

für den Brocken, was angesichts der südlicheren und meernäheren Lage der ersteren von vornherein als unwahrscheinlich gelten muß (21).

Der vorstehende Aufsatz gibt ein Beispiel dafür, wie die Methoden der modernen, dreidimensional denkenden aerologischen Klimatologie mit den Methoden der klassischen Mittelwertklimatologie verknüpft werden können.

Schriftverzeichnis

1. G. T. Trewartha: An Introduction to Climate. New York-Toronto-London 1954. 395 S.
2. V. Conrad: Die klimatologischen Elemente und ihre Abhängigkeit von terrestrischen Einflüssen. In: Köppen-Geiger, Handbuch der Klimatologie, Bd. I, B, Berlin 1936. 565 S.
3. Hann-Süring: Lehrbuch der Meteorologie. Bd. I, 5. Aufl., Leipzig 1937.
4. J. Hann: Die Wärmeabnahme mit der Höhe an der Erdoberfläche und ihre jährliche Periode. Sitz. Ber. Kais. Akad. Wiss. Wien, Math.-naturw. Cl. Bd. 61, II, 1870, S. 65-81.
5. J. Hann: Handbuch der Klimatologie. I. Bd. Allgemeine Klimalehre. 3. Aufl. Stuttgart 1908. 394 S.
6. J. v. Hann - K. Knoch: Handbuch der Klimatologie. I. Bd. Allgemeine Klimalehre. 4. Aufl. Stuttgart 1932. 444 S.
7. J. Hann: Die Temperaturabnahme mit der Höhe in der Serra da Estrella. Meteorol. Zeitschr. 25, 1908, S. 132-34.
8. H. Lautensach, Portugal I. Pet. Mitt. Erg. H. 213, Gotha 1932., 187 S.
9. H. Lautensach, Madeira. Erdkunde 3, 1949, S. 212 bis 229.

10. A. Peter: Das Klima von West- und Südwestspanien auf Grund der Wetterbeobachtungen 1906-1925. Diss. Stuttgart 1955.

11. H. Neumann: Das Klima des immertrockenen Südostens von Spanien auf Grund der Wetterbeobachtungen 1906-1925. Diss. Greifswald 1940.

12. P. Kunow: Das Klima der Landschaft Valencia und der Balearen auf Grund der spanischen Wetterbeobachtungen 1908-1927 und anderer Quellen. Diss. Stuttgart 1950.

13. B. Haurwitz and J. M. Austin: Climatology. New York-London 1944. 410 S.

14. R. Bögel: Untersuchungen zum Jahresgang des mittleren geographischen Höhengradienten der Lufttemperatur in den verschiedenen Klimagebieten der Erde. Ber. des Deutschen Wetterdienstes Bd. 4, Nr. 26, Bad Kissingen 1956. 42 S. Tabellenanhang von 32 S.

15. H. Amorim Ferreira: O Clima de Portugal IV. Valores mensais e anuais dos elementos climáticos no período 1901-1930. Lisboa 1945. 180 S.

16. H. v. Ficker: Die Passatinversion. Veröff. Meteorol. Inst. Univ. Berlin. I, 4. Berlin 1936, 33 S.

17. K. Schneider-Carius: Die Grundsicht der Troposphäre. Leipzig 1953. 168 S.

18. J. M. Angervo: Eine neue Klimakarte der Erde nach der Köppenschen Klassifikation. Mitt. Meteorol. Zentralanstalt Helsinki 23, 1944, S. 1-15.

19. P. Jagannathan: Regression of Climate Elements on Latitude, Longitude and Elevation in India. Pt. I: Mean Temperature. Scient. Notes. Dehli 1946, No. 121.

20. H. Lautensach: Der Geographische Formenwandel. Studien zur Landschaftssystematik. Colloquium Geographicum Bd. 3, Bonn 1952, 191 S.

21. H. Lautensach: Die Isanomalienkarte der Jahreschwankung der Lufttemperatur. Pet. Mitt. 1952, S. 145 bis 155, 1953, S. 274f.

DISPERSED SETTLEMENT IN SOUTHERN ITALY

Robert E. Dickinson

With 7 fig. and 16 phot.

Streusiedlungen in Süditalien

Zusammenfassung: In Einzelhöfen (case sparse) wohnen rund ein Fünftel der Gesamt- und ein Drittel der Landbevölkerung des südlichen Italien. Die Siedlungstypen sind: das geschlossene Dorf; kleinere Zentren und Weiler (casali, frazioni); masserie — alte Wirtschaftshöfe des Großgrundbesitzes, gewöhnlich über 50 ha; podere — mehr oder weniger selbständige Familienbetriebe mit je nach dem Wirtschaftstyp schwankender Größe (unter 1 ha bei Citrus-Anbau, bis ca. 15 ha bei Weizen-Brache-Anbau); die Hütte im Weinberg, Ölbaumhain und auf der Weide als Unterschlupf oder für sommerliche Benutzung bestimmt. Diese Siedlungseinheiten wurden von Blättern im Maßstab 1 : 25 000 und 1 : 50 000 auf solche im Maßstab 1 : 100 000 umgezeichnet und die folgenden Zusammenhänge erkannt (mit wesentlicher Abänderung der Karte von Biasutti) (Fig. 3).

Konzentrationstypen mit sehr geringer Streuung: — 1) große Zentren und große Masserien; 2) große Zentren, kleine Masserien, einige verstreute temporär benutzte Gebäude; 3) große Zentren mit mittelgroßen Masserien und kleinen Höfen. Streusiedlung, vielfach mittelalterlichen Ursprungs, tritt in 4 bis 6 auf; 4) im ganzen zentralen Apennin umgeben Weiler und Einzelhöfe die Dorfkerne; es ist

ein Gebiet kleiner Höfe und einiger vereinzelter Masserien (latifondo contadino); 5) an den Küsten und auf den Bergen des Westens der Halbinsel hat sich eine intensivere Wirtschaftsweise getragen von Kleinstbetrieben mit Wein, Ölbäumen, Obst, Weizen und Gräsern, häufig mit Bewässerung und Terrassierung entwickelt und hat Höfe und Weiler um die zentralen Dörfer verstreut; 6) über 60% der Landbevölkerung lebt in Einzelhöfen, das sind geschlossene Stellen mit mäßig intensivem und verschiedenartigem Anbau und Viehzucht — Liri-Tal, innere, niedere Teile des Apennin (Avellino, Benevento), Crati-Tal (Cosenza) und das Gebiet der „trulli“, NE von Tarent; 7) Einzelhöfe der jungen Kolonisation und Mischbetriebe des Agro Pontino; 8) Piano Campano mit großen und überbevölkerten Zentren, aber mit verstreuten Bauernhöfen auf den intensiv kultivierten Flächen. (Unbewohntes Gebiet wurde weiß gelassen).

Die Fig. 4-7 zeigen 4 typische Gebiete: N. Lucania, das Gebiet der trulli, C. Calabria und Tavoliere. Die Streulage geht teilweise auf die Zeit vor 1800 zurück, besonders bei den Masserien. Jedoch hat eine ständige Ausbreitung der bäuerlichen Betriebe seit der Aufgabe des Feudal-systems im Jahre 1806 und seit der Konfiszierung des Waldlandes der Kirche in den 1860er Jahren stattgefunden. Der extensiv bewirtschaftete (Weizen-Brache) Latifundienbesitz wurde teilweise durch Bauern- und Guts-

betriebe mit intensiverer Wirtschaftsweise ersetzt (Wein, Ölbaum, Obst, fall-sown Gräser mit Viehzucht). Das Landvolk konnte Land durch Kauf, Pacht (Geld- und Teilpacht) oder in geringem Ausmaß durch Aufteilung des Gemeindelandes erwerben. Infolge der Kompliziertheit und Unsicherheit der Besitzformen und der Armut und Unwissenheit der Bevölkerung ging die Entwicklung sehr langsam vonstatten. Die laufenden Programme suchen den Prozeß zu beschleunigen durch Einrichtung von Bauernstellen auf konfiszierten Teilen des extensiv bewirtschafteten Großgrundbesitzes und durch materielle Hilfe und fachliche Unterweisung die Landwirtschaft zu intensivieren (Wein, Öl bäume, Obst, crash crops, und im besonderen Anbau von fall-sown Gräsern und Viehzucht). Die wichtigsten davon betroffenen Gebiete sind Tavoliere, Fossa Premurgiana, Metaponto, Sila und ihr ionisches Küstenland.

The compact village, centrally situated in the cultivated land of its commune and housing the great majority of the agricultural workers and their families, is a principal settlement form in Southern Italy as in other Mediterranean lands. A considerable and an increasing proportion of the population, however, amounting to nearly a fifth of the total population and about one-third of the agricultural population, lives in various forms of dispersed settlements in the open countryside. The purpose of this paper is to examine the character and distribution of these dispersed settlements in this area. A map of this kind was prepared over twenty years ago by Professor *Renato Biasutti*,¹⁾ and, though essential as a springboard in any such study, it has been found inadequate in terms of our objective. Hence this paper.²⁾

Our concern is with the five compartments of the Abruzzi-Molise, Apulia, Campania, Lucania (Basilicata), and Calabria. This is the mainland section of the old political entity of the kingdom of Naples. Its northern boundary against the old papal states remains one of the most striking in the geography of Italy. In central Italy the large land owners, in the 17th century and after, divided their properties into compact holdings with farmsteads and equipment, and let them on permanent share-tenancies of the classical *mezzadria* type. Thus, the dispersed farmstead or "podere" is today dominant throughout the area. On the other hand, in the kingdom of Naples, the feudal system of landownership and tenure remained

paramount until the opening of the 19th century when feudal rights were abolished and land passed into private hands³⁾. The population in most areas was predominantly in clustered villages. These villages were located in the hills between the plains, devoted to pasture and infested with malaria, and the higher lands, above about 600 meters in successive zones of chestnut, oak, beech, and pine woods. Even so, dispersed farms and hamlets of medieval origin occurred in some areas. Substantial changes of occupancy have taken place since this time. The present distribution of settlement, especially of dispersed family-farmsteads, reflects the slow emancipation from the restrictive conditions of the feudal society.

I. Distributions from the Census

The Census of 1931 shows that out of a total population in the South of 9.6 million people, 1,676,000 or 17.4%, lived in the open countryside, outside "centers" in which one or more centralized services were located⁴⁾. These census data refer to case sparse i. e., isolated habitations, and to centri, i. e., clusters of habitations of any kind, in which there are one or more centralized services (e. g. railroad station, school, church, etc.). However, in any agricultural area a certain proportion of the total population is engaged in services to support the agriculturalists, and such service occupations must of necessity be located in central places. In the purely agricultural areas of southern Italy these activities are a quarter to one-third of the total. On the basis of this corrected ratio of dispersed population to the agricultural population, one-third of the latter is dispersed. The regional variations by minor geographical regions are shown on Fig. 1⁵⁾. This map shows the predominance of the dispersed habitation in central Italy with an extension into the eastern section of the Abruzzi. In the South, relatively high degrees of dispersion prevail in the western half of the peninsula in lowland and highland alike, and there are a few islands in the eastern half of the peninsula, in which, however, the compact village is generally dominant.

³⁾ See Rapporto della Commissione Economica, I. Agricoltura, Ministero per la Costituente, Roma, 1947; 548 pages.

⁴⁾ Catasto Agrario, 1929, Parte I, Relazione Generale, 1939, The data are given in this agricultural census by communes and groups of communes referred to as agrarian zones. There is a separate volume for each province. Since the completion of this work, the data of the 1951 census have been published. These do not modify the validity of the substance and conclusions of this article. In fact, our purpose is served more appropriately by the 1931 census.

⁵⁾ These geographical units are those devised by *U. Giusti*, in *Caratteristiche Ambientali Italiane*; *Agrarie-Sociali-Demografiche 1875-1942*, (Ist. Naz. di Econ. Agraria) Rome, 1943.

¹⁾ See *Renato Biasutti*, *Ricerche sui tipi insediamenti rurali in Italia*, Memorie della Reale Societa Geografica Italiana, Vol. XVII, 1932, pp. 5-25 with maps of 14 type areas. This was *Biasutti's* first statement. It has been repeated in various places and reproduced in a modified form in the *Dainelli Atlas*. See also the exhaustive new work on economic geography: *F. Milone: L'Italia nella economia delle regioni*, 1955.

²⁾ Reference should be made by the reader to *Robert E. Dickinson*, *The Population Problem of Southern Italy*, Syracuse, N. Y., 1955, 116 pages and 23 maps; and *L. Unger*, "Rural Settlement in the Campania", *Geographical Review*, October, 1953, pp. 506-524.

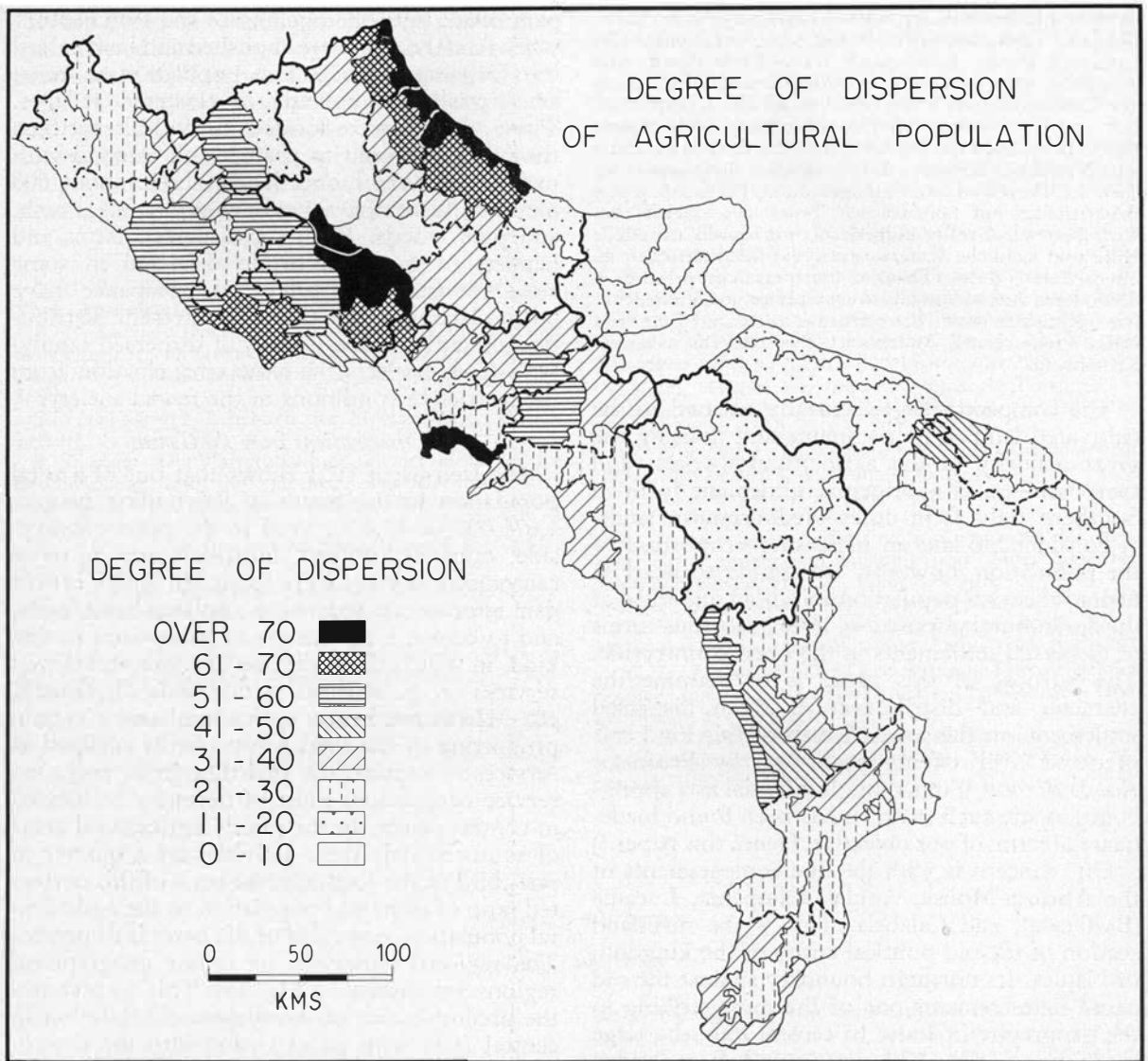


Fig. 1: These areas are groups of "zone agrarie". The data are taken from U. Giusti. They show the people living in "case sparse" as a percentage of the people dependent on agriculture.

The forms of agricultural settlements are dependent upon the kinds of agricultural economy and, above all, on the size and productivity of the operating units. Fig. 2 shows the distribution of the main kinds of agricultural economy. These we have characterized elsewhere⁶⁾. The "latifondo capitalistico" and "latifondo contadino" — underdeveloped lands with a minimum of investment in economy and equipment — still cover a large part of the coastal plains and the hilly interior, although during the last hundred years encroachments have been made upon

them by the expansion of more intensive peasant economies, depending mainly on vines, fruits, and grasses.

Holdings in these regions may be classified on the basis of the labor they employ⁷⁾. Mezzadria holdings, employing almost exclusively family labor, cover 60 per cent of central Italy and are associated with the dispersed farmstead (podere). In the South, this type is localized in the north-eastern part of the Abruzzi and is sporadically distributed in northern Campania, the south-eastern part of Bari, and northern Calabria. It is

⁶⁾ Dickinson, op. cit. 1955, See also G. Merlini, *Le Regioni Agrarie in Italia*, Bologna, 1948.

⁷⁾ G. Medici, *I Tipi d'Impresa nell'Agricoltura Italiana*, Rome, 1951.

usually associated with relatively advanced forms of mixed husbandry. But only 6 per cent of the productive area is under this kind of holding. Family holdings (tenants and owners), that depend almost exclusively on family labor, cover about one-half of the South. They characterize the three regions of peasant economies shown on Fig. 2. The overwhelming majority of such holdings have small and scattered strips and are held by insecure tenures and by rentals paid in

cash and kind. Very few (probably about one-fifth of the number and covering a smaller proportion of the area) are adequate to maintain a family either in continuous work or to provide a living that is acceptable to Italian standards⁸).

The commercial holdings, employing exclusively hired labor, cover about 27 per cent of the

⁸) For a discussion of this minimum standard, see Dickinson, *op. cit.* 1955, p. 68.

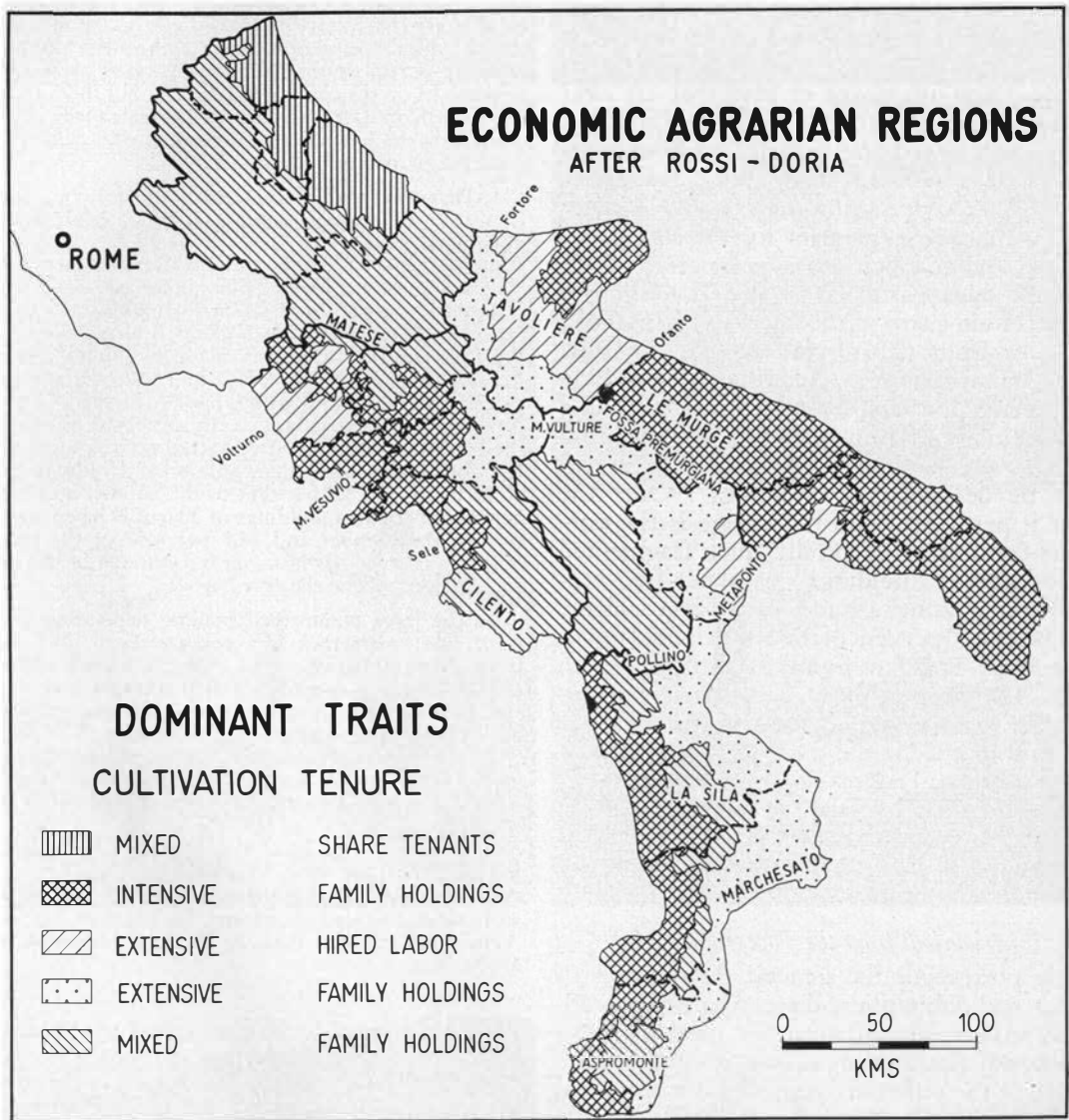


Fig. 2: These regions are based on groups of communes (called by the Census "zone agrarie"). They are determined from: a) dominant method of cultivation ("mixed" in the Italian sense of crops inter-mixed on the same land — "coltura promiscua"; b) dominant tenures of holdings. Black lines are boundaries of major Compartments; dashed lines are boundaries of Provinces. Note in particular the regions with extensive cultivation (minimum input), that occurs both on large holdings with hired labor ("latifondo capitalistico") and on tiny holdings with family labor and insecure tenures ("latifondo contadino").

productive area. They are mainly wheat-pastoral holdings and are highly localized in the districts of the Tavoliere, Fossa Premurgiana, Metaponto, and eastern Calabria. Smaller holdings of this kind, with more intensive economies, are found sporadically throughout Apulia and southern Calabria and in the lowlands of the Garigliano, Volturno, and Sele rivers in Campania. The so-called family-commercial holdings, that employ hired labor in excess of family labor, cover only 6.5 per cent of the total area. Commercial holdings are conspicuously absent in most of Campania, western Lucania, and western and northern Calabria.

Finally, there are pieces of land that are held from their proprietors on a variety of tenures. These include the share-tenancies without association with a permanent holding (non-appoderate) that involve simply the rental of a piece of land with some agreement for the sharing of the crops; and share-croppers (compartecipanti), who work on a particular crop and receive in return a certain share of the harvest, be it wheat, tobacco, or fruits. These contracts are all brief, insecure and archaic. The cultivator is constantly on the search for rags and tatters of land as a means of eking out a miserable livelihood. In no sense can such changing assortments of land and tenures be described as "holdings". Only the peasant is permanent and the village is the only place he can live in. Typically, such fragmented lands, usually in "holdings" of under five hectares, form a zone around each large village center. About 10 per cent of the South is held under such tenures. They are found in all the agrarian regions. The proportion is particularly high in Apulia (18.4 per cent), where share contracts are commonly adopted in the cultivation of vines, olives, and tobacco. Tenures covering one or several years are frequent in Calabria and especially in Sicily for the cultivation of sown grains (terra-geria). Many of these contracts are incorrectly described as "mezzadria".

II. Distributions from the Topographic Map

While portraying the general distribution of holdings and habitations, these data do not adequately answer our question. We need to determine the real distribution, on the ground and on the map, of the different forms of habitation, and in particular of dispersed habitations.

It is first necessary to define the main kinds of habitation. These are the commune village, other centers, "masserie," family farmsteads, and temporary buildings.

1. The compact village, frequently the only settlement in the commune, is the dominant type throughout the South. (Phot. 1 and 2). The non-autonomous cultivators

and landless laborers in these communes have no option but to live in the village. Though the need for protection from brigands and from the scourge of malaria, and other factors, account for the origin of this village and its inaccessible hilltop site, it is the persistence of the medieval system of holding and tenure that accounts for the growth of this village agglomeration as the center of its commune.

2. Other "centers" (casali), comparable to, but usually smaller than, the commune village, frequently occur within the same commune. The number of these centers reaches an average of five per commune in certain small geographic regions and generally these are the same as those areas show in Fig. 1 in which there is a high proportion of dispersed population. These centers vary greatly in their functions. Many have grown away from the isolated hilltop villages in recent times alongside a railroad or highway, a feature that is best illustrated by the marine settlements on the coast of Calabria⁹). But there are many, as in northern Lucania, that are old established hamlets, containing the habitations of peasants who cultivate their scattered plots around (phot. 3).

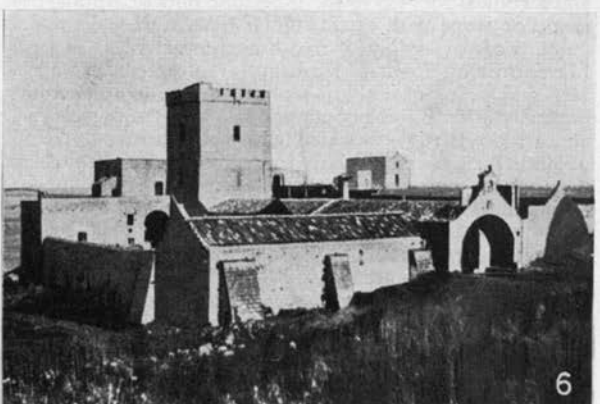
3. Dispersed habitations (case isolate) are normally farmsteads on compact holdings (podere) (phot. 4). A holding must support the peasant in work and livelihood before he will build a home and live in it permanently. The minimum size of such a holding varies with the kind of economy — 0.5 ha for a citrus holding, 0.5 to 1.5 ha for an irrigated vegetable holding, 1.5 to 2.5 ha for the three tier cultivation of the "Campania Felix", 4 to 5 ha for specialized vine cultivation, and 10 to 15 ha for wheat cultivation alternating with fallow¹⁰). In fact, 84 per cent of all holdings ("aziende" as distinct from properties) in the South have less than five hectares, though these cover only one quarter of the whole area. Holdings of 5 to 20 ha make up 13.3 per cent of the number and cover 21 per cent of the area, holdings of 20 to 100 ha cover 2.1 per cent of the number and 14.8 per cent of the area, and holdings of over 100 ha cover 0.6 per cent of the number and 39.7 per cent of the area.

4. The large commercial holding depending on hired labor, the "masseria", is a compact farm unit, ranging from about 50 ha. up. (phot. 5, 6, 7). Farm buildings include the living quarters of the operator and workers, and buildings for livestock, grain, and implements. The form ranges from a single-unit habitation to a substantial cluster of separate buildings, with court yard, towers, and gate of entry. It is of ancient origin and wide distribution. This, as a holding, is a dispersed unit of settlement, though

⁹) G. Kish, "The Marine of Calabria", Geographical Review, 1953, pp. 495—505.

¹⁰) These are based on the estimates of the land reform authorities. See also A. Serpieri, *La Struttura Sociale dell' Agricoltura Italiana*, 1948, p. 78. Also Dickinson, op. cit. 1955.

Phot. 1: Palermi in the olive zone S of Catanzaro. — Phot. 2: Village in the chestnut zone of the Sila Piccola, N of Catanzaro. — Phot. 3: A hamlet in the commune of Avigliano, Potenza. Alt. 900 m. — Phot. 4: Farmsteads in limestone Apennines, nr. Morano. Alt. 1.000 m. — Phot. 5: A masseria in the Matera lowland. (from Franciosa). — Phot. 6: A fortified masseria in the Matera lowland. (from Franciosa). — Phot. 7: Large masseria in Lucanian highland N of Potenza. Alt. 900 m. — Phot. 8: Shelter of a peasant who took possession on a large property in 1947 (Nardo, Lecce).



its population may include large numbers of workers and their families and a varying number of unattached day laborers. Such holdings are traditionally associated with the rearing of livestock and the growing of wheat. They constitute the typical latifundian economy. The traditional form depended on the pasturing of sheep in winter. This involved the use of a "posta di pecore", as in the Tavoliere, for the quarters of the shepherds, milkers, and cheese makers, as well as extensive folds for the sheep. Such a group of buildings, clearly marked on the topographic map, is variously described as "posta di pecore", "ovile", "mandria", "scarizzo" or "iazzo". Wheat cultivation, alternated with sheep pasture on the fallow, has its nucleus in the "masserie di campo". In the western coastal plains we also find the "masseria" with stalls in the midst of remote pastures for the milking of buffalo and the making of cheese (mozzarella). Some operators have improved their economies in recent decades, as in the Sele valley, where the land is irrigated for the production of grain and grasses for livestock, rather than for tree cultivation.

5. Buildings that are temporarily occupied ("capanne") are one of the most characteristic features of the Mediterranean habitat. Structures that are sufficiently important to be mapped by the surveyor on the standard topographic map, and that are, in fact, usually stone-built one-roomed buildings, pepper large areas of the countryside. In addition (not mapped by the surveyor) there are many timber-built shacks and lightly constructed shelters of straw etc. ("pagliare"). All such structures have various local names but may be described collectively as "capanne". They are generally only temporarily occupied for shelter by either man or beast, for the storage of tools and equipment or for occupation during the cultivation of adjacent land. They are built of slabs of stone with a circular base and a conical roof (as in the limestone huts of Apulia); of wood or stone with a rectangular base, four walls and a gable roof; or simply of tree branches arranged in tent-like form with a cover of foliage — an extremely temporary and even moveable shepherd hut. Such structures normally lie within the commune in which the owner lives and are obviously associated with permanent ownership of land. They are particularly frequent in vineyards, where the vine needs prolonged periods of work throughout the spring, summer, and the fall. They are rare in the large holdings of extensive latifundian cultivation, as they are in areas of minutely subdivided land held on short tenures. But there are conspicuous postwar examples of peasants squatting on land in the midst of great stretches of bare pasture and arable land, where they have quarried the stone on the spot and built their one-roomed homes of limestone slabs (e. g., between Taranto and Brindisi and on the Nardo Plain on the west coast of the Lecce peninsula) (phot. 8). Temporary shepherds' huts also occur in the high pastures. It is a remarkable fact that in this land of dire poverty the peasant cultivator so often divides his time between two squalid domiciles, one in the village and another in his fields.

These are the units of settlement. They have been mapped by classifying and tracing all the buildings shown on the topographic map on a scale of 1 : 100,000 with checks from every 1 : 25,000 and 1 : 50,000 sheet. All these maps, with the exception of a few 1 : 25,000 sheets, date from surveys in the 1870's with revisions in the 1900's and 1910's. The traces thus portray the pattern of settlement before the changes of recent decades.

The generalized patterns on Fig. 3 show the distribution of the main types of rural settlement. Four sections of the 1 : 100,000 traces are reproduced on Figs. 4 to 7. The categories are in general the same as *Biasutti's*. The areas are substantially different, and we have also added the uninhabited areas (i. e., those without buildings of any kind).

Types 1 to 3 are nucleated forms in which each commune contains a large central village with very little dispersed settlement. Type 1 has large centers and large "masserie" and has under 10 per cent of its agricultural population in dispersed farmsteads. Type 2 has large centers and no "masserie," but a sprinkling of buildings, most of which are for temporary use (10—20 per cent dispersed). Type 3 again has large central villages, but there is a continuous cover of medium-sized "masserie" and smaller farmsteads (20—30 per cent of the total population is dispersed).

A large proportion of dispersed settlement, much of it of medieval origin, is found in each commune in Types 4, 5, and 6. Type 4 is found throughout the central Apennines, northwards from around Potenza. There are several hamlets and many dispersed farms within each commune, in addition to the central village (30 to 40 per cent dispersed). It is predominantly a zone of small farms of 10 to 20 ha or of large properties minutely divided among peasant-tenants (latifondo contadino). The economy is mainly one of wheat, fallow, and rough pasture, with a dearth of vines, olives, or any other tree crops. Type 5 occurs over most of the coasts and hills of the western side of the peninsula. It has several centers within each commune and a high proportion of dispersed farmsteads on tiny, intensively cultivated holdings (partly irrigated), that yield vines, olives, fruits, and cattle (30 to 60 per cent dispersed). Type 6 is singled out by *Biasutti* as being completely dispersed with "case isolate sui fondi". Over 60 and often over 75 per cent of the agricultural population is domiciled in dispersed family-farmsteads. This occurs in the Liri valley; the interior lowlands within the Apennines up to a height of some 600 meters in eastern Campania (around Avellino and Benevento); in the Crati valley of northern Calabria (around Cosenza); and, finally, in the highly distinctive area of the "trulli" buildings, in central Apulia. All these areas are in fact associated with, and differ only in degree of dispersion from, the areas of Type 5. They are associated with moderately intensive cultivation of vines, olives, fruits, wheat, and fall-sown grasses, on small family-sized holdings¹¹).

¹¹) See *L. Unger*, op. cit., in which the agrarian zones and degree of dispersion of settlement are mapped for Campania.

Types 7 and 8, as designated by *Biasutti* and retained here, occur in two particular areas, the Agro Pontino (including the Agro Romano) and the Piano Campano. The Agro Pontino is a plain of recent land reclamation and colonization (*bonifica integrale*). It has a cereal-livestock economy; vines, olives and fruits are rare indeed. Holdings have an overall average size of 15 ha. There is a planned dispersion of farmsteads, generally with *mezzadria* tenures, along a rectangular network of roads. Nucleated settlements (*borghi*) are mainly seats of centralized services. Over one-half of the total population, and virtu-

ally all of the agricultural population, lives on dispersed farmsteads. A similar process of colonization has brought to the Sele valley essentially the same kind of distribution. Other areas of underdeveloped latifundian economy (Type 1), such as the Volturmo valley, the Tavoliere and Metaponto, that are currently undergoing improvement and resettlement, will eventually have a similar kind of settlement distribution, characterized by the dispersed farmstead in place of a few "maserie" in the midst of great expanses of ill-drained malarious rough pasture.

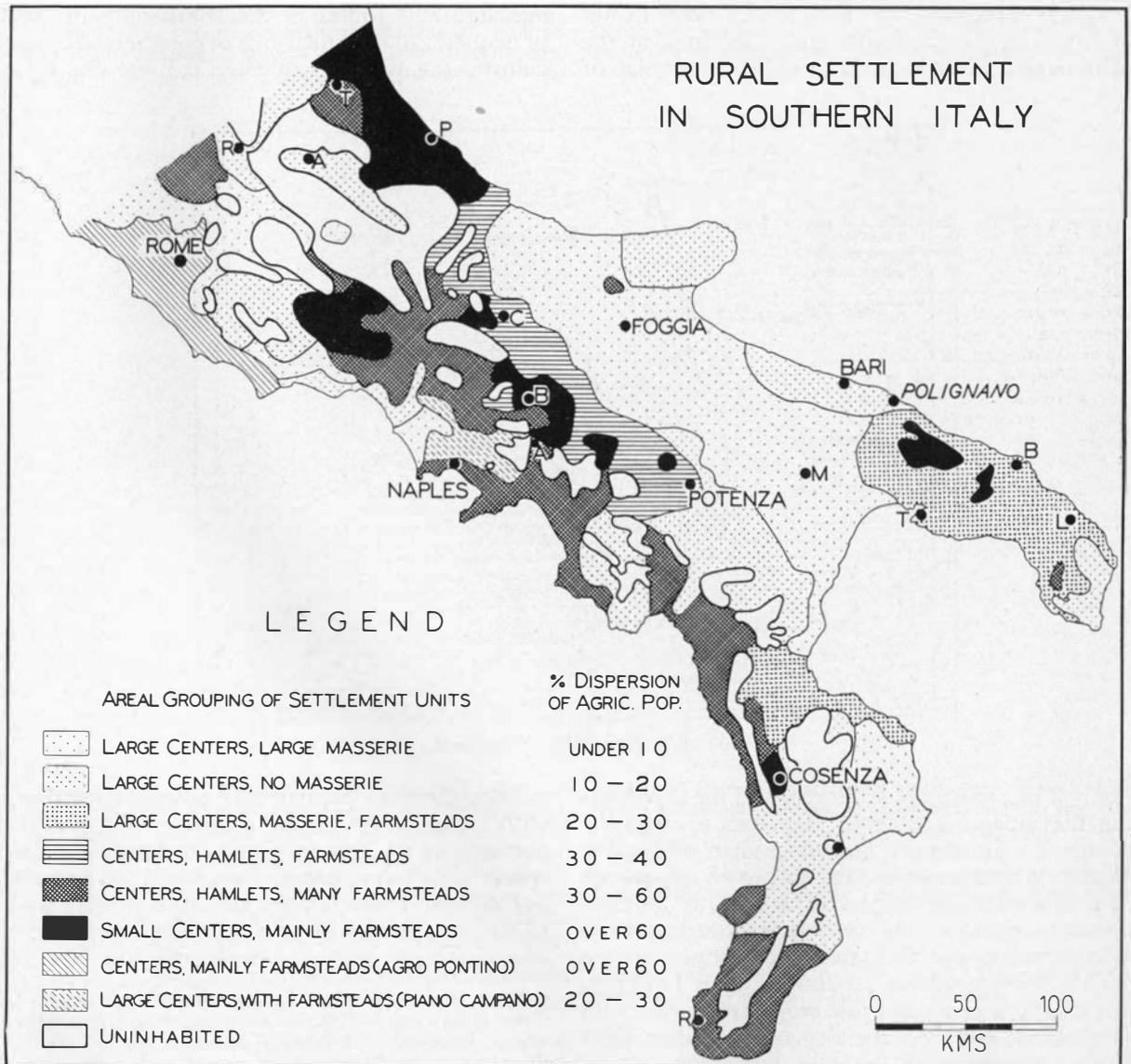


Fig. 3: Eight types of settlement pattern are shown. They are discussed in the text (from top to bottom of the legend) as Types 1 to 8. The four Type Areas can be located from the town names of Potenza (Fig. 4), Polignano (Fig. 5), Cosenza (Fig. 6), and Foggia (Fig. 7).

Type 8 occurs in the Campanian Plain. Some 20 to 30 per cent of the agricultural population (10 per cent of the total population) is dispersed, though this obscures big variations from one commune to another. Nucleated settlements, housing numerous cultivators and laborers, are large and spaced at frequent intervals of some 2 kms¹²). The low percentage of dispersion, however, does not signify the rarity of dispersed farmsteads. On the contrary, they are more frequent than in the Agro Pontino. There are 16 dispersed farms per sq. km. in the Campanian Plain as compared with 9 per sq. km. in the Agro Pontino. This is due to the differences in density of agricultural occupation, and the predominance of big villages in the Campania area. Holdings in the Campanian Plain have an overall average size of

through the year demands that the cultivator live on the spot¹³). This kind of horticultural occupation is predominant in the Agro Nocerino, the plain that lies immediately south of Vesuvius and stretches about 15 kms. inland. This land, irrigated from well, spring and canal, is continuously under vegetable crops. Only about one-fifth of the total population is dispersed. Again, this is because the nucleated settlements are so large and frequent. In fact, there are about 18 dispersed farmsteads per sq. km. (this has nearly doubled since 1881) or 90 persons per sq. km. Nearer the village they are spaced only some 100 m apart¹⁴). A still further example of this highly intensive agriculture is found in the southern periphery of Naples. On this small area of commercial horticulture, the holdings average 0.3 ha. On each

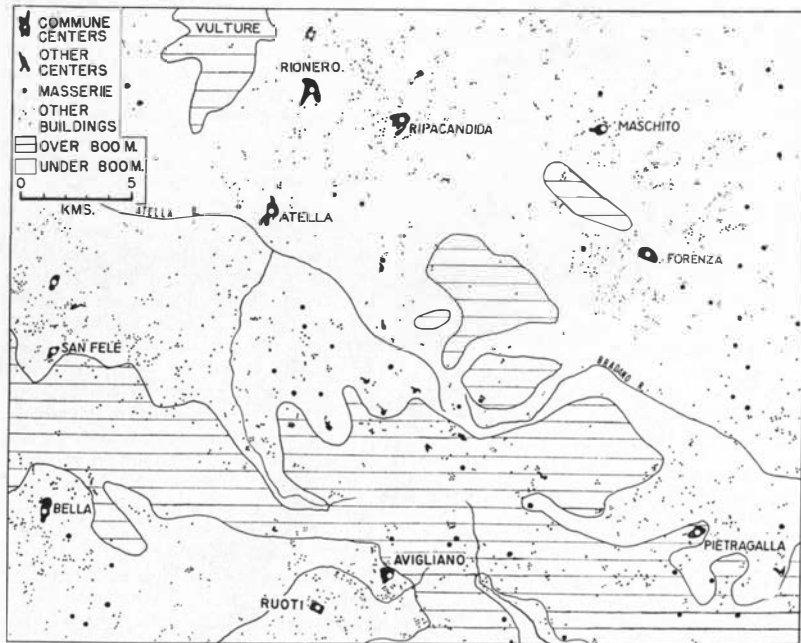


Fig. 4: is NW of Potenza.

only 2 ha., strips are scattered, and the dwellings in the villages are never very remote from the fields. In the Piano Campano, north of Naples, hemp, wheat, potatoes, and fall-sown grasses are the characteristic crops that are grown in continuous rotations, while vines are trained from the poplar trees, and fruit trees are scattered in the fields. Farmsteads are found on their holdings, especially where vegetable crops are grown with irrigation, for then the day to day labor right

¹²) The unit of these settlements is the "cortile", a building centered on a courtyard, that may have originally housed one family, but is now occupied by as many as twelve families.

holding there is a permanently occupied domicile, with 1 to 3 rooms, giving a density of about 500 persons per sq. km. in dispersed farms or "case sparse" (excluding centers), or, say, 1250 persons per sq. ml. These houses are overcrowded and unsanitary. Family labor is fully employed to eke out what is, in general, a deplorably low level of

¹³) F. Platzer, *Monografia Economico — Agraria di Terre di Lavoro*; Ist. Naz. di Econ. Agraria, Roma, 1938; and S. Maranca, *Monografie di Famiglie Agricole, VIII: Contadini della Pianura Campana*, Ist. Naz. di Econ. Agraria, Roma, 1935.

¹⁴) See S. Petrucci, *La Piccola Impresa Ortiva Irrigua nell' Agro Castellammare di Stabia*, Ist. Naz. di Econ. Agraria, Roma, 1935.

living even on Italian standards. This is a form of "urban" agriculture that here reaches just about the greatest density and intensity of agricultural occupance in the western world¹⁵.

III Type Areas

1. Northern Lucania (Fig. 4)¹⁶

This is a rolling highland (1,200—1,400 m) with broad valleys (6—700 m) opening eastwards to lower land. Woods of oak and beech prevail above 800 m with much rough pasture, and islands of arable cultivation (wheat-fallow-beans) around the villages. Only on the border of the volcanic Vulture Massif in the NW do vine and olive groves occur. There are temporary shelters in the vineyards and olive groves (some of which are occupied through the summer), and "capanne" in the "montagna" for shepherds with transhumant sheep. Old family farmsteads (2—4 rooms, 2 storeys, and outside staircase) also occur in the "montagna", with a self-subsistence economy

teutic tenures, communal practices (e. g., threshing) and storage facilities, and kinship groupings, are associated with these hamlets. Farmsteads (podere), not shown on the map, have been established in recent years, with "mezzadria" tenures, and genuine mixed farming (grain, grasses, pedigree stock, fruit trees, and tobacco) on holdings of 15—20 ha. A group of 50 is found in the Vulture Massif at Monticchio with a large central "fattoria" (phot. 9). Smaller proprietors (as well as individual peasants) have bought land and established "podere" with "mezzadria" tenures in the communes of Ruoti and Avigliano (phot. 10). Dispersed population ranges from 25 to 75 per cent of the total in the communes in the center of this area.

2. Trulli Area (Fig. 5)¹⁷.

This is part of the very dry and rocky limestone plateau of the Murge, that one hundred years ago was held in large pastoral holdings. It has widely spaced villages, but a profusion of dispersed farmsteads. Large "masserie", some 2 kms apart, predominate in the W of the area, but,

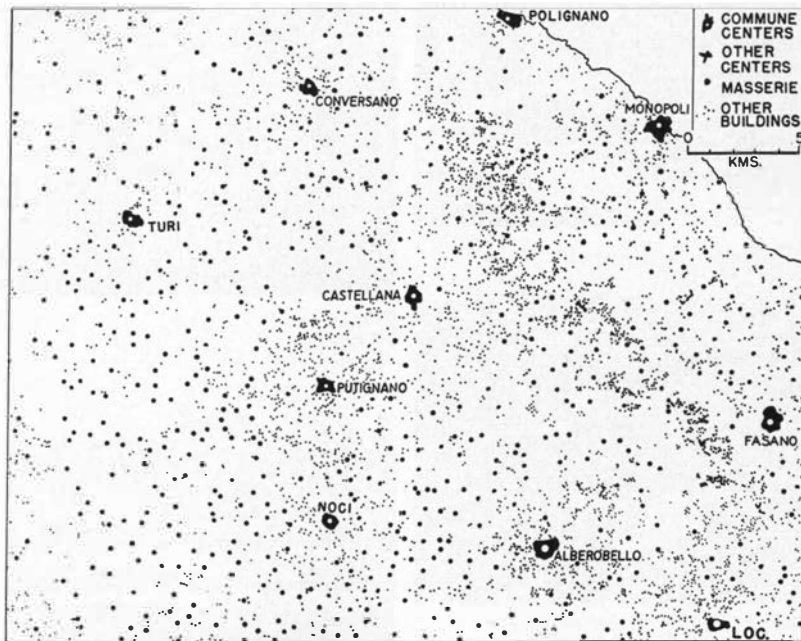


Fig. 5: SW of Polignano.

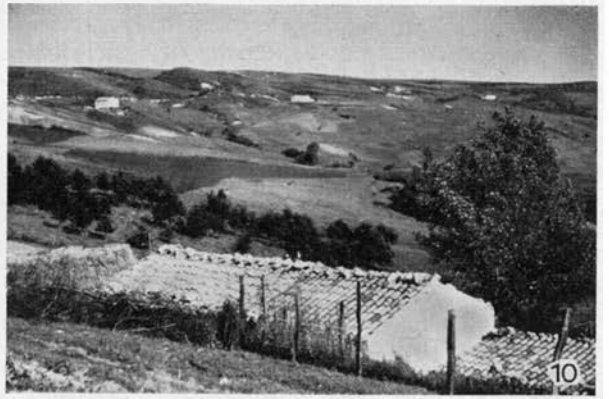
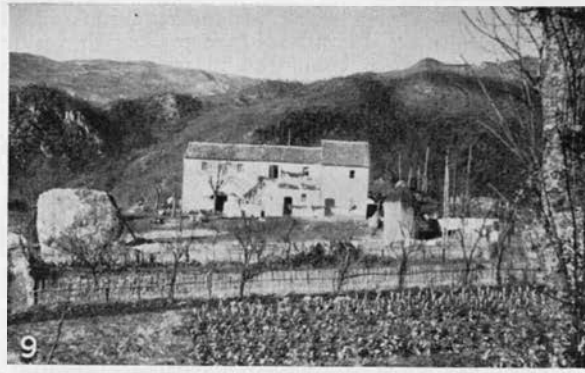
based on crops and livestock. Large "masserie" with over 50 ha. occur sporadically throughout the highland, but form a continuous zone in the lower land to the N and E, with a wheat-fallow-livestock economy (phot. 5 and 6). The hamlet (casale) is especially characteristic (phot. 3). Several occur within one commune and contain up to 10 tiny dwellings (1—2 rooms) in the midst of scattered strips of bare arable land. Permanent emphy-

¹⁵ See L. Franciosa, "Gli Orti dei Paduali e della Volla presso Napoli", *Rivista Geografica Italiana*, 1955, pp. 189—211.

¹⁶ See F. Acquaviva, *Monografia Economico-Agraria della Montagna di Avigliano*, Ist. Naz. di Econ. Ag., 1943. L. Franciosa, *La Casa Rurale nella Lucania*, Consiglio Nazionale delle Ricerche, Comitato Nazionale per la Geografia, Firenze, 1942. G. Viggiani, *I Problemi Agrari della Provincia di Potenza*, Potenza, 1946.

in the E, farmsteads are small and numerous with many other buildings scattered in vineyards, olive groves, and fields (phot. 13). Typical is the trullo or beehive house, built of limestone, with a conical roof for each room (phot. 14). This settlement took place by the transformation of the large "masserie" through the permanent lease

¹⁷ See V. Ricchioni, "L'Economia dell'agricoltura pugliese", *Annali della Facoltà di Agraria, Università di Bari*, Vol. I, 1939, pp. 3—316. V. Ricchioni, "Un' oasi di popolazione sparsa in pieno latifondo", *Rivista di Economia Agraria*, pp. 151—179. *Studi Storici di Economia dell'Agricoltura Meridionale*, Firenze, 1952, especially Ch. IV, *Delle quotizzazioni demaniali nel Mezzogiorno*. C. Colamonico, "La Quarta Escursione Geografica Interuniversitaria in Puglia," *Boll. d. R. Società Geografica Italiana*, 1929, pp. 457—484. C. Colamonico, *La Geografia della Puglia*; *Profilo Monografico Regionale*, Bari, 1926, p. 79.



of land on emphyteutic tenures to the peasantry. This reached a peak during the period of high wine prices in the 70s and 80s, but received a grievous set back when France closed its market to Italian wines in 1888 and when the phylloxera epidemic attacked the vines of Apulia in the 1900s. With the assurance of secure tenure, the peasants cleared their land, built stone walls and houses, and cultivated crops adjusted to the small winter rainfall (wheat, vines, olives, almonds). They suffered from the

abrupt scarp that overlooks the olive-clad coastal plain. Around Fasano, many houses are occupied only in the summer and others have been built by the wealthier coastal villagers as residences, imitating the traditional style of the "trullo".

3. Central Calabria (Fig. 6)¹⁸.

Here are four N-S physical divisions. The Tyrrhenian coastland, backed by the limestone Apennines, is inten-

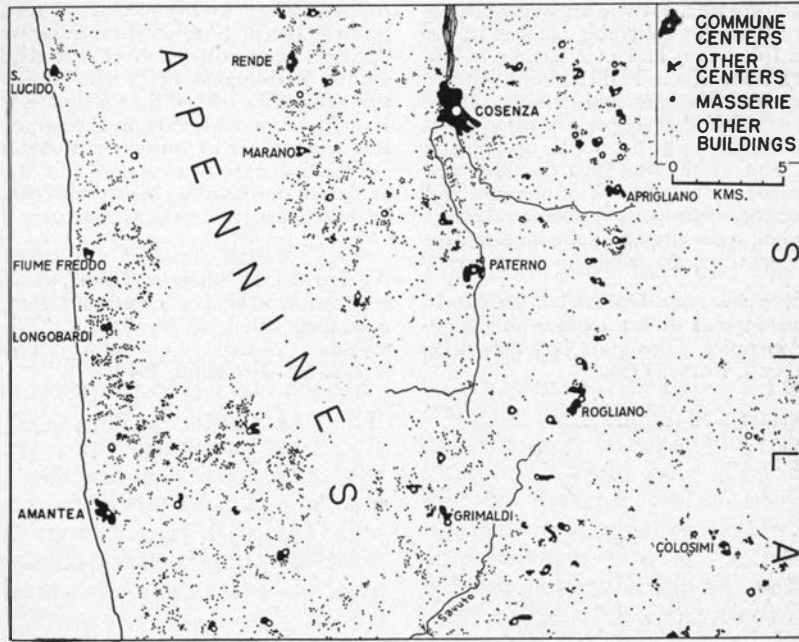


Fig. 6: is around and S of Cosenza.

lack of drinking water and even today only the villages are fed from the Apulian aqueduct. Many holdings were established by the distribution of communal lands in tiny quote of 1 ha or less, and though many peasants abandoned their plots, others consolidated their gains and remained on the land. Much of the "terreno carsico" of the commune of Noci (including several large "masserie") was divided in this way in 1890, 1899, and 1904, and today 500 families, owning some 3 to 8 ha. each, live in dispersed farms (a half of the agricultural population). Here, and in neighboring communes, the peasants have often turned to the cultivation of winter grasses, and raise a few Swiss Alpine cows and sell the milk. The area ends to the E in an

sively cultivated with irrigation of the flatter land and terracing of the hill-sides up to 300 m. Over half of the peasants live in dispersed farmsteads, and 13 per cent of the total population live in small hamlets with under 1,000 inhabitants. Self-subsistence holdings of 2–3 ha prevail, on which are cultivated olives, vines, vegetables and fruits, grain and grasses. A typical holding will carry 1–2 cows, 1–2 calves (for fattening), and a few pigs and sheep. The short valleys in the Apennines frequently have dispersed farmsteads with fields of olives, vine and grain (phot. 12). The Crati lowland, centered on Cosenza, has one half of its cultivators on dispersed farms and a fifth of the total population lives in small centers and hamlets. People fled into these wooded lands during the Saracen raids and established themselves in clearings. In 1787 this area was described as having "366 casale, lying around the city (Cosenza) like young shoots around a plant, that can be described neither as villages, nor as 'paese.' since they have only 3 to 6 houses"¹⁹). Today, many of these are compact and larger settlements, since population has increased greatly during the last 100 years. Below the level of the girdle of chestnut woods (700–900 m.) dispersed

Phot. 9: Podere at Monticchio, Vulture. 20 ha., 10 cows. Settlers from Marche. — Phot. 10: New farmsteads at Ruoti, N Lucania with mezzadria tenures. — Phot. 11: New farmsteads in Val d'Agri, W Lucania. Enclosed plain of recent reclamation. — Phot. 12: Farmsteads on Tyrrhenian slope of the Apennines N of Cetrara. — Phot. 13: Trulli landscape at Fasano, Apulia. — Phot. 14: Individual "trulli" farmsteads, near Alberobello, Apulia. — Phot. 15: A farmstead in deeply dissected horizontal strata on main road from Cosenza to the Sila. Alt. 350 m. — Phot. 16: A farmstead of the "Opera Nazionale dei Combattenti" (War Veterans Organization) in the Tavoliere. 20–30 ha., mixed farming. Note stalls and (disused) silo.

¹⁸) See H. Kanter, "Kalabrien", Hamburgische Universität, Abhandlungen aus dem Gebiet der Auslandskunde, Band 33, Reihe C. Naturwissenschaften, Band 10, Hamburg, 1930; and P. Schmidt, "Nordkalabrien: Eine sozial-geographische Studie," Veröff. des Instituts für Meereskunde an Univ. Berlin, Neue Folge, B. Historisch-Volkswirtschaftliche Reihe, Heft 12, Berlin, 1937.

¹⁹) Quoted by Schmidt, op. cit.

farms prevail, with 2—3 storeys, the first used for cattle stalls and storage. Fields of wheat, clover and lupins, scattered fruit trees, and groves of olives, characterize these mixed-farming units. Irrigation has spread to the Crati lowland north of Cosenza in recent years and many large estates have been subdivided into minute holdings of 3—4 ha (e. g., commune of Rende). The border of the Sila plateau has a series of large congested villages in inaccessible situations below the main chestnut zone (phot. 2). But though housing only a small share of the total population in each commune, there are many dispersed farmsteads — as islands on cultivable patches in the lower dissected zone (phot. 15) and in clearings in the steep slopes or valley sides in the higher chestnut zone (e. g. Savuto valley between Rogliano and Parenti). These communes have grown beyond their present capacity to support their people with land or work, and many peasants hire bits of land on the high Sila on short and insecure terms, on which they grew crops of potatoes and rye (now wheat) after the melting of the winter snows. This Sila area is now being developed by the land reform authorities and these peasants, according to their needs,

²⁰⁾ For a comparable area, see *O. Baldacci, La Serra: Monografia Antropogeografica di una regione calabrese, Memorie di Geog. Antropica, Consiglio Nazionale delle Ricerche, Vol. IX, Fasc I, Rome, 1954.*

have been allocated either tiny “quote” (that are being worked cooperatively) or compact and autonomous “podere”, with their farmsteads in groups of 3 to 6²⁰⁾.

4. Tavoliere (Fig. 7)²¹⁾.

This is a typical area of the latifundian economy about 50 years ago. The traditional pastoral economy on large estates continued through the 19th century and it was not until 1865 that the compulsory retention of the land in pasture was withdrawn, and the raising of wheat became supplementary to the use of winter pastures for transhumant sheep. Characteristic units were “masserie” and “poste”, as described above. Already, however, there was a considerable amount of vine and olive cultivation on tiny properties around the villages (e. g., Lucera, WNW of Foggia), as is evident from the name “Vigne”, that was frequently given to both districts and farmsteads.

Effective transformation of this traditional occupation, as shown on the map, began with the formation of a reclamation district by the landowners in 1924. The whole

²¹⁾ *A. Merendi, Bonifica e Trasformazione Fondiario-Agraria del Tavoliere di Puglia, Consorzio Generale per la Bonifica e la Trasformazione Fondiaria della Capitanata, Bari, 1952. M. Rossi-Doria, “L’individuazione delle proprietà e delle consistenze fondiarie . . .,” Atti d. Accad. dei Geografi, 1947.*

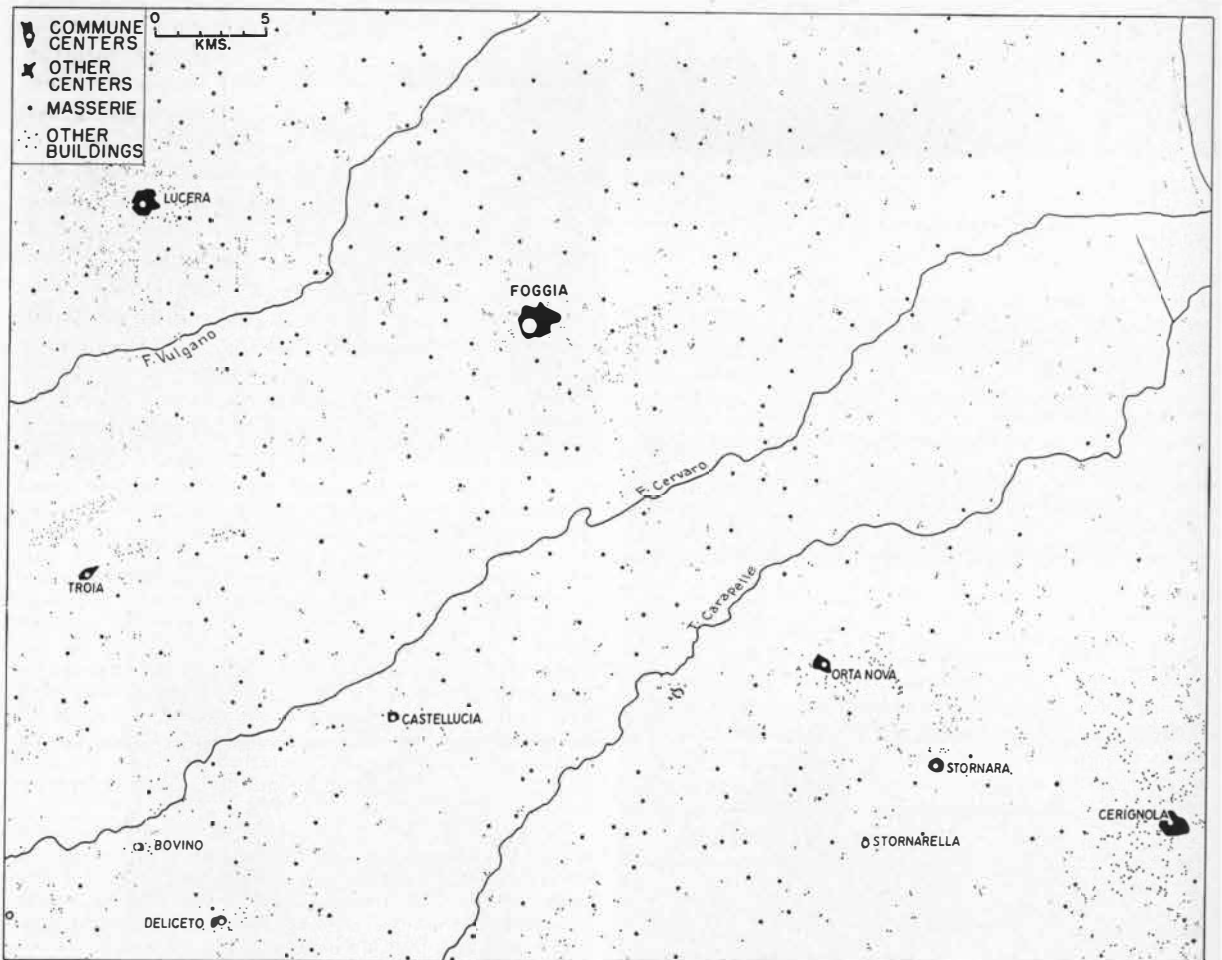


Fig. 7: is centered on Foggia.

area is today undergoing profound changes of ownership and economy. Out of a total area of 440,000 ha, one third has been voluntarily transformed by the landowners, including 30,000 ha developed just before the war by the "Opera Nazionale dei Combattenti" in compact "podere" (20—30 ha) with a mixed grain-livestock economy (phot. 16). The plans of the "Consorzio" (1948) will bring another third into the realm of compact "podere" of less than 30 ha (ranging from 5 ha on irrigated land to 30 ha on a crop-livestock holding). One third will remain in about 950 holdings with an average size of 150 ha. Irrigation works under construction during the ten year program will water about 85,000 ha. Dispersed farmsteads and small service centers (borghi) are being rapidly extended. Man-land relationships in this area are being radically transformed.

IV. *Causes of Dispersion*

It is evident that there is much dispersed settlement in considerable areas of varied environments in the South. Moreover, much of this settlement — both the individual farmstead and the small cluster of farmsteads — was of medieval origin, though the details of origin and development in their environmental settings have not yet been adequately investigated; and this holds good also for the sites and growth of the village centers. Much dispersion has steadily gone on during the 19th century and is now being accelerated as a planned policy of land settlement. Let us briefly examine the main causes of these modern trends.

The Napoleonic laws of 1806 abolished the feudal system and in 1809 divided the public domains between the feudal (who now became the private) owners and the communes, the latter being required to subdivide their portion among the needy peasantry. The church lands were confiscated by the State in the 'sixties and sold to private individuals. The net result of this change in land ownership was to transfer the land to the private ownership of the nobility and to those who could buy, and derive income by renting to the peasant tenants. The peasants, whose interest was the primary driving force in the whole reform, came out worst. The areas of the feudal domain, to which he had rights of common usage — for wood, pasture, and even for temporary cultivation — were greatly reduced and limited to restricted pieces of private land (many of which are still the source of dispute). Large areas were passed to the communes, for use as common land and for allocation to their needy peasantry. Down to 1860, population increased and in many areas doubled. The pressure of population resulted in the expansion of grain cultivation and in the clearance of forests in the interior highlands. This resulted in some new hamlets and farms, as in the Serra (see footnote 20). But,

in general, peasantry in the "latifondo" remained concentrated in the central villages.

The steady spread of the area under tree crops and vines and the intensification of agriculture in the lower lands has been one of the most remarkable features of modern economic development of the Mezzogiorno. Such land was usually held in small properties, often by townsmen, and was sold or rented to peasants on a great variety of share terms. The flat land was irrigated and hilly slopes were terraced and planted with vines, olives, and almonds. Dispersed farmsteads were built on such improved lands. This is exemplified throughout the coastlands of southern Calabria, as well as in the land of the "trulli". The trend was obviously encouraged by the high prices of these products and especially of wines. The period of the 'seventies and 'eighties was one of unprecedented expansion of the area under vines. But then came crisis, with the closing of France's doors to the custom-free importation of Italian wines in 1888 and, some years later after 1900, the phylloxera epidemic played havoc with the vineyards. Peasants sold their land and many emigrated. While emigration from the interior lands of Lucania and Calabria began in the 'seventies and 'eighties, since pressure was great on the returns of a very primitive agriculture, it did not get underway in Apulia until the last years of the 19th century and reached its peak during the 1900's. Since this date there has been widespread recuperation of the vine through grafting on American vines and replanting. The vine demands constant attention and much work per hectare. The peasants planted vines not only on compact holdings on improved leases, as in the "trulli" area, but also on any piece of land to which they had title near the village. Here they would build some kind of hut, where they could shelter, and maybe sleep, during the summer season. Permanent buildings, as we have seen, may be occupied for the summer, and may be inhabited through the winter by some workers and by the owners, tenants or bailiffs (guardiani). The dispersed farmstead, whether it be on an irrigated holding, or a hillside vine-olive-almond holding, or a holding in the interior hills devoted exclusively to grain and livestock farming, is generally the result of the spread of peasant ownership during the past hundred years or more, and is especially associated with the spread of more intensive cultivation.

The subdivisions of the common lands has also contributed to the dispersion of settlement. The communes did little before the 'seventies. Then a government commission caused the process to be expedited. Commune councils were authorized

to survey the qualities of the small natural units of their common lands, to subdivide them, and to invite requests from the needy, and select those to receive land²²). Such pieces of land were called "quote" and the process "quotizzazione". They rarely exceeded two hectares and the land was allocated to the peasants without any further guidance. This process took place in many communes during the 'eighties and after and there are still such lands available for subdivision — much disputed by the peasants. It is true that such minute pieces were inadequate to support a peasant. He had no equipment and no advice on how to cultivate, and in the face of unexpected hardship would sell to the best bidder. On the other hand, there is ample evidence, as in Gioia del Colle and Noci (Fig. 5), that the more enterprising of these peasants planted vines and acquired more land, until they were able to round off a holding adequate to support them or at least to reduce the number of days they had to find work from an employer as a laborer. During the difficulties of the phylloxera epidemic, many of the peasants introduced grasses, raised livestock, and marketed milk as well as vines and olives. These remain as instances of dispersed settlement in the fullest sense of the term.

A substantial wave of expansion of small properties after World War I further contributed to the dispersion of farmsteads. This has been the subject of exhaustive examination for all the compartments of Italy during the period 1919 to 1933²³). During this period some 1,000,000 hectares in all Italy passed to the hands of small owners in a great variety of ways, either by transference from other small owners and sometimes by purchase from a large landowner or the break down of a large latifundian holding. About 500,000 individual purchasers were involved so that pieces averaged out at about two hectares each. In southern Italy about 231,000 hectares or 5.2 per cent of the cultivated land was so transferred. The largest concentrations were on the Adriatic coast of the Abruzzi (part of the "mezzadria" area of central Italy); the zones of intensive

cultivation in the coastlands, and zones of medium productivity in the hills of Campania; the coastal and inland areas of Bari Province, and the extreme northern part of Lucania (the area on Fig. 5). Elsewhere the changes were very small. The principal causes of this trend were the constant desire of the peasant to acquire land, especially in face of the ever-increasing rate of population growth, and the great decline of emigration. Funds derived from the numerous emigrants of pre-World War I days were the main source for these purchases.

There are many local examples of land settlement and agricultural improvement in the South between the Wars. These have been carried out by the national veterans' organization "Opera Nazionale dei Combattenti" as in the Tavoliere and the Agro Pontino, by individual landowners, or by local groups of owners in authorized districts. There are also conspicuous examples of private owners who have undertaken such projects as paying capital investments. All these changes have involved the introduction of improved agricultural methods — the growth of winter-growing fodder grasses (alfalfa, vetch, clover, sulla, etc.) and new crops, and the raising of cattle and calves for milk and meat. They have also involved in some cases irrigation from local sources, but, in general, they have meant primarily the better utilization of the land. Moreover, the holdings have been generally of medium size, say ten to thirty hectares, capable of being worked by a peasant and his wife with maybe a little outside aid. Such farmsteads are built in the open countryside on the holding, or sometimes in small groups (borghi) near to the holdings. The general pattern of tenure and organization has been that of the classical "mezzadria". Peasants are usually carefully chosen for their ability as farmers, and technical guidance is given by the owner. Usually the farms on one operating unit draw supplies from, and deliver their produce to, the headquarters of the owner or bailiff. Such a focal point, described in central Italy as a "fattoria", contains the residence of owner or manager, the store houses for grain, seeds, etc., oil and grape presses, and the buildings for the school, provisions, post office, doctor's office and the like. Such an undertaking is obviously beyond the capacity of the penniless peasant and requires the enterprise of owners with capital and initiative. The "mezzadria" system is best suited to these circumstance and such islands of settlements are invariably marked by relatively good farming practices and levels of living. Examples are the Monticchio area in the Vulture highlands and of Avigliano and Ruoti

²²) From 1806 to 1860 some 600,000 hectares were allocated to the communes, 200,000 hectares were subdivided and 75,000 pieces reintegrated. The corresponding figures for 1860—76 were 44,000, 106,000, and 85,000 so that a million hectares were involved in all. Another half-million have been subdivided in the South since this date. See *Rossi-Doria*, *Riforma Agraria*, 1948, p. 144.

²³) *G. Lorenzoni*, *Inchiesta sulla piccola proprietà coltivatrice formatasi nel dopoguerra*. XV Relazione Finale, *Ist. Naz. di Econ. Agraria*, Rome, 1938. The increases as percent of cultivated land from 1919 to 1933 were: Abruzzi-Molise, 3.5 per cent; Campania, 6.9 per cent; Apulia, 6.8 per cent; Lucania, 3.3 per cent; Calabria, 3.9 per cent (all Italy, 5.7 per cent).

the recent settlement in the communes north of Potenza.

The latest stage in the spread of dispersed settlement is the land reform program that is currently in operation. This sets out deliberately to move the neediest peasants from the overcrowded villages to compact holdings. Such holdings are to be adequate to give full work to the family and maintain it at a reasonable living level. They vary in size according to the terrain. Provisions are also made for the intensification of farming so as greatly to increase yield per hectare and per holding. This is being done by the introduction of grasses and livestock and the spread of vines and olives and, where irrigation is available, by the introduction of new industrial crops. Underdeveloped large properties have been judiciously expropriated for this purpose in definite areas. These are in the areas of extensive commercial and peasant economies in Apulia-Lucania (Tavoliere, Fossa Premurgiana, and Metaponto) and the Sila Plateau and its contiguous Ionian coastlands. About 200,000 hectares in Apulia-Lucania and 75,500 in Calabria have been expropriated for redistribution as peasant holdings. In Apulia-Lucania holdings are to range from four hectares on irrigated land to 10 hectares in the hills inland, and 20 to 30 hectares on the high Murge. Quotas to make up the deficiencies of existing holdings are 2 to 3 hectares²⁴). In general, the aim is to resettle the neediest peasants in the same commune in which they live, although it is evident that the "surplus" peasants in some communes will have to be transferred to areas that have more land available. Many farms are being established

on dispersed holdings. Others are being established in small centers, where services are provided as well as the living quarters of the peasants. In other cases, farms are built adjacent to each other in regular series so as to permit the cooperative ploughing and harvesting of grain land. This method is being used in the Marchesato.

The process of dispersion has been going on slowly but steadily in the South in face of the incredible complications of ownership and tenure, and in spite of the dearth of money and education. With effective and continuous guidance, the integral land reclamation law of 1933, and now the current ten-year program of land development, bid fair greatly to expand the realm of dispersed settlement. It is abundantly evident that for over one hundred years the spread of peasant holdings has been going on simply by individual initiative, labors, and the dogged persistence of the peasant in a variety of environmental situations. The process of expansion of dispersed settlement has gone on through the desire of the peasant to own, work, and live on his land — at the worst to cultivate scattered strips far from his village, at the best to acquire an adequate holding and build his home on it and devote his energies continuously to it. In brief, the pattern of settlement in this area has no essential consistent relation either to the physical terrain or to water supply. It reflects social and economic conditions unfolding and changing through history and thereby resulting in new adjustments to the possibilities afforded by the physical milieu. The process has been slow, extremely difficult, and localized. The current program aims at facilitating such changes over wider areas, and especially in the underdeveloped areas of the extensive latifundian economies.

²⁴) See *Annuario dell' Agricoltura Italiana*, 1952, *Ist. Naz. di Econ. Agraria*, 1953, Ch. XI.

BERICHTE UND KLEINE MITTEILUNGEN

ÜBER KLIMATISCHE TROCKENTÄLER IM HIMALAYA

Ulrich Schweinfurth

Mit 2 Abbildungen

Climatically dry valleys in the Himalayas

Summary: Climatically dry valleys can be found everywhere in the Himalayas. This is not surprising in the northwestern section where the mountains rise out of the dry belt which stretches from the Middle East to Central Asia. The occurrence of climatically dry valleys is, however, astonishing in the eastern part of the Himalayas in areas where the climate in its general character is humid. There we frequently find a dry or very dry valley bottom which gradually or even more often abruptly gives rise on the

valley sides to damp or very damp forests. Observations of this phenomenon in the great river gorges in the east (by *Ward, Schäfer, Rock*), from Bhutan (by *Griffith, Ludlow*), and from Nepal (by *Williams, Polunin*) correspond very closely to those made by *Troll* in the Bolivian Andes. From his experience in South America *Troll* pointed to this phenomenon as a characteristic feature of tropical mountain regions. An explanation of the dry valley bottoms which occur simultaneously with cloud banks on both slopes at a certain height, and their connexion with a diurnal range of winds is difficult.

In 1932 *Wagner* made the first advance in this respect on the basis of observations and experiments in the Alps. He distinguished "Ausgleichswind", the main air current, "Berg- und Talwind" (mountain and valley wind) as the local development of air currents in each of the affected valleys, and "Hangwind" (valley-side wind), which is the