"). Early this century, the municipal council met each year to dispense this wood to the population. An announcement was made and those families desiring an allotment would sign up at the mayor's office. In late summer or early fall, this wood would be marked by the forestry agent, split into lots, and felled if necessary by a lumberjack engaged by the commune for this purpose. Lots would be drawn and the heads of household would enter the forest to see what they had received. Wood of lesser quality by definition, lo bwe d afo'jadzo was ordinarily used as fuel, though nicer pieces might sometimes be sawn. Firewood obtained in this manner appears to have been a major source of combustible within the commune. It was usually removed in early winter, cut up the following spring and split and stacked that autumn for burning the second winter. Municipal council members, the forestry agents and the lumberjack(s) would generally receive supplementary lots. The mayor would receive the nicest lot of all. If the collectivity was in need of cash, some of the "chablis" might also be sold.

A second institutionalized means of obtaining firewood from the communal forest for personal needs was by participating in la kɛva də le mɔtse/"the corvée of the tree trunks." A day in late summer or early fall (September or October) was chosen by the forestry agent and the smaller dead wood (lo bwe mor) was cleaned from the forest floor,

roads and paths. Participants were permitted to remove for their own use all the dead wood they could gather up during a day's work.

Firewood needed for collectively owned cheese-making operations or for heating communal buildings (mayoral building, schools, etc.) would be obtained from communally owned coniferous forest or deciduous coppice through corvées.

Structural timber, lumber, and tool-making wood, etc.

When any head of household needed structural timbers, carpentry lumber, roofing material or important quantities of tool-making wood, etc., he considered it his right, whether he owned private forest or not, to request that his needs be supplied by the communal forest. Early this century, a formal request would be submitted to the municipal council and, if need could be demonstrated, it was usually accepted. However, if large private parcels were owned by the demander, it might not be. If accepted, after a small sum was paid to the commune, a mature, well-formed spruce tree would be marked by the government forestry agent for cutting. Such trees, generally of considerable height and girth, were sawn in early spring or in late fall when other economic activities were reduced. They would be removed in winter when the snow-covered ground made extraction--using a special timber sled, l ɔrsa, pulled by a mule--much easier.

While it was usually somewhat delicate obtaining information about contraband, it appears to have been commonly cut in small quantities (e.g., one tree at a time) early this century. Most elderly Alluetain male informants admitted to having cut contraband

wood on communal property at some time in their lives, claiming that such activities noticeably increased during the two World Wars when government surveillance of forests diminished. Such wood might be brought to the house and used legitimately. But lacking the forestry mark, if financial gain was the motive for felling a tree, it was considered more prudent to dispose of it as rapidly as possible to avoid being caught and fined. Such contraband was either sold at Moutiers or within the commune to not totally scrupulous mill owners. If apprehended, and in the event that need could be demonstrated, such activities were usually tolerated (see a similar conclusion by Niederer 1980:46). However, for some men contraband wood was undoubtedly a periodic source of ready cash.

Forest related activities which generated money, and other exterior pressures on the Alluetain forest

While selling contraband was an illegal way of obtaining cash from the forest early this century, there were also several perfectly legal methods, both direct and indirect, of gaining revenues from the coniferous forest. For example, individuals were free to sell standing, felled or sawn wood from private properties. Firewood and spruce bark (for tanning hides) might also be sold. No evidence has been found, however, that Alluetains made charcoal, widely produced elsewhere in the Alps (Niederer ibid.:47). While clearcuts were, and still are, made from time to time on small private parcels, this practice was generally avoided. Most Alluetains possessing forested land clearly did not wish to "drain their reservoirs" all at once and

it was more common for individual trees to be removed periodically for sale. This means of obtaining cash appears to be old in the Tarentaise. In 1756, for example, "wooden planking" ("bois en planche") constituted a source of revenue in the commune of Landry in the Middle Tarentaise (ADS, C1426) and it is likely that such was also the case in Les Allues at the same period. In 1819, Alluetain revenues from the sale of "essences sapins" ("spruce trees") represented the fifth highest total of the 55 some Tarentaise communes (ADS, 1FS594...though it is not clear if these were communal revenues or private and communal revenues, etc.).

Several forest-related business and wage-labor opportunities also existed in Les Allues early this century. The greatest number of such jobs (though probably less than 10 any given year) were offered to local men for the removal of down timber from cuts made by the larger private owners or by the commune. These were winter jobs in which locals extracted the wood using their own sleds and mule teams (lumberjacks were usually brought in from outside). Three privately owned sawmills (le res) were also operated in the commune early this century; these supplied monetary revenues to their owners and to their several local employees.

From the 16th through the 19th centuries, the House of Savoie extracted salt from a natural mineral spring at Salins at the entrance to the Bozel valley (Hudry 1978:72). The salt was produced through a wood-fired evaporation process demanding large quantities of fuel (1000 "toises" or 4750 m^3 per year in the early 18th century...Baud

1936; Meilleur 1983:132, for the calculation). Those more accessible communes of the Middle Tarentaise provided the major part of this firewood, while the more distant and less accessible communes such as Les Allues supplied smaller amounts (Les Allues supplied 20 "toises" or 95 m^3 in 1741 and 30 "toises" or 142.5 m^3 in 1749...ADS, C568). It is not clear how the cutting and delivery of this firewood was organized, from whose land (commune, individuals) it was removed, nor whether it was supplied as a form of taxation or was purchased like any other marketed commodity.

During wartime, wood was furnished to the various armies. In 1793, the commune provided "12 toises de bois" (57 m^3 of wood) to the (presumed invading Republican) army (AC, Serie D, No. 6:80). It is not clear how this wood was supplied, from whose properties it came or whether it was purchased or seized.

Gathering and hunting in the coniferous forest

Other than providing slide and avalanche protection to the habitation zone and supplying the major needs for wood (construction material, fuel, etc.), the coniferous forest also represented a valuable reservoir for alimentary (Siberian stone pine nuts, wild strawberries, etc.) and medicinal plants (polypody, silver fir, etc.) and for small products used in the domestic economy (spruce "sawdust," spruce branches, Achnatherum roots, etc.). Forest clearings (lez ɛklɛrsi) constituted especially important mid to late summer raspberry and bilberry gathering sites for Alluetain women. The forest was also regularly visited by children seeking toy-making material (tree moss,

etc.). While not of major significance, such products certainly contributed, by their uniqueness (e.g. spruce "sawdust") and by the diversity of their applications, to the well-being of the Alluetain households. The fact that the communal forest was always open to the removal of small, gatherable resources, and to the major wood products in times of emergency, clearly added an important dimension of security to the Alluetain way of life. After having learned about many of the better edible mushrooms within the last hundred years or so, Alluetains today seek such delicacies as chantrelles and bolets in the coniferous forest (Meilleur 1982).

While it is not the object of this dissertation to describe the relation between the Alluetain community and the fauna, the several animals hunted, trapped or otherwise procured from the forest will be mentioned in passing to underline the traditional multi-purpose role of this folk biotope. Several insects, for example, were removed from the forest. Attempts were sometimes made to locate and domesticate wild honeybees (Apis mellifica), and wood ant (Formica rufa) colonies (needles included) were heated, placed in sacks and put on arthritic joints. Though the forest cannot be considered an important traditional hunting zone in Les Allues, as the pasturable zone was (see Chpt. 10), birds of the upper forest, like the nutcracker (Nucifraga caryocatactes), the black grouse (Lyrurus textrix) and the hazelhen (Tetrastes bonasia) were sometimes shot. The fox (Vulpes vulpes) and both species of marten (Martes martes + M. foina) were trapped or shot for their pelts, and sometimes eaten. The red squirrel (Sciurus

vulgaris) and the brown hare (Lepus europaeus) were both hunted for their meat. The wild boar (Sus scrofa), the red deer (Cervus elaphus) and the roe deer (Capreolus capreolus), all of which have appeared or have been introduced to the commune within the last 20 years or so, are today important forest game animals, adding a new dimension to forest use.

Dictionary Entries

Section 9.a.: The Folk Taxa of the Woody Folk Biotopes

lez ã'bryne. Vaccinium uliginosum L. Northern bilberry

(See Section 10.a.)

l agasja. Robinia pseudacacia L. False acacia

Apparently introduced to Europe several centuries ago from North America, false acacia is now a fairly common tree on the steep hillsides at the lowest extremities of communal territory above Brides-les-Bains, where is grows wild. False acacia was considered by Alluetains to be good firewood and to furnish strong tool handles and vine props, though it does not appear to have been much used. It is possible that it was originally brought to the region for this last purpose (see Dion 1977:7).

l aje. Sorbus aria (L.) Crantz. Whitebeam

Common in mixed coppice, as well as in isolated groups on lower, open commonland, whitebeam produced berries that were macerated in alcohol or even distilled early this century. The berries, known to be edible, persisted on the branches sometimes until spring. They were attractive to pine marten (Martes martes) and to stone beech marten (M. foina) in winter, making the several whitebeam stands favorite places to set small springtraps during the cold season. On occasion, whitebeam branches were used as de jɔre ("bundle fasteners") to wrap bundles (de dzavɛle) of ash and sycamore, or other material to be transported. L aje and lo tme (S. aucuparia L., see infra) formed for many Alluetains a superodinate taxon usually labeled by the term lo frɛno sarvadzo ("wild ash," see infra). On occasion, the term l aje was used polysemously to label this same taxon.

lez ãpwe. Rubus idaeus L. Raspberry

Early this century, wild raspberries were commonly gathered by women in late summer and early fall in forest clearings (lez ɕklɛrsi), in and around rock piles (lu murdʒe) in once cultivated fields and in "rougher," rockier areas of communally owned land. Before jam and jelly making techniques became available this century and money could be allotted to purchase sugar, raspberries were mostly consumed fresh, in fruit "salads" with milk or cream or macerated in "l'eau-de-vie."

lez ãpwe nɛre, la rɔ̃ts. Rubus fruticosus L. Bramble

Common in lower commune brushland, along road edges, in and around rock piles in abandoned cultivated fields and vineyards, bramble was a useful plant in several respects, even though it was eliminated from cultivated biotopes as a weed (la krwe ɕrba). Fruit (le myre) were gathered both by children and adults, eaten fresh and in fruit "salads," or in recent years prepared in jam or jelly. The leaves were chewed or boiled--and the resulting decoction gargled--against sore throat.

l arbro. Tree

L arbro ("tree") is probably best treated as a life form taxon. As in most languages, the semantic boundaries of the term "tree" are fuzzy in Les Allues; the distinction between a small "tree" and a large "bush" (lo bwaesɔ̃, see infra), for example, is rarely well delineated. Deciduous, coniferous, wild and domesticated trees (e.g., fruit trees = luz arbrə frytʃe, see Section 6.a.) were subsumed by this taxon.

lez ar'kɔse. Alnus viridis (Chaix) DC. Green alder

Green alder is a common bush (lo bwaesɔ̃) found in dense, sometimes extensive stands along small watercourses (lo lɔ̃ də lɛva), in ravines and in other cool, humid sites near the upper margin of the coniferous forest. While variously associated by Alluetains with

forest, brushland or degraded common pastureland, just as often green alder sites appeared to have been viewed as a habitat type in their own right, approaching the status of a distinct folk biotope. Because of the proximity of this species to the "alpages" and its rapid regeneration after cutting, green alder was extensively used as a fuel in summer cheese-making (see Chpt. 10). Branches from plants growing closer to the habitation zone were used to make brooms, and because of their flexibility and durability, were commonly made into lez arvje: upper, exterior walls of hay barns (green alder branches were woven around vertical spruce poles, permitting air flow through and over the hay). Smaller, finer branches might be used on occasion as de jəre--bundle fasteners.

l arɔla. Pinus cembra L. Siberian stone pine

At approximately 1700 m and slightly beyond mid-point of its 19 km length, the valley of Les Allues opens into a 1.5 km long plateau --lo plâ dɔ tvɛda/"the Tveda plain"--bordered on the west by the Doron des Allues and nearly completely surrounded by coniferous forest dominated by Siberian stone pine. While individual trees of this quite rare European species could be found elsewhere in the commune, the basin surrounding this plateau was the primary focus of the economic action directed toward this highly valued plant. In this part of the commune, the Siberian stone pine can be found growing to over 2000 m and it represented here a significant source of combustible for several of the Alluetain cheese-making "alpage" operations (see Chpt. 10). The upper margin of this forest was falling prey early this century--and probably much earlier--to significant summer cheese-making demands for firewood. Below this intensively exploited upper margin, in more favorable growing conditions where the trees attained diameters up to one meter, the forest was used more selectively. When need could be demonstrated to the communal authorities, individual plants were removed to make watering basins. Such basins were especially appreciated where pigs were kept; the porcines would chew up most other types of wood but were repulsed by the stone pine wood. Mill parts, especially those that were permanently underwater, were also often made from wood of this species. The essential oils contributing to this high durability were also put to good use in armoires. The protection Siberian stone pine offered against insects made it the preferred wood for furniture used to store clothes. A "rich" peasant might try to find such wood for his coffin. Highly pitched trunks (lu tjɔ) might be split into small pieces and used to start fires (see Meilleur 1985:63 for a similar use of Mugo pine/Pinus uncinata Ramond in the neighboring Haute Maurienne).

Siberian stone pine trees also produced edible nuts that were sometimes sought in fall by Alluetain families. Cones usually had to be knocked from the trees with long hazel poles (la kɔtra/Corylus avellana L., see infra). Men would climb into the trees and strike the cones while the women and children gathered up the booty. Those cones already on the ground had usually been liberated of their healthy nuts by the highly selective nutcracker (lo pjɔtsar/Nucifraga caryocatactes) which was said to tap on each nut to determine its desirability. Once a quantity of cones was gathered, they would be soaked in water for two or three weeks in burlap or hemp sacks. Soaking made it easier to extract the nuts (lu pinʒ); twisting the water-soaked cones was then said to send the nuts "shooting out." They would be dried in a protected place, often outside on a balcony if good weather prevailed.

la barba (də saepɛ̃). Alectoria jubata + Hypogymnia tubulosa + Usnea sp. Hanging forest moss

Hanging moss is common on mature trees in the Norway spruce forest. In gluing this moss to their upper lips and faces with spruce resin, children amused themselves by pretending to be "hairy-faced" adults.

la barlɔtir, le barlɔ'tire, le bar'lɔte, lez ɛpne barlɔ'tire, lez ɛpne nɛre. Prunus spinosa L. Blackthorn

This common bush (lo bwaesʒ) of brushland and deciduous coppice in the vineyard zone (see Section 7.a.) produced medium-sized dark blue fruit (sloes) which were sometimes macerated in alcohol and served on social occasions. In late autumn, when the fruit had dried on the bushes and had perhaps been frozen at least once, they were consumed by children. The bushes were heavily armed with rigid spines (thus the term lez ɛpne nɛre/"the black spines") and people were careful to avoid being pricked when gathering berries or working around the plants.

la bjola. Betula pendula Roth. Silver birch

While silver birch was associated with deciduous coppice by some, for others it was less often associated with one specific folk biotope. It was said, rather, to grow in small, independent stands on private or public pastureland, in or near moderate wetland (la mojasir) and in deciduous coppice. This disagreement is probably the result of its scarcity in the valley; each informant appeared to associate the silver birch with a folk biotope, closest to his or her residence, in which one or two trees might be found. The silver birch was put to several traditional uses in Les Allues: collars for mules, sled parts, bundles of branches were attached tightly together to make brooms (le rmɛse), and its wood was sometimes burned.

lo bwaesɔ̃. Bush, Scrub

Lo bwaesɔ̃ is probably best translated as "bush": both wild and domesticated, low-growing, often multiple trunk, woody plant. More often than not the term is employed in a negative context, suggesting that "scrub" might also be an appropriate translation. All the low-growing, shrubby plants with spines (blackthorn, dog rose, hawthorn, etc.) and several inermous shrubs or small trees (green alder, field maple, hazel, elder, etc.) were considered to be de bwaesɔ̃ (using the indefinite plural article). Lu or de bwaesɔ̃ was the dominant life form of the brushland folk biotope (la brusaje) and to a much lesser extent, was present in the deciduous coppice. Several "bushes" were also found in other folk biotopes, interspersed here and there in "rougher" areas of common pastureland, for example (see Chpt. 10).

lu dɥa, la kɑ̃'pɑ̃na. Digitalis grandiflora Mill. Large yellow foxglove

Mostly associated with deciduous coppice and forested folk biotopes (e.g., open areas and edges in both coppice and forest), large yellow foxglove was known in Les Allues only as a children's toy. Children would place the long, yellow tubular flowers on their fingers (lu dɥa) in fun. The term is considered by some to be an invalid "children's name," though most older people knew the plant that was being discussed when the term was proposed. Several Alluetains called the flower la kɑ̃'pɑ̃na, the general term for bell or tube-shaped flowers that were not otherwise more specifically named (see Section 8.a.).

lo dzɛnɛvro. Juniperus communis L. Juniper

Two forms of juniper--one upright and the other a low-growing "midget"--were recognized in Les Allues, just as the professional botanist distinguishes subsp. nana Syme from the erect form of the species. Much more common, culturally important and visible in Les Allues than the erect form, the low-growing subsp. nana was the primary referent for the dialect term. While considered by some to be a forest species because of its association with the upper, dryer margins of the coniferous forest, it was equally if not more often associated with "rougher" areas of common pastureland (lo kmɔ̃, see Chpt. 10) which were approaching brushland (la brusaje) in their "woodiness." Juniper berries were gathered in late fall and macerated in "l'eau-de-vie"; this concoction was administered against colds and flu. Those families possessing bed warming pans sometimes put juniper berries into the live embers, producing a much appreciated deodorizing and fragrant smoke. When juniper and other woody species (alpine rose, bilberry, northern bilberry, etc.) became too dense in common pastureland, this vegetation might be burned. Corvées were then formed and the woody plants were pulled or dug up. Naturally "bent" roots of juniper were saved and used to make hooks for securing loads with ropes, etc.

lez ɛpne. Rosa canina group, and spiny-armed plants in general (Berberis vulgaris L., Crataegus monogyna Jacq., Ribes uva-crispa L.). Dog rose

Many forms of this aggregate rose species can be found today in and around rock piles (lu murdʒe) in abandoned but once cultivated fields, in brushland, along road and path edges and in deciduous coppice. Wild rose bushes were generally avoided because of their formidable spines (lez ɛpne), though they might be made into movable enclosures to keep animals and especially chickens from cultivated areas like gardens. The fruit (le grate ky) were sometimes made into jam. The term was extended to most spiny-armed plants.

lez ɛrablo. Acer campestre L. Field maple

This small tree or large bush with multiple trunks was not well known to many elderly Alluetains, though it is a fairly common plant in the lower deciduous coppice. However, several people from the lower hamlets had used it, or knew of its use in making walking

canes. To do this, a young flexible branch was bent almost completely over without breaking it, forming a fairly closed arc. The bent part was then attached to the unbent branch and left for as long as a year or more to grow into this form. Sometime later, the branch was cut, the two parts trimmed, and upon removing the bark, the person was left with a sturdy, well-formed walking stick with a curved handle.

lez ɛθrele, lez ɛxrele. Fragaria vesca L. Wild strawberry

Common in small openings in the Norway spruce forest, wild strawberries were occasionally gathered in summer and brought to the house in small quantities. Like most other small fruit, they would be consumed raw, in fruit "salads" with milk or cream, or macerated in locally distilled alcohol and served on social occasions. More often, however, they were eaten opportunistically by people who were in the forest for other reasons. The term for the individual fruit (l ɛθrela, l ɛxrela) is rarely used; the entire plant is referred to in the plural form.

lo fɔ. Fagus sylvatica L. Beech

Beech is a common tree of the lower commune deciduous coppice where it was one of the most highly estimated and sought after species for firewood (lo bwe a borla). Occasionally a large, straight tree would be sawn into boards to make cases. These were used in recent years to transport grapes and to store all types of garden vegetables, apples, etc.

lo frɛno. Fraxinus excelsior L. Ash

Ash was exceedingly important to the traditional Alluetain high mountain way of life. It was widely found in diverse folk biotopes in the commune, but was most common in and on margins of the deciduous coppice. Trees could also be found on hayfield margins, in cultivated field rock piles, along road and path edges and even within the hamlets against outlying barns, etc. This distribution suggests that small, wild trees of ash had been transplanted closer in to the habitation zone to facilitate their exploitation (see a

similar conclusion by Verneilh 1807:445). Although not the only hardwood to grow in the commune, ash undoubtedly furnished the greatest quantity of wood for uses where strength and durability were primary concerns: for plow and sled parts, for tools, handles, roofing dowels, etc. Trees close in to the hamlets were annually lopped of their branches in fall, becoming pollards. These branches and those of the sycamore (see lo plano, infra) constituted leafy bundles (de dzavɛle) that were transported after being attached with de jɔre ("branch fasteners") usually made of goat willow (see la gɔra, infra). This foliage was dried and fed to sheep and goats in winter; the poles were used as tutors for string beans or for other odd jobs. The leaves from non-pollarded trees were macerated in water, sugar was added and the resulting drink served as a refreshing summer thirst quencher. A depurative tisane was also made by macerating ash leaves in hot water.

lo frɛno sar'vadzo. Sorbus aria (L.) Crantz. + S. aucuparia L. Whitebeam + Rowan

This term is generally applied to a superordinate taxon formed by the taxa l aje (S. aria) and lo tme (S. aucuparia, see supra and infra). However, it was also occasionally used polysemously to label the rowan alone.

la fyrdzɛta, la ptʃita fyrdzɛta. Polypodium vulgare L. Polypody

Common on moss covered rocks in the coniferous and mixed forest, the licorice-flavored root of polypody was chewed to relieve sore throat. Roots were also macerated in water and the resulting beverage was considered to be an excellent thirst quencher. The larger, more visible ferns were clearly recognized as forming a group, but little attention was paid to any of them other than polypody. However, the term la fyrdzɛta a sarpɛ̃ ("snake fern"), but also sometimes just la fyrdzɛta, was applied to the remaining ferns if someone was pressed into responding. Male fern (Dryopteris filix-mas (L.) Schott.) was occasionally transplanted into or near household gardens for decorative purposes (see la fyrdzɛta a sarpɛ̃, Section 5.a.).

la gɔra. Salix caprea L. and Salix ssp. Goat willow and the wide-leaved Willows in general

The common wide-leaved willows, but especially goat willow and its many hybrid forms, were sometimes transplanted in the form of long skinny branches from the deciduous coppice into the hayfield zone where they were used to locate property lines once the vegetation had grown above the rock markers (see Chpt. 8). Those small trees or large bushes that remained in "natural" habitats sometimes provided firewood to the Alluetain homes. The white, silky catkins (la mnona, le mnone) of mature plants constituted a sure and encouraging sign to Alluetains that spring was on its way. Catkin-covered branches were sometimes gathered to decorate the insides of homes.

lo grata pɔdz, lo lila sar'vadzo. Daphne mezereum L. Mezereon

Mezereon is common in Les Allues in deciduous coppice, in and around abandoned buildings and rock piles, even in some alpine pastures. It was not generally associated with any single folk biotope; each person had usually localized several plants in a particular spot and when seeking it from time to time, returned to this same spot. Directions to children would be given primarily with place names (lu ma/"les lieux-dits"). Its flowers, which appear before the leaves in early spring, were appreciated for their delicate beauty and fragrant odor (thus, lo lila sar'vadzo/"the wild lilac"). Mezereon was nevertheless much better known for its acrid-smelling bark, used to remove skin growths (le fjar) from domesticated animals. The inner bark was separated from the outer bark, then tied tightly around the base of the growth. This was repeated until the growth dropped off.

le juɔre. Vaccinium myrtillus L. Bilberry

(See Section 10.a.)

le kokamɛle. The superior Mushrooms in general

Mushrooms, with the exception of puffballs (see Section 8.a.), were not traditionally gathered in Les Allues. All mushrooms were thought to be poisonous and were not eaten. While several of the better edible mushrooms are known today and are gathered, this knowledge is of recent addition to Alluetain culture. Those that are known are called by their French names: "le bolet"/Boletus ssp., "la chantrelle"/Cantharellus ssp., "la morille"/Morcella ssp., etc. (see Meilleur 1982:171). Traditionally, and in general today, the mushrooms were known collectively as le kokamɛle (cognate to the French, "les columelles"/Lepiota ssp.). It was noted that mushrooms were sometimes consumed by cows in spring when the bovines were grazed at the edges and in clearings of both the deciduous coppice and coniferous forest, before they were moved to the alpine pastures. Consuming large quantities of mushrooms was said to turn their milk sour, though no other significant ill effects were described.

la kɔtra, lez alɔne. Corylus avellana L. Hazel

Common in the deciduous coppice, sometimes forming dense stands, hazel provided both nuts and a light, supple hardwood to the Alluetain economy. Hazel wood was put to many uses: fishing poles, dip net (la trobla) poles and frames, tutors for string beans, poles to knock down Siberian stone pinecones (see l arɔla, supra), tool handles and parts, snow-shoes (le rae'kɛte), etc. While most people usually referred to the plant when encountered as lez alɔne, clearly this term originally referred to the nuts alone; the term la kɔtra, less often used, was said to be the "proper" name for the entire plant.

lo krwaezne. Malus sylvestris L. Mill. Crab apple

The crab apple is a fairly common component of the deciduous coppice in the lower commune. Small, wild trees (lu bɔtse/"billy goats") were transplanted into the hayfield-orchard where they would serve as grafting stock for the ameliorated varieties (see Section 6.a.). Since crab apple juice served as a basic ingredient in Alluetain cider (adding the acidity necessary for balanced taste and long conservation), ungrafted trees were also transplanted close in to the hamlets. Boiling juice was used to clean and disinfect wine barrels. The crab apple was a winter food in some houses. The wild

fruit would be gathered in late fall, stored, and when desired, would be left outside to freeze. This was said to improve the sour taste of the fruit.

le krwaezole, lo pɛtarɛ̃, lo tɛmarɛ̃, lo tramarɛ̃. Ribes uva-crispa L. and Ribes ssp. Gooseberry and Currants

The use of these terms was personalized in Les Allues and few clear regularities emerged, except that they were applied only to Ribes species. The term le krwaezole (fm. pl.) was, however, more commonly applied to the wild gooseberry (R. uva-crispa L.), fairly common in the deciduous coppice, than it was to the wild or domesticated red currants (R. alpinum L., R. petraeum Wulf., R. rubrum L, see also Constantin & Gave 1908:49-50). While these latter species were sometimes called le krwaezole rɔdze, they were more often named lo pɛtarɛ̃, lo tɛmarɛ̃, or lo tramarɛ̃. The black currant (R. nigrum L.), of recent introduction in the mountains, was also usually called by one of these terms or by the French term lo kaesis (see Section 5.a.). The wild gooseberries and currants, like their domesticated counterparts, were eaten fresh or in fruit "salads" with milk or cream. Wild red currants were sometimes transplanted into gardens.

lo ljɛr. Hedera helix L. Ivy

Ivy was especially noted where it grew around both deciduous and coniferous trees in the lower commune mixed wood. Though viewed neutrally by Alluetains on most occasions, when someone tried to fall a tree covered with mature ivy vines, it was then not much appreciated.

lo mjãfjã. Amelanchier ovalis Med. Amelanchier

While only one elderly Alluetain man made a positive naming response to amelanchier using this term, it was accepted as a legitimate name after apparent cognate terms were found to have been similarly applied in the commune of Aime in the Middle Tarentaise (mianson...Constantin & Gave 1908:6) and in the valley of Beaufort to the north (musson, mieusson...Chabert 1897:570). Amelanchier is localized here and there is Les Allues in open deciduous coppice, in

brushland, near rock outcroppings in commonland, etc. While hunting in fall, Alluetain men sometimes gathered and ate the fruit.

lo mlɛz. Larix decidua Mill. European larch

Only a few larch trees can be found in Les Allues, mostly at the edge of the coniferous forest above the hamlet of Creut. Trees were occasionally sawn for balcony wood and/or flooring. Larch was said to be weather resistant. This species was less well known than the other coniferous trees and usually only men with extensive forest experience were consistently able to identify it.

la mɔsa. Moss in general, and the more visible Lichens

Moss is a common feature of the deeper coniferous forests while lichens are widely found in rock piles (lu murdʒe), on larger free-standing stones (le rɔtse), and in rock and gravel slides (lu glapje). The low-growing mosses especially, and to a lesser extent the more visible lichens, were known simply as la mɔsa. Constantin and Gave (1908:73) state that moss was used in Savoie to pad children's beds, as animal bedding and to plug holes in thatched roofs, etc. It is possible that moss was at one time thus used in Les Allues, but by early this century all such applications were unknown.

lo pɑ̃ di kuku. Oxalis acetosella L. Wood sorrel

Wood sorrel is a common, herbaceous species found at and around the bases of spruce trees in the coniferous forest. The pleasant acid taste of its leaves was enjoyed both by children as well as by adults seeking temporary refreshment.

lo pɛ̃. Pinus sylvestris L. Scots pine

Scots pine is a common tree in the upper foothill and lower montane zones of the lower commune, sometimes growing in nearly pure stands (= la fore də pɛ̃). It was used by some families for firewood, and an occasional plant might be sawn to make floorboards, etc. However, the steepness of the terrain where most trees were found made the exploitation and extraction of this species much more difficult that other conifers, such as spruce, which grew mostly in the upper montane and lower to mid-subalpine zones. Scots pine and Siberian stone pine clearly formed a covert superordinate category for most Alluetains, and if pressed, the term lo pɛ̃ would be applied polysemously to label this taxon. However, if they could, people always preferred to use the "proper" names for each species.

lo pɛrʃe. Pyrus communis L. Wild pear

Wild pear trees were only rarely encountered in the Alluetain mixed wood and deciduous coppice. The grafted varieties, while usually called by their "proper" names (see Section 6.a.), were sometimes referred to generally as de pɛrʃe, using the indefinite plural article de. Few, if any, elderly Alluetain men had grafted ameliorated varieties of pears (trees can live to several hundred years), but most believed their ancestors had used the wild pear as grafting stock on the trees still remaining in the commune.

la pɛtɛrla. Rhododendron ferrugineum L. Alpine rose

Alpine rose is a common bush of the higher natural clearings and upper margins of the spruce and Siberian stone pine forests. Like juniper and the three Vacciniums, it also regularly invaded the higher commonlands (lu kmɜ̃) and was often associated with the "rougher" areas of this zone as well (see Chpt. 10). When such woody vegetation became too dense in common pastureland it would be burned, and on occasion, corvées were formed to uproot these woody species, transforming brushland (la brusaje) back into pastureland (lo paturadzo). Like Siberian stone pine, green alder and juniper, it might be used as fuel for summer cheese-making. Infusions were prepared with alpine rose flowers and administered against colds and flu.

lo plano. Acer pseudoplatanus L. Sycamore

One of the major components of the deciduous coppice, sycamore was extensively and variously employed in Les Allues. Its easily worked but resistant wood was traditionally transformed into soles for shoes, into kitchen plates, bowls and utensils and into a number of children's toys (e.g., whistles--le sible; blowguns--le bory; etc.). The candycane-shaped runners of many sleds were made of sycamore wood. Medium sized trees that had been arced by the weight of snow when young--and which were usually found on fairly steep hillsides--were preferred. "Grafting" a curved piece onto the anterior end of a non-curved runner (which otherwise would catch on passing vegetation) was thus avoided. Sometimes sections of the larger roots were used for this same purpose. The "clod-crusher" (lo rulo), a fairly recent introduction to Alluetain agricultural equipment (Sigaut 1977:385), was usually made from a cross section of a larger tree trunk. Sycamore was considered to be an excellent firewood. The foliage-covered branches, like those of ash, were removed in late summer, attached with goat willow fasteners (see la gɔra, supra), dried, then brought into the barns. The leaves were fed as winter fodder to sheep and goats; the dried branches were used to start fires, etc.

lo plɔmatso. Epilobium angustifolium L. Rosebay willowherb

Rosebay willowherb, wild raspberry (lez ãpwe, see supra), and red-berried elder (lo savy rɔdzo) are dominant species of forest clearcuts. For Alluetains, they are the focal taxa of this coniferous forest "sub-biotope" (lez ʨklʨrsi). The willowherb is also common on small talus slopes opened during path and road work, etc. The plant was viewed neutrally by elderly Alluetains; neither was it a weed (la krwe ʨrba) nor a useful plant early this century. It is possible that at one time in Savoie the silky-plumed seed hairs were woven into fiber to make clothing (I. Cadenne, pers. comm.), but no knowledge of this was expressed by any of the elderly informants.

lo poblo. Populus nigra L. CV. Italica. Italian poplar

(See Section 7.b.)

la pɔma d ɔr. Lilium martagon L. Martagon lily

This common lily of mixed wood and forest margins, locally admired for its beauty, was occasionally transplanted for decoration into garden edges during this century. According to Chabert (1897: 26), its bulb was eaten in Savoie in the past during famine periods. This leads to speculation as to what the term la pɔma d ɔr ("the golden apple") might have originally referred: the yellowish, fleshy-scaled bulbs?

lo pri də sɛ̃ martɛ̃. Crataegus monogyna Jacq. Hawthorn

Hawthorn is a common bush or small tree of deciduous coppice and brushland. Its berries were eaten by some people in fall. Armed hawthorn branches were sometimes sought to make enclosures to keep animals in, or barriers to keep them out.

lo ptse, lo ptʃe. Prunus padus L. Bird cherry

Periodically encountered in or at the edges of deciduous coppice, bird cherry was of little economic importance. It might be burned like many other of the smaller, wood-producing species. The tiny bitter fruit, lu pte, were sometimes eaten by children.

le rɔ'dzɛte. Vaccinium vitis-ideae L. Cowberry

(See Section 10.a.)

la sabin. Juniperus sabina L. Savine (localized)

According to elderly Alluetains, several trees of savine were located at the edge of the deciduous coppice surrounding the "Chaudanne" marsh early this century. Believed now to be destroyed, this was the only site thought to have existed in the commune.

Several people claimed savine was used to abort pregnant women, but none believed that such was ever attempted in Les Allues.

lo saepẽ. Picea abies (L.) Karst. Norway spruce

The dominant essence of the coniferous forest, Norway spruce, was one of the most important and appreciated of all plant species in Les Allues. All parts of the tree--from the roots to the crown--and all growth forms--from the young tree to the old, rotting and even dead tree--made significant contributions to the traditional Alluetain high mountain way of life. Spruce provided not only the structural beams, other carpentry wood and the roofing and flooring material for most buildings, it also represented a significant traditional source of monetary revenues for both the commune and for individuals with forest holdings.

While few historical citations were found that referred to commercial transactions in spruce, timber and lumber sales clearly predated the 19th century when market interest in forest products was said to have dramatically increased in the northern Alps (see e.g. Mougin 1919:188; Niederer 1980:45). In 1956, for example, the commune of Landry in the Middle Tarentaise sold "bois en planche" ("wooden planking"...ADS, C1426) and it is probable that forested communes elsewhere in the Tarentaise like Les Allues did the same. In 1853, "the sale of firewood and carpentry wood"...was..."one of the principal resources"...of the Tarentaise (ADS, 1FS310). It is probable that spruce contributed the major part of such sales. Nevertheless, such commercial transactions--mostly of individual trees and small amounts of sawn wood--were only punctually important at the family level, providing ready cash to help the individual peasant surmount difficult but temporary problems. For large sales, large tracts of land were needed, and this was not the case at the family level in Les Allues. Individual peasant forest parcels averaged only 700m^2 in 1732 (see Table 9a). However, the extent of communal, peasant and non-peasant sales during these periods is poorly known.

An appreciation of the importance of Norway spruce in Les Allues must not be subsumed to considerations of its commercial value. This is especially true during these historic periods, though even into the early 20th century, the majority of spruce consumption appeared to be intracommunal. Traditionally, all structural beams for major buildings, most flooring and much roofing material were of spruce. Beams were squared by using axes and other hand tools; secondary structures (barns, stables, etc.) were often covered with the longer wood chips (lez e'klaepe) which flew off during this trimming process (see also ADS, C870 p. 44: barns in the communes of Aime, St. Bon

and St. Laurent de la Cote, etc., were covered in 1774 with "coupeaux" or "ecoupeaux," most likely spruce chips). Primary buildings such as houses were more commonly covered with spruce shingles (lu tavajɔ̃), hand split from 30 to 40 cm sections of adult tree trunks. For this last purpose, the trees were cut in fall when there was less sap in them. The shingles would then be split right away before the remaining sap was lost to drying. Hand split wooden boards were also used to make the traditional upright, oblong bee-hives (see ADS, L559). Early this century, larger trees were sawn into planking at the several water-powered sawmills flanking the Doron. Spruce planking was used for flooring, roofing on the high mountain chalets (luz arbe),(5) for siding on many secondary buildings, to make buckets, etc.

Many other highly useful products were made from spruce. The primary source of vine props (lu paiʒo), fence posts and pickets was spruce wood. When any of the wooden conduits (la tsna) bringing water to mills, reservoirs or basins was in need of replacement, spruce trees with rotten centers were sought in the forest. Such plants were much more quickly hollowed out than healthier ones. Most of the cheese-making implements were confectioned from easily worked spruce branches, as were several of the common, smaller pieces of furniture. Even the roots of spruce (le rɔ̃'pɔ̃ne) were used; they furnished one of the preferred basket-making materials. Soaked in water for perhaps a week after being pulled from the ground, the larger roots would be split, and with the smaller ones, woven into sturdy baskets. Roots were also used to bind boards together on buckets. Bark (l ɛkɔrsa) was traditionally sold by some people to the Moutiers tannery (see also ADS, C870 p. 76: Tarentaise, 1776). Spruce pitch was gathered for several uses: when heated, it would be smothered over cloth wrapped around a broken arm or leg. Once dry, such a cast would remain rigid and in place for several weeks. The fine sawdust found in rotting trees, said to be caused by burrowing worms (lu vɛrʃo), was gathered and used on babies much as would talcum powder today. The lower spruce branches (le de) and their needles (lu pkɛ̃) also served several important functions. In normal years, the smaller, needled branches might be removed and used as animal bedding. Those needles having fallen to the ground, but not yet completely decomposed, were sometimes packed into burlap sacks, transforming them into heat pads, much as was done with grey alder (la vɛrna...see infra) leaves. In drought years, when hay production was down, branch tips and their annual needle growth might be used as animal fodder. Spring buds were sought to make a tisane; they were sometimes also added to a hot bath to reduce stiffness.

Wood from dead, poorly shaped, downed or small, culled trees was usually burned (though a nice downed tree might be sawn or sold). The need for fuel in the Alluetain mountain economy was continuous and all evidence indicates that spruce provided the major part. Wood was needed in winter to heat houses, in spring, summer and fall to make cheese and to cook limestone into mortar, in fall to distill and

all year round to cook meals and to make bread in the communal ovens. Spruce firewood was obtained not only from private land, but also from the communal forest through several institutionalized arrangements (see supra).

From the first few days of his life when placed in a wooden crib confectioned from spruce, to his death and final resting place in a spruce coffin, the Alluetain was rarely beyond the touch of this omnipresent and multi-purpose conifer.

lo savy blã̃. Sambucus nigra L. Elder

Elder is a common bush or small tree in open areas of the deciduous coppice, on its edges, in and around abandoned and collapsed buildings (le ma'zyre), in rockpiles, etc., at lower elevations. To combat colds and flu, flowers were either infused in water, then poulticed on the chest, or prepared as a tisane which was drunk. They were also infused in milk and placed on abrasions, skin sores and especially on felon, a common problem among Alluetains who spent a great deal of time working outside in cold weather. Elder flowers were also mixed with polenta, potatoes, ashes and vinegar (in various combinations) and the resulting concoction was placed on toothaches. The mature black seeds were macerated in "l'eau-de-vie" which was then taken internally to combat a variety of disorders.

lo savy rɔdzo. Sambucus racemosa L. Red-berried elder

Generally found at higher elevations than elder (see supra), but similarly at forest edges and clearings, in and near masonry walls in abandoned buildings, etc., red-berried elder was useful to Alluetains only to the extent its easily hollowed-out branches were employed as children's toys (dart guns, squirters, piston guns, etc.). Its red berries were thought to be poisonous.

la tatola. Viburnum lantana L. Wayfaring tree

The wayfaring tree is a fairly common bush of coppice, along paths and around abandoned buildings, especially in or on broken masonry walls. Its flexible branches, if handy, might be cut and used as bundle fasteners. Some children ate the ripe, black berries; others were told they were poisonous.

lo tijal. Tilia cordata Mill. and T. platyphyllos Scop. Small-leaved lime and Large-leaved lime (localized)

Most likely planted, a few specimens of both species of lime can be found in the deciduous coppice which flanks the main road several hundred meters below the Chef-lieu. Though the difference in leaf size between the two limes was noted, they were formed into a single folk taxon by elderly Alluetains. The long-bracted influorescences were gathered in late August or early September while still mostly green. After drying, these were infused as needed to make a calming tisane for children and as a sleep aid. Some people administered this tisane to domesticated animals to stimulate appetite and to fight colic.

lo tme, lo tsme, lo frɛ̨no sar'vadzo. Sorbus aucuparia L. Rowan

Common in several folk biotopes, rowan is associated especially with deciduous coppice and forest edges (le bɔrdɔre) and clearings (lez ɛklɛrsi). Like whitebeam, the bright orange-red berries were occasionally distilled into alcohol, and branches might be used on occasion as fasteners (de jɔre). Concentrations of rowan were also favorite winter spots for trapping the two elusive marten species. For several people rowan and whitebeam formed a superordinate taxon, lo frɛ̨no sar'vadzo("wild ash," see supra), though this term was also sometimes used polysemously to label the rowan alone.

lo trɛ̃blo. Populus tremula L. Aspen

Aspen grows widely in the deciduous coppice. On the right bank of the Doron between Le Villaret and La Gittaz there is a fairly

extensive nearly pure stand, sometimes called lo bwe də trɛ̂blo ("the aspen wood"). Aspen was not a good firewood; it would burn only when completely dry and even then it was not much appreciated. However, aspen was sought when a strong, light wood was needed: to make a long scythe handle, to make cases for transporting grapes and/or storing vegetables, to make carpentry pegs to hold beams in place, etc.

le θrize, le xrize. Prunus avium L., and by extension Prunus ssp. Wild cherry and by extension, cherries in general

The two color forms of the wild cherry--black and red--were common components of the open deciduous coppice in the lower parts of the commune. They were also found growing on and around cultivated field rock piles and abandoned buildings. Alluetains sometimes distinguished le θrize nɛ̀re ("black cherries") from le θrize rədze ("red cherries"), though they grew together and were usually considered to be different only by their color (some people did claim that black cherries were sweeter). Wild cherries were eaten fresh or macerated in "l'eau-de-vie" and served as a treat on social occasions. The cherry stems (le kwe de θrize/"the cherry tails") were saved, boiled in water and the resulting decoction drunk as a diuretic. Wild cherry wood was preferred for the ploughshare of the traditional plow. Pipe bowls were made from branches of this species. The entire family could sometimes be seen together gathering wild cherries in the deciduous coppice.

The cultivated cherries found in the market in Moutiers early this century might also be called le θrize (used as a somewhat forced polysemous superordinate taxon), but more commonly they were referred to as lu gaifjɔ̃ ("the grafteds"). The domesticated varieties were further subdivided into le grɛ'jote (smaller, light red and white cherries) and lu bigaro (large, black cherries). If pressed to respond, Alluetains recognized lo ptse as being a member of the superordinate taxon of "all cherries" (see lo ptse, supra), but this polysemous usage was rarely if ever applied spontaneously.

lo tsɛ̃dɑ̃, lo ʃjɛ̃dɑ̃. Achnatherum calamagrostis (L.) Beauv. Calamagrostid feather-grass (localized)

In the dry Scots pine forest north of the hamlet of Villard, localized on a steep hillside above the commune of Villarlurin, this unobtrusive grass species was sought for its stiff roots which were

made into brushes of all sorts. An elderly inhabitant of Villard claimed that this knowledge was not old, but was taught to him by a visiting forest service agent in the 1920s or 30s. This person further claimed that the utility of the grass was unknown before that moment, and that only since he had transmitted this information to his relatives and neighbors had the grass been named and sought to make brushes. This information could not be substantiated by any other community members.

There was disagreement in the use of the term lo tsɛ̃dɑ̃ among elderly Alluetains that appears unrelated to this story. The common, weedy couch-grass of gardens and cultivated fields (see lo grɛmɔ̃, Section 4.a.) was sometimes labeled by its widespread French name, "le chiendent." Several people employing the term in this manner did not know of the brush-making plant. When the dialect term lo grɛmɔ̃ was suggested as a possible name for couch-grass, invariably the French term was described as newer and in the process of replacing the older, "correct" term.

lo tsɛno. Quercus petraea (Matt.) Liebl. Sessile oak

Sessile oak was a significant component of the lower commune deciduous coppice where, like beech, it intergraded extensively into the Scots pine forest (la fore də pɛ̃). Oak was recognized as one of the hardest of local woods and was felt to be the best of firewoods. However, the steepness of the terrain where it was commonly encountered, and the distance from most hamlets, made it much less exploited than more easily extracted firewoods like Norway spruce, closer to the habitation zone. The reddish heartwood was also used to make vine props, garden pickets and infrequently as a finish wood inside houses. An occasional large, straight tree (most were stunted and twisted) might be sold or sawn for sale.

la tʃɛvrafwir, la tʃɛvrafoj. Lonicera xylosteum L. Fly honeysuckle

A common bushy species in deciduous coppice, brushland and clearings in the coniferous forest, fly honeysuckle was sought to make pipe stems by adults, and peashooters, blowpipes and water squirters, etc., by children.

lo varno. Abies alba Mill. Silver fir

Silver fir is uncommon in Les Allues and mostly restricted to a small section of forest near the boundary with the commune of La Perrière, between approximately 1300 and 1500 meters. Silver fir was mostly appreciated as a medicinal plant. Infusions of bark were prepared and given to sick or weakened animals to invigorate them; it was administered, for example, to cows after calving. Silver fir wood was much less appreciated than spruce for framing and carpentry needs.

la vɛrna. Alnus incana (L.) Moench. Grey alder

A common tree in deciduous coppice adjacent to the Doron (lo lɜ̃ də la rvir/"along the river"), grey alder was felt to be an excellent firewood--third in value after sessile oak and beech. It was usually burned a bit wet to ensure that it was not consumed too fast. Branches were sometimes sought to make baskets (lu kavɛ̃). The completely decomposed leaves, still somewhat humid, were gathered on hot summer days and compressed into burlap or hemp sacks, which were then said to heat up. These would then be used as heat pads on sore, sick or rheumatic parts of the body. Grey alder was often described as being related to green alder (lez ar'kɔse, see supra), its "cousin germain" ("first cousin"), but the relationship was not more specifically described. I do not believe the two species unambiguously constituted a covert superordinate category.

la vjabla, la jabja. Clematis vitalba L. Traveller's joy

Common in deciduous coppice and brushland in the extreme lower reaches of the commune (to approximately 800 m), this woody vine was occasionally used to make baskets. Children would try (or pretend) to smoke the dried, somewhat porous stalks.

NOTES: CHAPTER 9

1. I drew this conclusion 1) because I supposed that the entity that regulated property and openly published its regulatory ordinances probably owned this property and 2) by noting the importance of communal ownership in 1732 (see Table 9a). However, it is a possibility that in the 14th century "legal ownership" of all forest resided in the hands of the Archbishop, who conferred certain--perhaps long term--rights of use to the Alluetain collectivity. On several occasions during this period, the Alluetain collectivity declared its allegiance to the Archbishop (Academie de la Val d'Isère 1866:64), though not as serfs (Academie de la Val d'Isère 1882:56), recognizing that the entire valley of Los Allues was under the jurisdiction of the Archbishop, Count of Tarentaise. By including in the 1390 ordinance (see Appendix 1) threats to involve the "officers of the Lord Archbishop of Tarentaise," presumably to help ensure compliance with its regulations, the Alluetain collectivity was clearly demonstrating it was not the sole entity interested in the management and protection of property within the valley.

2. This conclusion is supported by similar findings in the Haute Maurienne commune of Termignon (Meilleur 1985:59)

3. The term "teppe" is ambiguous. I have translated it here and elsewhere (Meilleur 1980:179) as "once cultivated field". Nicolas (1978:698) uses a similar gloss ("champs improductifs"). I am now inclined to define it as "once productive but now non-productive parcel." Clearly "teppe" (in Les Allues today only a place name, le tɛpe) is cognate with in zëp, found in Termignon to refer to any category of land once productive but now degraded or non-productive (Meilleur 1985:32).

4. Bread was baked in wood-fired ovens once every two weeks in summer and once a month in winter in each hamlet. Each family supplied its own firewood. Since it took much more wood to get the oven to bread-making temperature than to keep it there, the family baking first had to supply much more wood than those families baking later. Baking position therefore rotated systematically among the hamlet families to ensure that each bore this charge equally.

5. To help prevent damage to these high elevation buildings from the weight of snow or from avalanches in winter, the roof planking was movable. Upon arrival in summer at a high mountain chalet, the planks--stored in winter inside the rock and mortar foundation--were put onto the structure to protect the "alpage" team members (see Chpt. 10) from wind and rain. Upon leaving this

same structure for the season, the planking would be replaced inside. This way the building filled with snow in winter and was much less easily damaged.

CHAPTER 10

The Alluetain Pastoral Sector

Les Allues, like most other high mountain communes in the Tarentaise region and in the French intra-alpine zone, can be characterized as having a well defined and productive pastoral sector. In the early decades of this century, besides engaging in the many and diverse economic activities already described, informants estimated that the average Alluetain family also owned and raised small numbers of domesticated animals: 2 or 3 milk cows, 2 or 3 heifers, perhaps an ox, a mule, a few she-goats and ewes (but usually less than a half dozen each) and perhaps a billy-goat and ram. Some chickens, an occasional rabbit or even guinea pig and sometimes a dog and/or a cat could also be found in most households. Early this century, one or two pigs were bought by many families each April at the "Branch Fair" (la fwgra di rãpo) in Moutiers to be fattened during spring, summer and fall for winter butchering. On the hamlet and "quarter" scales, all these animals constituted numbers into the hundreds and on the communal scale, into the thousands (see Table 10a). Most of these domesticated animals were stabled each winter in the hamlets of residence of their owners.

In spring, the bulk of these animals was moved outdoors. Until their return to the hamlets in fall some five months later, the small

Table 10a: 16th and 19th Century Views of the Major Animal Holdings in Les Allues

1561 (1)

Total bovines 1150	Avg. bovine holding/household 3.4
Total sheep 2334	Avg. sheep holding/household 7.0
Total goats 449	Avg. goat holding/household 1.3
Human population 1485	
Households 334	Avg. number inh./household 4.25

(1) From Hudry (1961); adapted from "La Gabelle du Sel," the salt tax census of 1561...ADS, SA2086

1829 (2)

Total bovines 1325	Avg. bovine holding/household,est. 4.4
Total sheep 815	Avg. sheep holding/household,est. 2.7
Total goats 500	Avg. goat holding/household,est. 1.6
Human population,est. 1300	
Households, est. 304	Avg. number inh./household 4.3

(2) The animal holdings alone were provided by the agricultural statistic of 1829...ADS, 5FS324. The human population is estimated (see Table 2a). The household number is calculated from a mean abstracted from the average household sizes in 1561 of 4.25 (ADS, SA2086), in 1773 of 4.2 (Hudry, pers. comm.) and of 4.35 in 1866 (27M1). The average animal holdings per household were then calculated from these estimates.

familial livestock holdings of ungulates were moved, first up-mountain, then down-mountain, through a series of stepped grazing stations within an enormous upland pasturable domain. During this period, milk from cows and she-goats was transformed into cheese, butter and other milk products, some of which were made exclusively for sale while others were consumed locally. Animal husbandry, a less conspicuous correlate of this same activity, was practiced with the aim of regularly replacing the milk producers and female breeders (cows, she-goats), of providing meat (mostly male kids and pigs) for family consumption and of supplying certain types of stock to the market (pregnant heifers, steers, sheep). Even though several major components of pastoral production were organized at collective levels, the individual families nevertheless remained the ultimate beneficiaries. As an important means of generating cash for the families, of providing significant nutritional input to them in the form of milk products and meat and, as we have seen, of supplying traction for plowing and fertilizer for cultivated lands (Chpts. 4, 5 and 7), the Alluetains pastoral sector was indeed complementary to the staple-producing agricultural sector.

An important part of each Alluetain household's consumable and marketable commodities was thus clearly generated from the pastoral sector. Any comprehensive treatment of the traditional Alluetain economy must consider this. But because many good general descriptions already exist with regard to northern alpine pastoralism (see esp. Arbos 1922; Blanchard 1943; Briot 1896; Niederer 1980; Rey 1930),

only a partial examination of the complex Alluetain pastoral sector is provided here. In Les Allues, as in most neighboring communes, success of cheese-making and stock-raising depended 1) upon the amount of hay each family could amass in summer for overwintering its animals (see Chpt. 8), and 2) upon sufficient local availability and effective use of live plant forage during the summer months of outdoor grazing. In this sense, the Alluetain pastoral sector was fundamentally dependent upon a vegetal base. Because this dissertation is focused on vegetal procurement and production, it is the folk ecological knowledge associated with the structure, composition and use of the vegetal base within the Alluetain pasturable domain, for pastoral and other activities, that is stressed in this chapter.

The folk biotopes and cognized flora of the pasturable domain

There is much evidence of forest clearing and removal of upper forest margins in the prehistoric high mountain Savoyard agro-pastoral adaptation (Bartoli 1966:92+; Bocquet 1976a, 1983; Mougin 1931; Onde 1938:5; see also Chpt. 9). Much of this deforestation can be explained by prehistoric and historic peoples' expansion of pasturable surfaces to accommodate greater numbers of domesticated animals than could be pastured in naturally grazable lands alone. It is likely that the earliest permanent inhabitants of Les Allues likewise modified and expanded the alpine zone meadowland--which occurred naturally between 2000 m and 2500 m or so--into a pasturable domain dominated by the pastureland folk biotope, lo paturadzo. In effect, while Les Allues had been naturally provided with an extensive and

high quality pasturable zone, this domain has long since been extended well into the naturally forested areas of the sub-alpine and montane zones. In its pre-World War II form, for example, total pasturable space comprised some 36% of Alluetain territory (approx. 3000 ha. of some 8400 ha., between roughly 1300 m and 2500 m...Messines 1938-39:66).

The pastureland folk biotope--lo paturadzo--which comprised the bulk of the pasturable domain, was mostly constituted by an herbaceous vegetation favored by the regular grazing of large domesticated animals. Below 1800 m - 2000 m, pasturable areas were artificially maintained, mostly by continuous annual grazing, but also probably by occasional burning (see infra). In a 1978 study of thirteen pasture-land sites within the French intra-alpine zone, three plant families, Graminae, Compositae and Leguminosae, were shown to account for over 50% of the 128 herbaceous phanerogams censused (Delpech & Denudt 1978).

However, in most pastoral contexts, Alluetains did not differentiate much among the Linnean species and folk taxa which grew in this folk biotope, even though many individual plant taxa were well known and named in other contexts. Alluetains simply called this vegetation as a whole, lo furadzo, ("forage"), a functional category more or less equivalent in pastureland to d ɛrba ("de l'herbe"/ "herbaceous plants") as this term is used in its most inclusive sense (see Section 7.a.). The functional near equivalency of most pastureland species as forage producers and the infrequency of visits to pastureland are

probably at the base of such perceptual and nomenclatural generality (see a somewhat similar conclusion by Rey 1930:99+). While there was clearly a close correspondence between the plants which grew in lu paturadzo and those which grew in lu pra ("hayfields"...especially in the transition zone between the two folk biotopes: 1300m - 1800m approx., see Chpt. 8), it was not generally in pastureland--usually much further from the hamlets than hayfields--that individual taxa were recognized, named and/or sought if needed for non-forage purposes. Such plants as caraway, arnica, bistort, etc., with medicinal and/or alimentary value as well as forage and hay value, were much more often gathered in hayfields than in pastureland. In most pastoral contexts, Alluetains had little reason to recognize them individually. This was probably so not only because of the proximity of hayfields to the habitations, where such plants were mostly used, but also because the pasturelands nearest the hamlets were almost always immediately grazed as the vegetation developed in spring, while mowing in hayfields did not begin until mid-July. Large grazing animals, excluded from the hayfields until mowing was completed, quickly spoiled the pastureland vegetation for any type of human consumption by trampling and with their wastes. In addition, such hayfield "weeds" as meadow saffron and hogweed, both of which were usually removed from hay, were considerably less offensive to Alluetains in pastureland. Since grazing cows simply ate around them in many cases, they were much less frequently attended to in this folk biotope.

A few folk taxa with high positive or negative perceptual salience and/or significance as forage producers, such as the poisonous false helleborine, the great yellow gentian, of little forage value, or the highly esteemed red clover, were nevertheless commonly recognized nomenclaturally within the pastureland folk biotope. There is also at least one example where a mostly ignored hayfield plant was much more often recognized when found in a pastureland context. Common in both folk biotopes, la purta rɔza (Alchemilla xanthochlora Rothm.) was generally overlooked in hayfields as one of many undifferentiated constituents of "hay" (lo fɛ̃). But when concentrated in pastureland, an effort would usually be made to keep bovines from grazing it, especially in the early hours of the day: the dew which collected on its flat leaves in the morning was thought to provoke digestive problems in the animals. In general, however, despite the number of individual folk taxa present and potentially recognizable in pastureland, little attention was directed toward differentiating the bulk of these discontinuities in most pastoral contexts. An evaluation of the folk phytocoenosis of lo paturadzo presented in Table 10b must be informed by this fact (see the following Dictionary Entries, Section 10.a., for detailed descriptions of the taxa cited in this chapter).

Table 10b: The Folk Phytocoenosis of Lo Paturadzo

l ani/Carum carvi/Caraway
l arnika/Arnica montana L./Arnica (in flower)
la bitʃ'wano/Arnica montana L./Arnica (in leaf)

Table 10b (Continued)

la biz/Briza media L./Quaking grass
lo bove/Colchicum autumnale L./Meadow saffron (spring speed pod form)
la brʂvira/Empetrum nigrum L./Crowberry
la dzɑ̂'xɑ̃na/Gentiana lutea L./Great yellow gentian
lo dzɪnʂvro/Juniperus communis L./Juniper
d ʂrba/Herbaceous plants
l ʂrba epja/Graminae spp./The larger Grasses
l ʂrba rɔdz/Onobrychis viciifolia Scop./Saintfoin
le juθre/Vaccinium myrtillus L./Bilberry
la kɑ̃'pɑ̃na/Campanula ssp./(the larger) Bellflowers
la kɑ̃pa'nɪta/Campanula ssp./(the smaller) Bellflowers
la karʂla/Festuca paniculata (L.) Sch. & Th./Golden fescue
lo kɔ̃flabo/Gentiana acaulis L./Koch's gentian
la kokwara/Heracleum sphondylium L./Hogweed
la lʊ̂gabwe/Polygonum bistorta L./Bistort
la margɔ'rita/Leucanthemum vulgare Lam./Ox-eye daisy
lo milpʂrtɬi/Hypericum ssp./St. John's Worts
lez otɔ'nɪse/Colchicum autumnale L./Meadow saffron (fall flower form)
la purta rɔza/Alchemilla xanthochlora Rothm./Lady's mantle
le rɔ'dzʂte/Vaccinium vitis-ideae L./Cowberry
lo te (sar'vadzo)/Alchemilla alpina L./Alpine lady's mantle
lo trijole (sar'vadzo)/Trifolium ssp./Red clover
le tsa'pʂle/Pulsatilla alpina (L.) Del. subsp. sulphurea (DC.) A.&G./Yellow alpine pasque flower
lo tsardʊ̂/Carduus ssp., Centaurea ssp., Cirsium ssp./Thistles, Star-thistles and Knapweeds
la tsardɔsa/Carlina acaulis L./Stemless carline thistle
la tsʂv'rʂla/Laserpitium latifolium L./Sermontain
la vjɔ'lʂtr/Viola calcarata L./Alpine pansy
lo vraro/Veratrum album L./False helleborine

Though pastureland (lo paturadzo) dominated, several secondary folk biotopes were also common features of the pasturable zone: la brusaje (brushland), la mojasir (moderate wetland), lo rɔtire (marsh), lo sʂtʃy (desert), la mɔrʂna (moraine) and lo tɔr dɔ la mʊ̂da + lo tɔr dɔ l arbe ("around the montagnette" + "around the mountain chalet"). In pastoral contexts there were few specific management strategies associated with these folk biotopes which set them apart from

pastureland. They were generally grazed to a greater or lesser degree by domesticated animals depending on the availability of preferred forage. However, in the lower, artificially maintained half of the pasturable domain, insufficiently grazed pastureland was sometimes burned earlier in this century. Little is known about the antiquity of setting controlled fires in the northern Alps. As the agro-pastoral economy began its decline in the last century, it is possible that burning was adopted expeditiously to reduce the encroachment of woody vegetation on increasingly underused pastureland. However, as we will see, some pasturable land containing bilberry (le juθre/ Vaccinium myrtillus L.) was periodically burned early in this century and the result was favorably viewed as increasing berry production. It was thus possible that controlled burning in pasturable land may actually have been a traditional practice which not only maintained pastureland over periods of reduced demand for grazable land, but also augmented gatherable berry production as well.[1]

As in the hayfields, poorly drained areas at higher elevations tended to form wetlands, and both la mojasir and lo rɔtire were scattered here and there within the pasturable domain. Many of the same taxa found in lower elevation examples of these folk biotopes were also found in their higher elevation variants (see Tables 8b and 8c). However, those wetlands about 1800 m were mostly dominated by la jets/Carex ssp. + Juncus ssp., and by la mɑ̃ di bɔdʒ/la mɑ̃ di dʒablo/ Orchidaceae ssp. Lo sɛtʃy, a "desert" or "dry land" folk biotope found on windswept knolls or elsewhere where topsoil was very shallow,

was similar in its floristic configuration to those examples found within the hayfield zone (see Chpt. 8).

Two relatively minor folk biotopes were restricted in Les Allues to the pasturable domain: lo tər də la mɔ̃da + lo tər də l arbe ("around the montagnette" + "around the alpage chalet") and la mərɛna ("the moraine"). Both possessed specific floristic and functional components which permit their qualification as distinct folk biotopes.

Labeled by complex lexemes--though these appear to be descriptive phrases rather than valid names--the spaces immediately surrounding the two pasturable zone building types (lo tər də la mɔ̃da and lo tər də l arbe) were regularly frequented during certain times of the year for a variety of economic purposes. These spaces were recognized to possess a similar floristic content and are considered here as variants of a single folk biotope. Elsewhere in the intra-alpine zone, at Termignon in the Haute Maurienne for example, these two spaces were monolexemically labeled and constituted a well defined folk biotope, lez ɛsɛvo (see Meilleur 1985:44). It is possible that further research in Les Allues will reveal monolexemic naming for such space as well.[2] Heavily fertilized because of the continuous movement of domesticated animals in and out of the area, and often supplied with running water, this folk biotope produced a spontaneous nitrophilous flora well known to the Alluetain peasants (see Table 10c).

Table 10c: The Folk Phytocoenosis of Lo Tər də la Mɔ̃da/də l Arbe

lo laepe/Rumex alpinus L./Monk's rhubarb
lo mjozoti/Myosotis arvensis (L.) Hill. + Myosotis alpestris group/Forget-me-not
l ɔrt͡ʃe/Urtica dioica L./Nettle
la salada/Taraxacum officinale Web./Dandelion
la vɛrkwɛ̃na/Chenopodium bonus-henricus L./Good king henry

Well above this and all other folk biotopes, two glaciers of the Peclet-Polset glacial system extend into the upper pasturable zone of Les Allues at the southern extremity of the commune (see Fig. 2d, Chpt. 2). Immediately below and surrounding the bases of these glaciers, la mɔrɛ̃na ("the moraine") was recognized by Alluetains as a folk biotope characterized by exceedingly sparse, low-growing vegetation (see Table 10d). The use of this denomination was generally extended several hundred meters down valley from the ice (2600 m - 2300 m approx.). However, this vegetation eventually became indistinguishable from the stunted but denser flora of the highest pastureland (lo paturadzo) and the denomination would change accordingly.

Table 10d: The Folk Phytocoenosis of La Mɔrɛ̃na

lo dzɛ̃nepi/Artemisia genipi Web. + A. umbelliformis Lam./Genepy and Loose-headed wormwood
lez ɛ̃ɛ̃le di glae͡ʃe/Leontopodium alpinum Cass./Edelweiss

The organization and use of pasturable space

Through rigorous organization and management of these several folk biotopes--but especially lo paturadzo--the Alluetain pasturable domain supported large numbers of domesticated animals during perhaps five to six months of open-air grazing each year (May to October approx.). Toward the goal of milk and livestock production, this space was variously partitioned over the years into up to twelve high elevation (1700 m - 2500 m) pastures or "alpages" (le mɔ̃tɑ̃ne), some of which were private properties while others were publicly owned, and into an unspecified number of mid-elevation (1300 m - 1800 m) communally owned grazing areas (lu kmɔ̃/"the commons" or "commonlands") which were bounded on their downslope sides by many small, privately owned "montagnettes" (le mɔ̃de). Though animals were grazed and milk products made in both zones, there were sharp contrasts between high altitude alpages and mid-elevation montagnettes in many aspects of the organization and orientation of production.

Once winter snows receded in spring, all families moved their livestock from the hamlets to the montagnettes for at least two or three weeks. Here each family grazed its own small number of animals on the adjacent commons and made its own milk products for internal family consumption. With warmer weather and a rapidly maturing vegetation, the individually owned animals were formed into herds, each of which was moved into an alpage. Here, specialists moved the herds through series of stepped grazing stations during the three summer months (11 June - 14 September) making butter and cheeses

mostly for market sale. In fall, the alpage herds were dissolved and the individual livestock holdings were returned to their respective montagnettes. Here they would remain for a few weeks, each family again making its own milk products. As the season advanced, the domesticated animals were increasingly grazed in vacated hay and cultivated fields around the hamlets, before being sequestered anew during the six or seven month winter (November - May approx.).

This predictable up-mountain/down-mountain movement of domesticated animals through two distinct spaces and productive forms in a single season was characteristic of the pastoral sectors of many northern alpine communes. However, while the exploitation of domesticated milk-producing animals toward pastoral ends was clearly the primary focus of both the high and mid-elevation pasturable domains in Les Allues, several other activities--notably gathering and hunting--were also regularly practied there. The pastoral and non-pastoral organization and use of the montagnette/commons zone is discussed first.

"Montagnettes" (le mɔ̃de) and the adjacent commonlands (lu kmɔ̃)

Though the date varied somewhat each year, once the spring snow melt was well underway and the earth around the hamlets mostly dried, the cows, goats and sheep were brought out--usually sometime in May--and the new year's pastoral season would begin. For awhile after the end of their winter confinement, bovines especially were often shaky-legged and skittish. To ensure the close surveillance of these most precious of family commodities, during the first few days of their

liberty they were usually pastured in proximity to the hamlets. In the early decades of this century, this usually occurred on otherwise unused or little used privately owned agricultural land (e.g. lu tsã ʒ ɛrmo/"abandoned cultivated fields"), in communally owned brushland (la brusaje) or, more rarely, on private properties reserved for this purpose (lu paturadzo).

By the second or third week of May, each Alluetain family had moved its animals to its montagnette (la mɔ̃da): a small, usually single room building with adjoining stable, roughly constructed of local materials. As far as could be determined without having done a comprehensive census, most Alluetain families owned a montagnette (or could gain access to one through family ties) on the lower margin of the communally owned grazing land closest to their hamlet of residence.[3] There were several such grazing areas still being used early this century on both the east and west facing valley walls several hundred meters above the habitation zone (between approx. 1300 m and 1800 m). Each appeared to be linked to a set of hamlets known as a "quarter" (ʒ kartʃe...see Chpt. 2). The residents of the hamlets in a given quarter generally owned the montagnettes on the lower margin of the closest commons, and it was here they pastured their animals in spring and fall. While technically these commonlands were owned by the entire community, each was pastured only by the animals belonging to the owners of the adjacent montagnettes, residents of the hamlets in the nearest quarter. On the whole, even though forest (la fore) and coppice (lo rɛbje) penetrated the commonlands in many spots, the

montagnettes as a group generally marked the transition between the mowed hayfields and the grazed commonlands. While dominated by pastureland (lo paturadzo or lo p. dɔ la komna/"pastureland of the commune"), one or several of the secondary folk biotopes described earlier might also be found within any given commons (see supra, except the moraine, much higher). Those "rougher" areas dominated by woody vegetation (la brusaje) were periodically burned earlier in this century, in part in an attempt to maintain the herbaceous flora of the pastureland folk biotope.

Alluetains preferred to move animals to their montagnettes on a Saturday, usually sometime in mid-May, taking the provisions and cheese-making equipment necessary for a two, three or even four week stay. By moving on Saturday, they could continue to "arrange" the montagnette on Sunday--that is, prepare it for habitation and cheese-making--without losing a day's work. Such light activities were permitted by the church on Sunday, while heavy labor, like plowing, was not. Once the montagnettes were installed, each family usually left one member, often an older girl, to remain and supervise the animals during their two or three week stay. A similar routine was followed each day. Children were instructed to move the animals around the commons, often to named locations ("lieux-dits"/lu ma), and to ensure they stayed away from the privately owned hayfields just downslope. Even though collective herds were sometimes formed during the day in the various commons, reducing redundancy of manpower use,

all animals were returned each evening to their respective montagnette stables.

If the girl was old enough, she might also be responsible for milking her family's cows and goats and making the daily butter (lo bura) and "tomme" cheese (la tɔma). These products were usually reserved for family consumption, but if in surplus, some might be sold in Moutiers. If she needed help, her mother or perhaps an older sister would come up to the montagnette in the evening to help milk. This person would stay the night, help milk again in the morning and immediately make the butter and/or cheese--using morning milk and evening milk kept overnight in lo garde (see Table 3e)--before descending to the hamlet to help with other activities. The whole milk (lo laθe) was used to make "tomme" cheese and butter, while the second milk or first whey (lo lɛta) was used to make a second "hard butter" (lo bura dar), or a light cream cheese (lo trãtsɔ̃) which was eaten fresh. The person remaining at the montagnette was also responsible for feeding the young pig(s), bought in April and kept now in an exterior enclosure. It was usually fed monk's rhubarb and good King Henry boiled in the second whey (la kwɛta). Commonly gathered around the montagnette (lo tɔr dɔ la mɔ̃da), these plants, the nettle and the dandelion were also sometimes prepared in dishes for human consumption. On the 11th of June, this short cheese-making stay came to an end as the animals were moved to the alpages where they would remain for the next three months. Not until the 14th of September would each montagnette again be occupied.

Non-pastoral use of la mɔ̃da and lo kmɔ̃

Non-pastoral use of montagnette and commonland space was restricted mostly to the gathering of wild plants or their products, though earlier in this century a few hunters frequented these areas in late fall. If family supplies ran low, alpine pansies, important medicinal plants, might be gathered in the higher commonlands soon after the domesticated animals were installed at the montagnettes. As we have seen, several plants were also collected around the montagnettes in spring and prepared both for animal and human consumption. However, once the montagnettes were vacated and the animals moved to alpages in June, the entire area was not usually revisited until August, when bilberries, raspberries and other fruit were gathered by women in the "brushier" areas (la brusaje) of the various commons. In late September or early October, Alluetain men sought the root of the great yellow gentian, an important medicinal plant, at the margins between pastureland and communal forest or in rockier areas of the commons.

The Alluetain "alpages" (le mɔ̃tɛ̯ne)

On the 11th of June each year--as custom dictated--the domesticated animals, kept since mid to late May at the scores of montagnettes, were moved upward, en masse, into the Alluetain alpages (le mɔ̃tɛ̯ne/"the mountains") where they would remain under the supervision of cheese-making specialists until mid-September. Together, these alpages formed a high elevation pasturable domain concentrated between 1700 m and 2500 m in the southern half of the

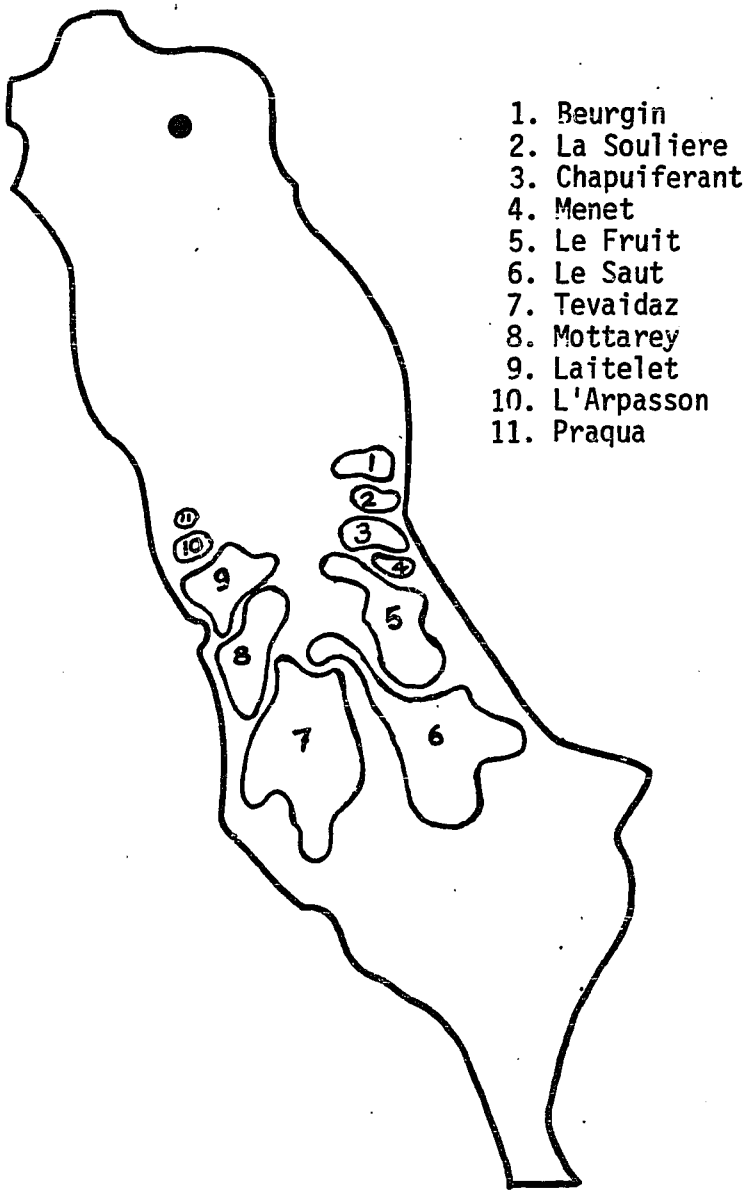
commune. This domain began where the commonlands terminated above the hayfields and the habitation zone. It then extended south and upward into the alpine zone on both the east and west-facing valley walls before ending at the base of the arctic-alpine zone's barren rock, snow and ice. This space was different from the montagnette commonland zone, not only by higher overall elevation, but by its division into fewer independently organized and managed productive units, or alpages. Each alpage (la mõtɛŋa), depending on its surface area and quality, was grazed by the animals of many families grouped into a herd. Between 30 and 120 milk cows, perhaps an equal number of she-goats and smaller numbers of heifers and sheep were found in each herd early this century. Over approximately a 90-day period, such sets of animals were systematically moved through the pasturable space in any given alpage, generally within an up-mountain/down-mountain network of stepped stations. At each station, cows were picketed for several hours each day during milking. Pigs were kept in enclosures, usually at the lowest station in each network. At one time in the early 19th century, twelve alpages were in operation, each on average composed of several hundred hectares of pasturable land (see Table 10e). Since then, the number of alpages in operation at any one time has fluctuated downward as ownership and economic conditions have changed. The pastoral organization of the alpages, in contrast to that practiced at the montagnettes, had the effect of liberating the Alluetain families during the three summer months for other economic activities, most notably, for haying.[4]

Table 10e: The Alluetain "Alpages" in 1822
(from Reffay 1975 and from ADS, 5FS324)
(see Fig. 10.a.)

Name of the "alpage"	Owner	Number of milk cows
Tevaidaz	Commune	100
Le Fruit	Commune	100
Menet	Commune	80
Le Saut	Private	70
Chapuiferant	Private	8 (probably 80)
La Souliere	Commune	30
Beurgin	Private	110
L' Arpasson	Private	60
Praqua	Private	60
La Recoraz	Private	60
Mottarey Laitelet-owned by same person	Private	240
12 "grandes montagnes"	4 owned by the commune, 8 privately owned	990 milk cows*

* In 1829 (ADS, 5FS324), 715 milk cows were censused in Les Allues. Extrapolating from this figure, approximately 275 milk cows were thus brought into the Alluetain "alpages" in summer from outside the commune (or approximately 28%).

Figure 10.a: Approximate Location of the Alluetain "Alpages"



Cheese-making and the work related to pasturing and milking perhaps 100+ animals during three months within each of the alpages was accomplished by well organized teams of men (see Table 10f). The milk from the lactating animals of each herd (cows and goats) was gathered and made daily into several different products depending upon the emphasis of the exploitation. First quality butter, "gruyere" cheese (lo grɛvir)[5] and goat cheese (la tɔma di tʃɛvra) were produced in most alpages for sale. The gruyere cheeses, of greatest market value, usually weighed between 30 and 60 kg each. First whey cow milk cheese, "le serac" (lo sɛre), as well as second quality butter might be made for distribution among the animal owners. Fresh cream cheese was also made daily from the first whey for consumption by the alpage team members. The second whey went to the pigs, prepared with monk's rhubarb and good King Henry, as at the montagnettes. While some of the secondary jobs were performed by local men or older boys, most of the alpage team members, and notably the gruyere making specialist and team supervisor, came from outside the commune. In 1793, for example, these men came from the region of Faucigny to the north, in what is now the department of Haute-Savoie (AC, Series D, No. 6:92).

Table 10f: The Alluetain "Alpage" Team
(and each member's major responsibilities)

1. lo grɛvje: the "guyere" cheese-making specialist, usually in charge of the team.

2. lo sɛraʃe: the "serac" (lo sɛre) cheese-maker, usually second in charge.

3. lo govarny: the person who handles and cures the cheeses once they are made.

4. lo bɛrdʒe: the head shepherd, responsible for scheduling and organizing the rotation of the livestock within the "alpage," usually also the main "healer."

5. lo kɔlɛ: the aide to lo bɛrdʒe, does many of the odd jobs (carrying milk, cleaning up, etc.).

6. lo paʃpe: the person responsible for picketing the cows, spreads out the manure before the cows are moved to their next picket site.

7. lo bokatɛ̃: responsible for pasturing and milking the she-goats and making goat cheese.

8. lo mɔdʒe: responsible for pasturing the heifers.

In September, when the herds were broken up and each animal returned to its owner, the first quality milk products were sold to the highest bidder, generally a wholesaler of cheese and butter. The monetary proceeds were shared among the owner of the alpage (the commune or a private party), the renter or manager of the alpage (which may or may not be the owner and/or the alpage team supervisor) and the owners of the individual animals.[6]

Non-pastoral uses of the alpage zone

As in the montagnette-commonland zone, non-pastoral use of the several alpage zone folk biotopes was dominated by gathering and hunting activities. Small mines had also been opened and exploited at a few sites over the years within this high mountain domain. In summer, the greatest use of non-forage plants was that of woody species for cheese-making fuel. Alpine rose, green alder and juniper were all removed from brushland at the upper forest margins or in rockier, open areas. Trees were also regularly removed from nearby forests at the lower reaches of the alpage zone (see Chpt. 9). La jets (Carex ssp. + Juncus ssp.) was regularly sought by alpage team members in wetlands within the high mountain pasturable domain. While la jets had important pastoral uses, these were not as forage; it was commonly employed as animal and human bedding and, in lieu of socks, was "worn" in shoes. As we saw already, several plants were gathered around the mountain chalets (lu tər də l arbe) throughout the summer and used to nourish pigs.

In summer, the moraines were periodically visited by men from the hamlets. It was not uncommon for someone to free himself on a Sunday and visit the alpage team responsible for his livestock. Before returning to the hamlet, he might ascend to a preferred spot in la morena and collect some genepy or loose-headed wormwood and/or some edelweiss. The first two composites were felt to possess the greatest curative power of all local medicinal plants. The third was sometimes sold in small bundles at Moutiers, or used to decorate the habitations. If alpine pansies, mouse-ear hawkweed, mountain everlasting, alpine rose or wild thyme were noted in descending from the pasturable zone, some of these medicinal plants might also be collected.

After the 15th of October, until the first heavy snowfall--well after the domesticated animals had been returned to lower elevations--the high mountain pasturable zone was frequented by small numbers of marmot-diggers and chamois hunters.[7] These activities were abandoned with heavy snowfall as the Alluetains prepared in earnest for the winter season.

* * * *

This chapter has briefly described the major features of the Alluetain pastoral sector, organized primarily toward the production of cheese and butter as well as the maintenance and growth of several thousand domesticated ungulates during the 6-month outdoor period. The secondary uses of the pasturable zone folk biotopes, most notably gathering and hunting, were also discussed. It has been difficult to

pass the descriptive phase when dealing with the Alluetain pastoral sector because of the lack of quantifiable data. Nevertheless, several conclusions can be made about the way the Alluetain pastoral sector integrated with the other economic sectors and contributed to the well-being of the individual households. Clearly, the up-mountain/down-mountain rhythm of animal deplacements was ecologically justified. The well-organized movement of animals through the pasturable zone vegetation as it progressively matured then declined, from spring through fall, permited a complete use of the resource. As in most other major economic sectors, familial exploitation of privately owned holdings was combined with mutually agreed upon collective arrangements, both in the spring and fall use of common-lands and in the summer use of alpages. Given limited time and labor, by adopting the system of "grande montagne," and freeing themselves in summer from most pastoral responsibilities, the Alluetain households had opted to produce greater quantities of hay (see Chpt. 8), and thus to overwinter a much higher percentage of their animals, than they presumably could have done had they opted to produce their own cheeses in summer under the "petite montagne" regimen. Presumably then, some kind of balance was struck in Les Allues between sufficient pasture-land for spring, summer and fall grazing of animals and sufficient hayfields to produce the hay necessary to overwinter these same animals. While the obvious conclusion can be drawn that such a choice would have generated revenues from the sale of surplus livestock that would have more than compensated for the presumed loss of individual

cheese-making revenues, this ignores other variables, such as topographic and/or edaphic factors, etc., in explaining the adoption of one type of system over another. These are interesting topics for further research.

The combination of individual spring and fall cheese-making at montagnettes with quarter-level collective grazing on commonlands and summer alpage team cheese-making also appears to be ecologically justified and well integrated into the rest of the traditional Alluetain economy. Grazing ungulates at low milk-producing curves in spring and fall on commonlands characterized by second quality forage kept the costs down, while apparently providing largely sufficient quantities of milk products for family consumption throughout the year. Assuming the responsibilities for grazing their animals and making cheese themselves at these periods of lessened labor demand allowed the Alluetain household to limit the costs of engaging specialists to the summer months when milk-producing animals were at peak milk production and better quality pasturelands were available at higher elevations (Rey 1930:18). Alluetains were thus able to produce the hay necessary to overwinter their animal holdings and still gain small monetary revenues from the sale of the highly demanded gruyere cheeses, made in part during the summer months by milk from their livestock.

Dictionary Entries

Section 10.a: Plants of the Alluetain Pasturable Domain

lez ã'bryne. Vaccinium uliginosum L. Northern bilberry

Northern bilberry is a fairly common species of the "rougher" areas of common pastureland at fairly high altitudes (1500 m - 2000 m approx.). While most elderly Alluetains were able to distinguish the northern bilberry fruit from the very similar bilberry by its uncolored juice, the dialect term, lez ã'bryne, was not accepted by everyone. Terms such as le juθre de bɕlɔvlɕz (St. Martin de Belleville bilberries) or lez ɔr'sɕte were also occasionally used to refer to this species. This last term was cited by Constantin & Gave (1908:4) for V. uliginosum at two stations in Haute-Savoie.

While northern bilberry fruit was known to be edible, its generally bland taste resulted in it rarely being gathered and eaten.

l ani. Carum carvi L. Caraway

(See Section 8.a.)

lez ãpwe. Rubus idaeus L. Raspberry

(See Section 9.a.)

lez ar'kɔse. Alnus viridis (Chaix) DC. Green alder

(See Section 9.a.)

l arnika. Arnica montana L. Arnica

Arnica was an important medicinal plant in Les Allues, as it was elsewhere in the northern Alps (see Constantin & Gave 1908:10). Its flowers were gathered in summer mostly in the pasturable zone, macerated in locally distilled alcohol, then poulticed on cuts, bruises and abrasions as the need arose throughout the year. Leaves of arnica were gathered, dried and smoked in lieu of tobacco. In most cases, older Alluetains were not aware that these two uses were satisfied by the same Linnean species, considering the leaf-producing plant a distinct folk botanical taxon, la bitʃ'wano (see Section 8.a.).

la biz. Briza media L. Quaking grass

(See Section 8.a.).

lo bove. Colchicum autumnale L. Meadow saffron

(See Section 8.a.).

la brɛvira. Empetrum nigrum L. Crowberry

Crowberry is a fairly common plant of fresher areas in the upper commonlands, especially on the small western plateau separating Les Allues from St. Martin de Belleville (1500 m - 2000 m approx.). It was known by some elderly Alluetains as la brɛvira. It might occasionally be collected and added to table top bouquets.

lo butɔ̃ d ɔr. Trollius europaeus L. Globe flower

(See Section 8.a.)

lo bwaesɔ̃. Bush

(See Section 9.a.)

la dzɑ̃'xɑ̃na. Gentiana lutea L. Great yellow gentian

(See Section 8.a.)

lo dzɛnepi. Artemisia genipi Web. and A. umbelliformis Lam. Genepy and Loose-headed wormwood

These two high mountain Artemisia species (2000+m) are included in the single taxon, lo dzɛnepi. Both are fairly common in the moraines and high mountain scree of Les Allues. Both were important medicinal plants, still enjoying today the reputation as panaceas. In mid to late summer, Alluetain men would venture well into the remoter areas of the valley in search of the small flowering stalks of these plants. When dry, three or four of these "branches" would be infused in water or milk, sometimes with "l'eau-de-vie," sugar and butter, and the resulting concoction drunk to combat colds, flu and a variety of other ails. It was said to cause profuse sweating and too strong an infusion was thought to be dangerous. Today the two Artemisia species are macerated primarily in "l'eau-de-vie" and drunk as a digestive. Probably due to the increased difficulty in procuring lo dzɛnepi because of restrictions imposed on gathering within the Vanoise National Park and because of the mystique which surrounds its use in the minds of "lowlanders," Artemisia liqueur has today achieved high local value as a social offering.

The two Artemisia species were variously distinguished by Alluetains as lo dzɛnepi malɔ and lo dzɛnepi fɛmɛla ("male and female Genepy"), though disagreements were common during the fieldwork period about which term applied to which Linnean species. Some people called A. genipi, lo dz nepi f m la, because it was smaller and finer than A. umbelliformis, which they called lo dzɛnepi malo. Others reversed the referents, claiming that A. genipi, "the male," was stronger than A. umbelliformis.

lo dzɛnɛvro. Juniperus communis L. Juniper

(See Section 9.a.)

d ɛrba. Herbaceous plants

(See Section 7.a.)

l ɛrba da la fwir. Hieracium pilosella L. Mouse-ear hawkweed

(See Section 8.a.)

l ɛrba epja. Graminae ssp. The larger grasses

(See Section 8.a.)

l ɛrba rɔdz. Onobrychis viciifolia Scop. Saintfoin

(See Section 8.a.)

lez ɛθɑle (ɛxɛle) di glaeʃe, la flɔ di glaeʃe. Leontopodium alpinum Cass. Edelweiss

While associated with moraines like the lo dzɛnepi, edelweiss was also said to grow in the short grass, high mountain pastureland just below the moraines. Gathering sites were generally fairly localized. Edelweiss was viewed as an attractive and rare ornamental either fresh or dried. It is probable that small bunches were sold at one time, as they were early this century at Termignon in the neighboring Haute Maurienne (Meilleur 1985:59).

la jets. Carex ssp., Juncus ssp. +. Sedges and Rushes

(See Section 8.a.)

le juθre, le juxre. Vaccinium myrtillus L. Bilberry

Bilberries were gathered in mid to late summer (usually in August) during the traditional period. Quantitative data were not available. There were several preferred sites in the commune where plants grew in dense stands, especially in communal grazing lands (lu kmɔ̃) and to a lesser degree, in forest clearings (lez ʂklɛrsi, see Chpt. 9). The fruit and vegetative parts alike were thought to be useful for treating intestinal disorders and/or digestive problems (gas, pain, diarrhea, etc.). Leaves and stems would be prepared in infusion while berries would be eaten fresh, in fruit "salads" or prepared in various types of tart. Fruit was gathered by hand early this century. Today, bilberry collecting "combs" are employed ("les peignes à myrtille").

While evidence is fragmentary, it appears that important communal grazing areas were periodically burned early this century to reduce the invasions of woody species and to favor the growth of herbaceous ones more suitable for domesticated animal forage. However, it was also claimed that the bilberry yield was favorably affected by these fires, suggesting that such controlled burning may actually have been a traditional practice employed to increase berry production. While one berry would be called na (or la) juθra, the plant itself was always referred to in the plural form, le juθre.

la kɑ̃'pɑ̃na. Campanula ssp. The larger Bellflowers

(See Section 8.a.)

la kɑ̃pa'nʂta. Campanula ssp. The smaller Bellflowers

(See Section 8.a.)

la karɛla. Festuca paniculata (L.) Sch. & Th. Golden fescue

(See Section 8.a.)

lo kɔ̃flabo. Gentiana acaulis L.. Koch's gentian

(See Section 8.a.)

la kokwara, de kokware. Heracleum sphondylium L. and Umbelliferae ssp. Hogweed, and by extension, most large "typical" Umbels

(See Section 8.a.)

lo laepe. Rumex alpinus L. Monk's rhubarb

Monk's rhubarb was common in the pasturable zone; it was especially dense around buildings (lo tər də la mɔ̃da/dɔ l arbe) and bovine picketing sites, both of which received extremely heavy amounts of manure. It was a useful plant in Les Allues with a multitude of applications. As fodder, it was cooked in whey with good King Henry (Chenopodium bonus-henricus L., see infra) and used to fatten pigs. After being cooked in open fires or prepared in soup, the "meaty" leaf petioles were often eaten at the montagnettes and at the mountain chalets in spring and summer. The large, leathery leaves were also used to wrap and to ensure the separation of butter cubes during their transport. When returning to his hamlet, an Alluetain fisherman might also keep trout fresher by wrapping them in leaves of lo laepe. Several people claimed the root might be useful against rheumatism. It is considered closely related to lo laepe de tsã (Rumex obtusifolius L./ Broad-leaved dock, see Section 4.a.).

lo laetsɔ̃. Sonchus ssp. and Taraxacum officinale Web. Sow-thistles and Dandelion

(See Section 8.a.)

la lɛ̃gabwe. Polygonum bistorta L. Bistort

(See Section 8.a.)

la mɑ̃ di bɔ̃dʒ/la mɑ̃ di dʒablo. Orchidaceae ssp. The common colorful Orchids with palmate roots

(See Section 8.a.)

la margɔ'rita. Leucanthemum vulgare Lam. Ox-eye daisy

(See Section 8.a.)

la mɛ̃ta sarvadz. Mentha longifolia (L.) Huds. Horse mint

(See Section 8.a.)

lo milpertɥi. Hypericum ssp. St. John's worts

(See Section 8.a.)

lo mjãfjã. Amelanchier ovalis Med. Amelanchier

(See Section 9.a.)

lo mjozoti. Myosotis arvensis (L.) Hill. + M. alpestris group. Forget-me-not

Several species of forget-me-not are common over much of Alluetain territory; in hayfields, pastureland and disturbed areas, along trails, etc. The striking, light-blue flowers were especially noted within the pasturable zone folk biotopes, most notably around montagnettes. Bocquets were occasionally collected to brighten up living areas away from the hamlets.

l ɔrtʂe. Urtica dioica L. Nettle

(See Section 5.a.)

lez otə'nɛ̃se. Colchicum autumnale L. Meadow saffron

(See Section 8.a.)

le pate də tsɛt. Antennaria dioica (L.) Gaert. Mountain everlasting

(See Section 8.a.)

la pɛtɛrla. Rhododendron ferrugineum L. Alpine rose

(See Section 9.a.)

lo prɛ̃ pɔθe. Thymus serphyllum L. Wild thyme

(See Section 8.a.)

la pʃir d ano. Primula farinosa L. Birdseye primrose

(See Section 8.a.)

la purta rɔza. Alchemilla xanthochlora Rothm. Lady's mantle

Lady's mantle is an extremely common plant of fresher sites in the hayfield and pasturable zones. However, it was generally recognized nomenclaturally only in pastureland (lo paturadzo). Livestock was sometimes prevented from grazing concentrations of lady's mantle in the early hours of the day because the dew (la rɔza) which collected on its leaves was thought to provoke swelling and digestive problems in bovines. Some people lumped lady's mantle with alpine lady's mantle (lo te, see infra), occasionally preparing it in infusion and drinking this as a warm beverage.

le rɔ'dzɛte. Vaccinium vitis-ideae L. Cowberry

Common in "rougher" areas of open communal pastureland, especially on the west-facing valley wall, the red-berried cowberry was known to be edible but was much less frequently gathered than bilberry. The farinaceous fruit was occasionally eaten fresh or after having been frozen (which was said to improve its flavor). The plant name was always elicited in the plural form; the singular, la rɔ'dzɛta, would only be employed to refer to a single berry.

la salada. Taraxacum officinale Web. Dandelion

(See Section 8.a.; see Section 5.a.)

lo sãti'gɔla. Rumex ssp. The small-leaved Docks and Sorrels

(See Section 8.a.)

lo te (sar'vadzo). Alchemilla alpina L. Alpine lady's mantle

Alpine lady's mantle is an extremely common plant in the higher Alluetain pasturelands. It was occasionally gathered, dried, and then infused, and the resulting "wild tea" drunk as a warming beverage. Lady's mantle (A. xanthochlora Rothm., see supra), known by some Alluetains by the same vocable, or as la purta rɔza, was similarly, though less frequently employed. It is probable that such beverages were much more common before coffee and tea became regularly available.

lo trijole (sar'vadzo). Trifolium pratense L. Red clover

(See Section 8.a.)

le tsa'pɛle. Pulsatilla alpina (L.) Delarbre. subsp. sulphurea (DC.) A.&G. Yellow alpine pasque flower

(See Section 8.a.)

lo tsardʒ̃. Carduus ssp., Centaurea ssp., Cirsium ssp. Thistles, Star-thistles and Knapweeds

(See Section 8.a.)

la tsardɔsa. Carlina acaulis L. Stemless carline thistle

(See Section 8.a.)

la tsɛv'rɛla. Laserpitium latifolium L. Sermontain

(See Section 8.a.)

lo tsny. Nardus stricta L. Mat grass

(See Section 8.a.)

la vɛrkwɛna. Chenopodium bonus-henricus L. Good King Henry

Common around buildings in the pasturable zone, good King Henry was regular fare for humans cooked as a fresh, spring green. Throughout the spring and summer it was either boiled in whey or given fresh with monk's rhubarb to nourish and fatten pigs.

la vjɔ'lɛta. Viola calcarata L. Alpine pansy

Dried flowers of alpine pansy, prepared in infusion, were a major traditional remedy against colds and flu. In spring, they would be gathered in the common pastureland at the moment this zone was frequented by women and children for animal grazing and "tomme" cheese-making. In fall, flowers (from the second blossoming) were also occasionally gathered by men while hunting or while excavating marmots. Flowers were dried before being used.

lo vraro. Veratrum album L. False helleborine

(See Section 8.a.)

NOTES: CHAPTER 10

1. Controlled burning of brushland and degraded pastureland to maintain vegetation at a successional stage favoring more tender, abundant forage for both domesticated and wild ungulates and/or Vaccinium and other berry species, has been fairly extensively documented among western North American Indians (Hunn, pers. comm.; Lewis 1977, 1982; Minore 1972; Norton 1979). It is likely that this practice, simple and highly effective as a landscape management technique, was also widespread in the northern Alps during the traditional period.

2. Toward the end of the fieldwork period, my principal informant mentioned the term lo tsoby, which he defined as a communal area in front of a group of montagnettes, sometimes delimited from surrounding areas by a small wall. One other person claimed instead it was the assembly place for animals in the hamlets. Time did not permit further enquiry involving this term.

3. Probably the only way today to determine the ratio of "montagnettes" to families would be to count the number of montagnettes cited in the two traditional period cadastral censuses (the Cadastre Sarde of 1732 and the Cadastre of 1913) and compare this figure to the number of families ("feux") occasionally censused during the traditional period (see, for example, Table 10a).

4. The northern Alps, and the Tarentaise in particular, are known for their "grande montagne" pastoral regimen, and the pastoral organization found in Les Allues during the traditional period was not exceptional. In this pastoral type (see esp. Arbos 1922:383+; Rey 1930), the milk-producing animals (especially bovines) of many households were grouped into herds under the direction of a cheese-making specialist and his alpage team, liberating the owners for other activities. Each herd was moved into an alpage or "grande montagne" during the summer months where large, usually "gruyere-type" cheeses were made. In the Tarentaise, most alpages were communally owned. With its eight privately owned and four communally owned "grandes montagnes" in the 19th century, Les Allues deviated from this norm, but not in the manner that production was organized. The "grande montagne" type of exploitation is often contrasted with that type known as "petite montagne," practiced in the neighboring Haute Maurienne and in parts of the southern Alps. In this type, most households owned their own "petite montagne"--much smaller in surface area compared to a "grande montagne"--and family members (usually women) independently fabricated smaller cheeses ("tomme," "blue cheese," etc.) from their own herds, or from these animals and others rented to augment production. This regimen is not to be

confused with the system of montagnettes found in Les Allues. In those communes in which families practiced the "petite montagne" type, privately owned montagnettes were also used in the intermediate seasons, much as they were in Les Allues (see Meilleur 1985:37-42). Both pastoral regimens--"grande montagne" and "petite montagne"--were oriented toward cheese and butter production for market sale. The major differences were size of the exploitation, who did the work, what was manufactured and how the profits were divided.

5. Today, for purposes of marketing and quality control, the "gruyere" cheese made in Les Allues, and in the Tarentaise in general, is fabricated according to the specifications of the "gruyere" that was traditionally made in the Beaufortin to the north. This type of "gruyere" is called "Beaufort."

6. Quantitative data on subsistence versus market shares of this production were not readily available. Perhaps further archival work would reveal some light on this subject. Clearly most, if not all, "gruyere" cheese--made only by alpage teams--was marketed. "Tomme" and "serac" cheeses produced by alpage teams appeared to be split in undetermined percentages between market and local consumption. "Tomme" and "serac" production by individual households--in spring and fall at the montagnettes, and in winter at the hamlets--appeared mostly to be internally consumed by the family producers.

7. Marmot-digging appears to have been a fairly important activity for men and boys of some families. In Les Allues, the common alpine marmots (la marmota/Marmota marmota) generally entered their winter quarters for hibernation around the first of October. By the second or third week of the month, teams of diggers were attempting to extricate them. Success depended, for example, upon the thickness of the plug that the marmots had placed near the hole entrance, the depth of the den and the difficulty in locating it, the number of sleeping animals in the den, etc. Marmots might either be eaten right away in "potée" or kept while still hibernating in a cellar and eaten later. Young animals were preferred. Fat was boiled down into oil and rubbed into rheumatic joints, into the chest against coughing, or on any painful part of the body. Early this century, marmot skins were sold in Moutiers. Most people agreed that only a small number of Alluetain men hunted with shotguns or rifles early this century. Chamois (lo tsamwe/Rupicapra rupicapra) were primarily hunted with rifles, while smaller game was hunted with shotguns. Chamois were hunted in late fall or early winter when other economic responsibilities had diminished. Tracking was made easier after the first snowfall. Small teams of two or three--made up of men that usually hunted together--would split the kill made by one team member equally among themselves. Chamois were

usually eaten fresh, or sometimes salted. Occasionally all or part of the animal, including the trophy, was sold in Moutiers. Many other smaller animals were taken with shotgun, collar traps, dead-fall traps, etc., either for food or for their skins. The dietary and income contributions of marmot-digging and hunting are not known.

CHAPTER 11

Conclusion

In this study I have been concerned primarily with folk knowledge and its relationship to subsistence economic behavior in the high mountain peasant community of Les Allues in the northern French Alps. I have assumed throughout that each event related to plant production or procurement was a complex of interwoven cognitive operations (gnosis) and practical acts (praxis). While the entirety of a single productive sequence involving a given resource is undoubtedly much more complicated than any of my descriptions, I believe I have demonstrated the utility of the folk biotope not only as the pertinent category used by the individual peasant to intellectually apprehend biotic space, but as the basic category toward which he directs his energies in the appropriation of this space. An appreciation of the folk biotope as the fundamental "native" ecological category mediating between the decision to act upon a folk botanical taxon and the taxon itself, as it is cultivated or gathered, permits part of the production process in Les Allues to be revealed. While highly simplified, I believe the lineal connection between decision-to-act, folk biotope, folk phytocoenosis and folk taxon, as I have described it in Chapters 2 and 3, is potentially useful in understanding subsistence production in any small-scale society with direct links to the land and its resources.

In Chapters 4 through 10, I described the major productive sectors of the traditional Alluetain economy, with an emphasis on agriculture and collecting. My intention was not to explain why Alluetain peasants selected certain folk biotopes and vegetal groupings for recognition rather than others, but to report what these categories were, how they were used to structure biotic space and what the roles of their components were in the overall productive process. Some of the older published literature described certain aspects of traditional peasant ethnobotany (Cadoret 1918-1929; Chabert 1897; Constantin & Gave 1908; Guicherd 1930), but this focused almost exclusively at the regional level. I have therefore allotted considerable space in these chapters to describing the some 250 folk botanical taxa recognized in Les Allues and the roles of each in production as it occurred at the level of the individual household. My focus in these chapters was thus overwhelmingly on productive forces rather than on the social relations of production. However, as Godelier has pointed out, "although productive forces and relations of production are distinct phenomena, they never exist separately" (1978:763). While I have mostly been interested in demonstrating how folk knowledge was employed in the traditional economic effort, the ethnographic accounts of the productive sectors in Chapters 4 through 10 generally include descriptions of relations of production as well. No attempt was made to analyze these relations. However, several intriguing patterns emerged which are worthy of further study. Primary among these were the unexpected land use patterns associated

with the imposition of different levels of collective management upon privately owned lands (cultivated fields - Chapter 4; vineyard - Chapter 7; hayfield - Chapter 8).

The subsistence agro-pastoral economy of Les Allues described in this study no longer exists. It has been replaced for the most part by a winter and summer sports tourism-based service economy characterized by wages and salaries. However, the rate of abandonment of different aspects of traditional economic behavior has been uneven in the last forty-odd years. "Full field" agriculture and many gathering activities--usually generating commodities for internal consumption--were first to be abandoned, as the Alluetains turned increasingly to the market for their needs (Meilleur 1982). The national and regional policy of transforming mountain agro-pastoralists into dairy product and stock-raising specialists--producing commodities primarily for sale--delayed the collapse of pastoral activities and the degradation of pastoral lands (sub-alpine and alpine pastureland, montane and sub-alpine hayfields) in the post WWII period. But pressure to transform the already cleared pastureland and hayfields into ski slopes equipped with lifts, and the attraction of higher wages and less difficult working conditions in service industries has now led to a near-total abandonment of pastoral activities as well. Consequently, brush and forest lands have expanded rapidly as cultivated, then pastured surfaces, were deserted. Most cultivated lands (cultivated fields, hayfields, hayfield-orchards, hemp plots, vineyards) have today been foresaken, though some families still try to maintain a few of their

properties in cultivation. Those parcels most easily accessible, usually adjoining a paved road, are those most likely to be cultivated or mowed. Family gardens, however, seem to be holding their own. Hunting, which before the war was practiced by a small number of men, has now become one of the most popular of masculine pastimes.

With the ski slopes have come new housing and the shops and services necessary to support an important seasonal population of vacationers and the now modernized, wage-earning Alluetains. Construction for the resort of Meribel began in the 1950s at the upper limit of the traditional habitation zone, on the east valley wall. A steady population decline, which began in the mid-19th century, had by the end of WWII left much of the land unused or underused by local standards. Most peasants were thus more than happy to sell the hayfields and cultivated fields found in this part of the valley to outside investors for small amounts of ready cash. Today, the resort continues to creep up the east valley wall. The newer resort of Meribel-Mottaret, located yet higher up-valley, is built mostly on pastureland managed earlier in this century for gruyere cheese-making. The two resorts, sharing a high altitude airport, a 9-hole golf course, a covered swimming pool, an ice-skating rink and 16 tennis courts, are surrounded by some 100 kilometers of groomed ski slopes, 40 ski lifts and today have a capacity to house and support over 20,000 people daily. Small wonder that the cultivated fields today lie unplanted, the hayfields unmowed, the fruit trees unpruned and weighted with mistletoe, and the vineyard parcels renounced or sold.

The sight only a short time ago of over 1000 sheep, goats and milk cows being driven in June into the alpine pastures--bells banging and dogs barking--or of winter rye ripening in the late summer sun, can no longer be appreciated. The once rigorously managed and finely manicured landscape has been left today to the ski slope managers and to the bushes and brambles of natural succession.

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- Series D., No. 1
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ADS (Archives Départementales de la Savoie)
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- 1FS394
- 1FS594
- 5FS312
- 5FS313
- 5FS314
- 5FS315
- 5FS316
- 5FS317
- 5FS324
- 20F11
- 27M1
- 27M2
- 27M4
- 27M11
- 27M17
- 27M20
- 27M28
- 27M36
- 27M45
- 27M54
- 27M63
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DDA, SS (Direction Départementale de l'Agriculture, Service-Statistique)
- 1920
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- 1924
- 1925
- 1929
- 1942
- 1944
- 1945
- 1946
- 1947

APPENDIX 1

Ordinamentum Communitatis Allodiorum

The Forest and Pastoral Regime in a 14th Century Tarentaise Commune: Ordinance of the Commune of Les Allues (a)

"In the name of God, amen. The year of Our Lord, 1390, Sunday the 15th of May in the church of Les Allues, at the habitual place and

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(a) This English translation of an original 14th century document is provided to demonstrate the antiquity of community control and regulation of forest and pasturelands (see Chpts. 9 and 10). Even though some passages are difficult to understand, this ordinance reflects the importance attributed by late mediaeval Alluetains to protecting and ensuring, to the exclusion of all others, equal access of all community members to collectively owned properties and resources. While evidence for both communal-good and conservation ethics can be implied from some passages of this statement, it is especially through collectively agreed upon coercion that these goals appeared to be met. This document also strongly suggests that the traditional agro-pastoral economy--as it was known in later years--was fully functioning by this late mediaeval period.

The original document, handwritten in late mediaeval Latin sprinkled with dialect terms, exists somewhere in the archives of the Académie de la Val d'Isère, in Moutiers. By chance, I came across a published version of this document in Recueil des Mémoires et Documents de l'Académie de la Val d'Isère, Nouvelle Série, Tome 2, Moutiers 1913:424-434. Unable to read Latin myself, I asked help from my friend and historian colleague M. l'Abbé Marius Hudry, Director of the diocesan archives. He asked his religious colleague, M. l'Abbé J. Plassiard, to undertake a translation into French. Born and raised in the Middle Tarentaise and a fluent speaker of his communal Franco-provençal dialect, l'Abbé Plassiard kindly furnished me with a translation which I promptly translated into English. Upon my return to Seattle, a second translation of the Latin document was asked of Dr. Dave Madsen, Assistant Professor of Latin and late Republican history of Matteo Ricci College, Seattle University. On the whole, this second translation, from Latin to English, was very similar to my earlier Latin-to-French-to-English version. However, where there are discrepancies, I selected those passages which appeared to me to be ethnographically most reasonable.

hour. The present ordinance was read in a dynamic, loud and intelligible voice, and in the vernacular, in the presence of the people assembled in the church for the divine services. Here then is the ordinance. It was established by Willehm Burgod, Anthoine Baral, Poncet Blanc, Pierre Cristin and Dunand Girel, all of the said parish of Les Allues, who were selected by the universal assembly of men of the said parish of Les Allues, or by the largest part among them, so that they regulate and act for all and each of the quarters of the said parish of Les Allues, and on all and each of the affairs to realise and to regulate in the said parish, and that they do this as was done by their predecessors.

And first they order that nearly all the interdictions and all the fines which are imposed be so on the "masters" (?) of those who commit damage to persons or to property as it is the custom that those who prejudice others be penalized.

Likewise, they impose a fine for each "abietis" plant (probably Picea abies (L.) Karst./Norway spruce, much more common in Les Allues than the silver fir/Abies alba Mill., see Section 9.a.) from "les Perrieres" removed by the "vion" ("small one man trail") passing through "so lesserey" and "la graniryz" as far as "Ronze chenu," or by the trail below and in the wood "de sordayssiez" and "bois girart," of six "sols forts" (measure of currency).

Likewise, in any other "bois noir" (probably dense coniferous forest of Norway spruce), they impose for each plant, a fine of eighteen "deniers forts" (measure of currency) for each occurrence.

Likewise, they order that no one should climb into a spruce tree to cut branches under penalty of a fine imposed at the place where the infraction was discovered.

Likewise, they order that no one can exculpate himself from this fine, whether the plant be "darbello" ("a juvenile tree"?) or injured by "sechiniz" (probably from "secher"/"to dry") as long as it still had "de days viridi" ("green branch tips").

Likewise, they order that no one make floor boards or beams with "bois noir" (probably mature spruce), except if these be beams _____ (?), under penalty of a fine of three "sols forts" for each time that one is discovered by "les procureurs" ("enforcement officers of the community," hereafter, "police").

Likewise, they impose for each sled load of cut tree trunks, whether they be from the summit of the tree or from the base, a fine of three "sols forts" for each time that this be seen by the police or by the "forestiers" ("community forestry representatives," hereafter, "foresters").

Likewise, they order that no one shall make "des rioutes" (probably either flexible branches or roots used to attach leafy bundles or to make baskets) or _____ (?) with a tree, under penalty of twelve "sols forts" for each plant and for each time one is discovered cutting them and transporting them by the police or foresters.

Likewise, they order that no one remove the bark or "piconeyt" (draw pitch?) from a spruce tree, under penalty imposed at the place that one was surprised by the police or foresters.

Likewise, they order that no one make "ecelles" (vine props?; ladders?) with young spruce trees under penalty of three "sols forts" for each time that one is discovered by the police or foresters. And under the same penalty, that no one shall make enclosures on their properties with the roots or with the spruce trees, the penalty levied for each time that they be discovered by the police or foresters.

Likewise, they order that no one shall make barriers of spruce trees from the footpath "del les cutilles" to "combam nantier" and from the summit of "de lestrays" and from the cross "del uchicayl" toward the small wall which belonged at one time to Pierre Sibille, under the penalty prescribed above. And under the same penalty, that no one put wooden poles in barriers, and this each time one is discovered by the police or foresters, and for each wooden pole.

Likewise, they order that no one can cut wood in the forest of the community without authorization or without posting a bond (?).

Likewise, they impose a fine of six "sols forts" for each "arola" (see 1 arola/Pinus cembra L., Section 9.a.) or "arola" pole sawn in the forest or resawn at the house or elsewhere. And, under the same fine, no one may seize logs or other wood having the mark of the community. And, under the same penalty, no one may interfere with seizures by foresters or with police and foresters in marking wood with the mark of the community, as it has been the custom, under penalty of the same fine. And under the same penalty, no one may restrict (from?) the police and foresters the marked logs and poles, as is the custom.

Likewise, they order that no one shall remove the mark of the community from logs and poles in any fashion without the permission of the police, under penalty of six "sols forts."

Likewise, they order that these police can reduce or increase the forest in "ban d'hiver" (?) under the penalty of nine "sols forts."

Likewise, they order that the same police may seize all contraband wood throughout the parish of Les Allues found to have come from

the said forests, whether at the house or elsewhere, that no one can interfere with them, and that it is out of the question that one might take this wood and keep it, once it has been seen as being in infraction, or when one has been made aware that the infraction is known to the community in question, under penalty of 12 "sols forts." And under the same penalty, each person is held to open his house to these police when asked, and they order, that if refused, they can with their proper authority, force the door and enter the house without any magistrate being able to reproach them, as is the custom.

Likewise, they order that no one sell or cede to a non-community member anything coming from the forests, no logs, nor poles, nor "generios" (?) nor planks for chests, under penalty of 15 "sols forts" for each person, and any person from Les Allues who finds someone moving or taking wood from the forests, logs, or poles, can stop him and seize the wood by his proper authority, without committing any kind of offense.

Likewise, they order that each person from Les Allues is held to follow the police at their request for the service of the community, under penalty of six "sols forts" for each time they refuse when they are needed.

Likewise, they order that each person is permitted to cut juniper (see Section 9.a.) from above the "bois noir" ("the spruce forest") without damage or risk of seizure, in a manner that it is brought out by "los choucis" and by the "combaz del losereys" at a time that will be fixed, but that no person may take spruce logs or poles under penalty of 18 "deniers forts" for each time one is surprised by the police or the foresters.

Likewise, they order that no one take it upon himself to cut mature spruce or Siberian stone pine (Pinus cembra L.) of the community of Les Allues at night or on feast days, or from All Saints (1 Nov.) until the end of May, under penalty of nine "sols forts" for each time one will be apprehended by the police or foresters for each plant.

Likewise, they order that no one shall cut hay in the pasturelands of the quarters of the community of Les Allues (see Chpt. 10), under penalty of six "sols forts" for each time that someone is surprised by the police, the foresters, or by someone else drying, carrying, or entering into his home some product of these pasturelands. And anyone of this parish can, without inconvenience or damage, seize any stranger (non-community member) cutting, drying or carrying out of the parish hay from these pasturelands. And similarly, anyone who finds another community member in the act of cutting or drying hay in these pasturelands can stop him and seize the hay. And under the same penalty, anyone from this parish of Les Allues who finds another in these pasturelands cutting or drying and

carrying hay away is held to make this known to the police and foresters.

Likewise, they order that no one from this parish of Les Allues attempt to hold nor hold more than one she-goat on the territory of the parish of Les Allues and for each extra goat, they will impose a fine of five "sols forts" for each time that it be discovered by the police or the foresters or by someone else before the feast of St. Michael the Archangel (29 Sept. ?). After this date (?) all goats which are seen by the police, the foresters or someone else, of their proper authority, can seize and retain them until the moment that the damage (if any) they caused is repaired. And that if this damage is not repaired within two days and two nights, the police will take the goats to the officers of the Lord Archbishop of Tarentaise.

Likewise, they order that no one from this parish of Les Allues hold in his flock or in the flock of another community member, whether he wintered, bought or rented them, more than three x fifteen (45) animals only, under penalty of nine "sols forts" for each time he is discovered by the police and counted on the territory of the parish of Les Allues. And for the same penalty, that no one interfere with the police in counting them.

Likewise, they order that no one from the parish of Les Allues mix his animals, in herd or at home, with animals of a stranger who is not a member of the parish of Les Allues, for the sake of pasturing them on the territory of this parish under penalty of nine "sols forts" for each time that they be discovered by the police. And that anyone from this parish can, of his own authority, seize these animals and take them away without risk of reproach and take them to the police who can keep them until the damage is repaired or until they are assured of the repair of the damage made by the animals to the common land and pastures, to the advantage of the community. And moreover, no one from this parish of Les Allues can rent or put into the alpage of the community, in hopes of gaining "fructum" ("fruit," most likely milk products) from those animals rented from outside the parish.

Likewise, they order the police and anyone else from this parish, finding animals from outside the parish grazing on the territory of the parish, by their own authority and without prejudice, must drive them away or bring them to the police who can hold them until restitution is made, to the profit of the community, for the damage caused to the common land and to the properties of this parish.

Likewise, they order that no one from this parish hold, keep or bring animals from outside the parish into his house or into his properties and that he cannot form a partnership or association with a person who is not a community member (probably in owning or holding animals).

The animals described above should not and cannot remain more than two nights at the most in the territory of the parish, under penalty of ten "sols forts" for each time they are discovered by the police or by someone from the parish.

Likewise, they order that no one from this parish of Les Allues will be able to hold and graze, whether obtained by sale or by rental, more than two bulls, two heifers or two cows on the territory of the parish for each time they be discovered by the police, or by someone else from Les Allues, under penalty of six "sols forts" for each cow, bull or heifer in his possession beyond the limit.

Likewise, they order that no one from Les Allues may stop his animals in any field marked by anyone or on communal territory before the feast of the Apostles Peter and Paul (?), under the same penalty for each time one is discovered by the police, the foresters, or by someone else. Under the same penalty, no one may destroy or damage a "chisseriam" (?) or its parts for each "chisseria," and the person who does so is held to make repairs.

Likewise, they order that the foresters of the quarters supply themselves only with dead wood, under penalty of five "sols forts" for each time and for each load discovered by the police or by someone else. And that the seizures made from those in infraction are in accord with _____ (?) of these foresters.

Likewise, they order that no one from this parish be withheld from use of the forest, nor should they help foresters for the foresters' own account with their animals or in any other manner, under penalty of five "sols forts" for each time and each charge which will be discovered by the police or someone else. And that they themselves and anyone else who wishes to become a forester can be. And that whomever of this parish who owns a ram must "empanoyllet" (pen it?) and maintain it carefully "empanoyllyatum" (penned) from the feast of St. John the Baptist (?) until eight days before the feast of the Blessed Virgin Mary (8 Sept.) under penalty of two "sols forts".

Likewise, they impose that each small herd of animals of the quarters found grazing in the forest "de tuylleta," except when passing through, will be penalized six "sols forts" for each small herd and for each time that it be discovered by the police, foresters or others in this forest. And under the same penalty, that no one attempt to cut a tree in this forest, for each tree and for each time.

Likewise, they order that no one "aioczet vivis" (mix?), nor make "aioncz" (make a common mixed herd?) of animals "turgiis" (probably pregnant) which are from outside the parish whether by sale, rental, or any other manner, under penalty of six "sols forts" for each time this will be discovered by the police on the territory of this parish that these animals move up (to the alpages?) in a small

herd (or one herd, all together?), if it is only one "aioucz" (common herd?) or three fifteens (45) in which there are no lambs from outside the parish (?).

Concerning those animals born in the parish, they can be grazed freely on condition that "fructibus tamen" ("fruits communs"/"communal alpages where milk products are manufactured") and properties be respected.

Likewise, the police order that no one from the parish can keep within the parish territory animals which are sick or infected with "roynys" (?), under penalty of five "sols forts" for each time that this be discovered by the police or by anyone else. And, under the same penalty, that any man who has such animals at his house must drive these sick animals away from parish territory within two days. And that the police can themselves with impunity and without special order, drive from the territory of the parish sick animals each time they know about them.

Likewise, they order that no one from Les Allues graze, nor hold a small herd of pregnant animals in the community on the hillsides of "porteta" and "arola chapelluat," before the coming feast of St. Lawrence (10 August?), under penalty of twelve "sols forts" for each time that this be discovered by the police, the foresters or someone else, by this is meant above the limits of "porteta," "rochacio" and "arola chapelluat."

Likewise, they impose for each piece of spruce cut below Hauteville, Villaret and Biollay, on the territory of the parish of Les Allues, between "rochacio de deroachit avoz" and the point "de cresto girodi" and "rochacio tabernariorum" and "cuchelo" above, a penalty of five "sols forts" for each spruce plant and for each time discovered cutting or transporting by the police and foresters. This is meant to refer to those spruce trees which grow outside of the dense spruce forest and the forest of "tuylleta."

Likewise, they order that whomever of this parish knows of someone who is holding animals in infraction of these above ordinances and who is causing damage to the commonlands of the parish, despite these ordinances, is held to inform the police or one of them, under penalty of one hundred "sols forts."

Likewise, they order that the present ordinance be held as perfectly valuable and durable and observed until the time another be established, duly written and read, and in the meantime the police must go about their business for ten days, that if someone from this parish wishes to improve or correct something in this ordinance, that this be improved and corrected within eight days.

Likewise, they order that each policeman elected in the church of Les Allues to this office cannot refuse to be a policeman once he has assumed office, under penalty of twenty-eight "sols forts" for each refusal. And under the same penalty, that he is held to signal any prejudice which could result to the community, no matter what, and that each policeman must be taken at his word, as it is custom.

Likewise, they order that if someone distrusts a policeman once invested, that this person be held to choose and to present another policeman capable of fulfilling the office, and that this replacement be accepted by the community, under penalty of six "sols forts."

APPENDIX 2

A Nutritional Evaluation of Alluetain Foods

An evaluation of the nutritional adequacy of traditional diet among mountain peasants in Savoie has nowhere been attempted. While types of food consumed by peasantry in mountainous Savoie have been fairly well described by Fejoz (1976[1&2]:89-95), Hudry (1979:207-231), Nicolas 1979:69-80), and to some extent, in portions of this dissertation, qualitative and quantitative appraisals of nutrients and energy of food are lacking. With diet undoubtedly quite different today from what it was even fifty years ago, this is probably due mostly to the difficulty in assessing amounts consumed by average members of mountain communities during the traditional period. However, even if such data could be had, it would then be appropriate to submit many of the less well known traditional foods (domesticated and gathered; prepared and unprepared) to nutritional analyses. In effect, while some of the nutrient and energy values for traditional foods are probably quite close to the values published in standardized tables for similar products, it is likely that some values would be significantly different (e.g., see the apple discussion, infra). Many of the alimentary products traditionally consumed in Alluetain society have not been analyzed at all (gathered and hunted products, fruit and fruit derivatives, etc.).

In lieu of such a comprehensive study, this appendix roughly evaluates the nutritional adequacy of the Alluetain diet as it was

described quantitatively in 1862. In the "Ten-year (agricultural) statistic" published that year (ADS, 27M11), the Alluetain reporter was asked to estimate "la consommation journalière...par individu adulte (tous les repas compris)...des petits propriétaires-cultivateurs" ("the daily consumption...by adult [all meals included]...of the small owners-agriculturalists"). Table A2a reproduces the responses provided in grams (of solid foods) and in liters (of liquid foods). Table A2b resumes the values in crude protein, energy and ascorbic acid of this diet as calculated from published food consumption tables.

Table A2a: Daily Food Consumption in Les Allues in 1862 (fm ADS, 27M11)

Type of Food	Quantity Consumed	% of Total (by weight)
Bread (rye & barley mixed)	700 grs	21
Soup	1.2 ltr (1200 grs)(a)	37
Milk foods	0.5 ltr (500 grs)	15
Meat	60 grs	2
Vegetables	250 grs	8
Cheese	60 grs	2
Wine	0.5 ltr (500 grs)	15
Total Consumption	3270 grs	

(a) liters converted to grams at the ratio of 1 ltr = 1 kg

Table A2b: Estimated Nutrient and Energy Values (Crude Protein, Energy, Ascorbic Acid) of the 1862 Alluetain Diet (b)

Type of food	Crude Prot	% of T	Eng	% of T	Asc acid	% of T
Bread	63.0 gms	52	1680 kcal	53	0	
Soup	10.8 gms	9	384 kcal	12	0	
Milk foods	17.8 gms	14	325 kcal	10	10 mgs	34
Meat	9.6 gms	8	211.2 kcal	7	0	
Vegetables	3.3 gms	3	62 kcal	2	19.5 mgs	66
Cheese	16.5 gms	14	222 kcal	7	0	
Wine	1.0 gm	1	300 kcal	9	0	
Totals	121.7 gms		3184.2 kcal		29.5 mgs	

(b) The figures used to calculate protein, energy and vitamin C values for Alluetain foods were obtained from two published food composition tables and are presented here. All figures are based on 100 grams of food product. Liters were converted to grams at a rate of 1 liter = 1 kilogram. Those foods whose descriptions most closely matched Alluetain foods were selected:

Table A2b: Continued

Type of food	Crud prot (gms)	Eng (kcal)	Asc acid (mgs)	Source
"brown bread"	9.0	240	0	Osborne & Voogt 1978
"vegetarian vegetable soup, commercial"	0.9	32	0	Watt & Merrill 1963
"milk whole fresh"	3.5	65	2	Osborne & Voogt 1978
"pork, salt, raw; beef, carcas (total edible, utility grade); lamb, composite of cuts, good grade; chicken, broiler, fresh only, cooked" (mean calculated from these meats)	16.0	352	0	Watt & Merrill 1963
"cabbage savoy cooked; carrots boiled; leeks boiled; onions cooked; potatoes old cooked" (mean calculated from these vegetables)	1.3	24.8	7.8	Osborne & Voogt 1978
"natural cheese, swiss" (domestic)	27.5	370	0	Watt & Merrill 1963
"table wine red, 10%"	0.2	60	0	Osborne & Voogt 1978

Table A2c: Recommended Minimum Daily Requirements Suggested by the NAS (fm, Robinson 1978)

	Protein	Energy	Vitamin C
Men (23-50, 70 kg)	56 gr/day	2700 kcal/day	45 mg/day
Women (23-50, 58 kg)	46 gr/day	2000 kcal/day	45 mg/day

Discussion

Though little is known about the nutrient and energy needs of the alpine peasant, this rough nutritional evaluation of the 1862 estimate of Alluetain food consumption indicates that the mountain diet was most likely substantial and more than adequate in protein and energy intake when compared to the "Recommended minimum daily requirements" suggested by the National Academy of Sciences (see Table A2c). Bread, though representing only about one-fifth of total daily consumption by weight, clearly dominated in satisfying both protein and energy requirements.

Considering the 1862 estimate alone might lead to the erroneous conclusion that the traditional Alluetain diet was deficient in Vitamin C. Though not reported in 1862, fruit intake was a common feature of the traditional Alluetain diet, as I have shown in Chapters 5 and 6. Consumption of only one or two fruit of local varieties per day over much of the year--which most likely occurred during the traditional period--would significantly increase Vitamin C intake, probably even much more so than the food consumption tables would

suggest. While Osborne and Voogt (1978:84) give the standardized value of 6 mgs of Vitamin C for 100 grams of raw apple, Monico (1980:288) has recently shown that Vitamin C values in traditional Swiss varieties can quite easily be twice or three times this value. Consumption at various times of the year of fresh, wild greens and both wild and domesticated berries as well as apples, pears and plums over most of the year must certainly have assured quite an adequate Vitamin C intake.

INDEX TO ALLUETAIN AND LATIN PLANT NAMES

INDEX TO THE ENGLISH AND FRENCH PLANT NAMES

Biography

Brien Meilleur was born to Marijane and Peter Meilleur on 4 April 1949 in Seattle, Washington. He attended Bellevue High School in Bellevue, Washington. After two years of secondary education at the Universities of Colorado and Washington, he enlisted in the U.S. Navy. There he served for two and one-half years and participated in the recovery of Apollo XVI. He re-enrolled at the University of Washington and earned a Bachelors and Masters degree in Anthropology and in 1986, a Ph.D. He has published several articles in English and French, and is the author of a small book, Gens de Montagne: Plantes et Saisons.