least understood, such as the limbic region, the hypothalamus, and the central gray matter. And second, there are still formidable technical barriers to establishing synaptic relationships between two biochemically specific cell types. This book clearly illustrates the power of modern neuroanatomical techniques. At the same time it reinforces Cajal's observation more than 50 years ago that understanding the architecture of the nervous system is a work not of years but of centuries.

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France in the Stone Age

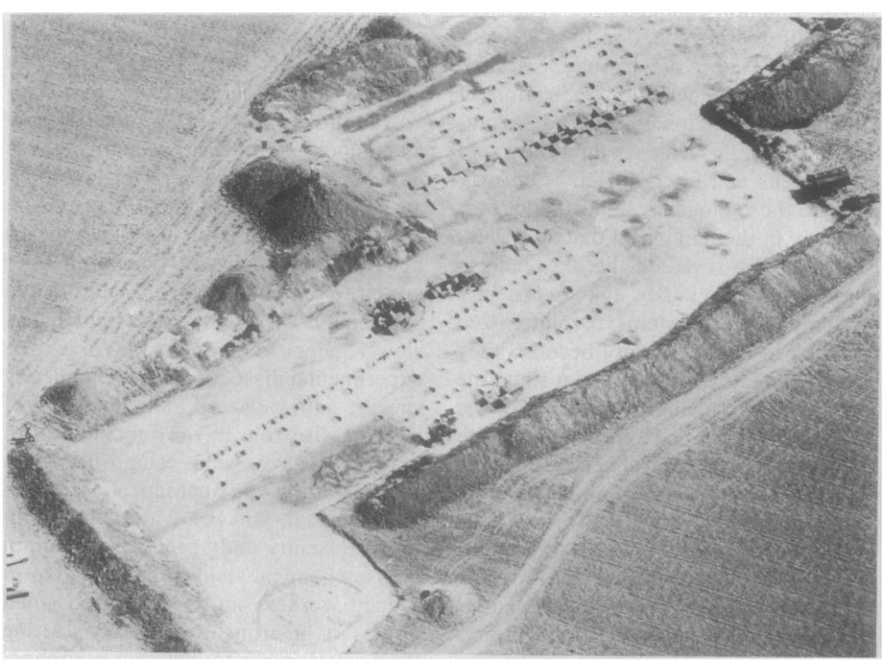
Ancient France. Neolithic Societies and Their Landscapes, 6000–2000 B.C. CHRISTOPHER SCARRE, Ed. Edinburgh University Press, Edinburgh, 1984 (U.S. distributor, Columbia University Press, New York). viii, 390 pp., illus. $35.

The earliest food-producing societies of France have never received the attention they deserve from European prehistorians. There are several reasons for this. Neolithic habitation sites are by and large open-air stations rather than caves or extant buildings, and thus stratigraphic interpretation is much more difficult. The pottery found on many Neolithic sites is not the spectacular painted wares or *terra sigillata* of later antiquity but often is plainly decorated if ornamented at all. There has been an understandable tendency to gravitate toward mortuary sites, especially the megalithic tombs of the Atlantic seaboard, rather than to systematically investigate the rubbish pits of Neolithic settlements. What little was known about the French Neolithic until about 10 years ago largely concerned the burial rite and funerary architecture of what might have been a fairly limited segment of Neolithic society.

Ancient France, edited by Christopher Scarre, makes a major effort toward filling the resulting gap. This volume is a collection of nine essays by young British archeologists who have been engaged in joint research with French scholars. The tradition of British involvement in French Neolithic archeology goes back over 50 years, first taking the form of a search for comparative material to enable better understanding of the British Neolithic, then of active collaboration with French research teams. The interpretative framework used by the contributors to *Ancient France* follows current trends in British (and, to a lesser degree, American) archeology, with a focus on understanding the social and economic factors underlying the archeological records. The contributors are the students of British archeologists who came into prominence during the late 1960's and early 1970's, but there is an important difference between these contributions and those of a decade ago. One now finds an emerging realization that theory is of little use without a firm data base to which it can be related, and the contributors to *Ancient France* have recognized the value of discussing the range of variation in artifacts and settlement configurations before trying to explain their implications.

The contributions to *Ancient France* take two different approaches to their coverage of the French Neolithic. The first three chapters treat the Early, Middle, and Late Neolithic of northeastern France, the region north and east of the Seine. Five of the remaining essays deal with more limited areas but cover the whole span of the Neolithic from the first appearance of food production to the transition to the Bronze Age. The concluding essay by Scarre presents a synthesis of broad trends in the French Neolithic.

Ilett's paper describes the earliest food-producing communities of northeastern France, which represent the westernmost expansion of the central European Linear Pottery and Rössen cultures. The most interesting aspect of these communities is their distribution at the microregional level. In an 80-kilometer stretch of the Aisne valley, for example, nine Linear Pottery settlements have been found, spaced an average of seven kilometers apart. Such a low density of settlement contrasts with the tightly clustered patterns observed for this culture in other parts of central Europe. Ilett briefly mentions the occurrence at these sites of the so-called "Limburg pottery," which differs from "typical" Linear Pottery ceramics in its bone temper, grooved decoration, and thickened rims. In the short time since the writing of Ilett's chapter, it has become apparent that "Limburg pottery"



"Aerial view of two longhouses on the western edge of the Bandkeramik settlement at Cuiry-lès-Chaudardes (1976 excavations). The house on the lower left is 39 m long; its groundplan is partially disturbed by First World War trenches. The other house is 28 m long. Lateral construction pits are being investigated in metre squares." (From M. Ilett's paper in *Ancient France*; photo, Michel Boureux]

is much more widely distributed than was previously thought, occurring in small quantities on many Early Neolithic sites in northeastern France, Belgium, and Holland, even as far to the southeast as Alsace-Lorraine. It may well emerge that this anomalous pottery has implications for understanding the relations between indigenous foraging bands and immigrant Early Neolithic communities in this area.

The papers of Burkill and Howell describe the consequences of the introduction of food production into northeastern France. Howell characterizes the Late Neolithic societies of the Paris Basin as having an "expanded village" settlement pattern, in which individual family units were dispersed across the landscape, leaving ephemeral archeological traces. The principal animal domesticate during this period was the pig. Similar developments took place in other parts of temperate Europe at this time. In the lowlands of north central Poland, for example, the communities of the Globular Amphora culture exhibit an almost identical pattern.

The authors of the regional studies that make up the balance of the book discuss areas in southern and western France, where the earliest evidence of food production dates to about 1500 years before that of northeastern France. In many cases the issue of the adoption of domesticates by indigenous foraging populations is more clearly defined. The earliest Neolithic economies of the Pyrenees, discussed by Bahn, appear to have been animal-based, where Mesolithic economies based on ibex, boar, and deer were transformed into ones based on sheep/goat, cattle, and pigs, with agriculture integrated into this system only later. In Provence and Languedoc, Mills suggests, the archeological record may be biased against sites on the coastal plain (which has been submerged in areas) and toward cave sites in the uplands. Agriculture was possibly established fairly early on the Languedoc coastal plain, around 5500 B.C., whereas an animal-based foraging economy persisted until a fairly late date in the upland zone.

Scarre's contribution on west central France treats an area in which food-producing communities encountered the coastal ecosystem along the Atlantic seaboard. An important feature of Late Neolithic settlement in this region is the existence of over 60 fortified sites. Scarre proposes that these were established as a result of competition to control limited areas of pasturage in the coastal wetlands. Hibbs's chapter on the Neolithic of Brittany and Normandy is of necessity focused on the funerary monuments, since few Neolithic settlement sites have been excavated in northwestern France. One hopes that the number of known settlements will increase as a result of ongoing research, for it is in this area that the problem of interaction between foragers and agriculturalists is crucial. The Breton peninsula supported Mesolithic populations that produced the famous Téviec and Hoëdic cemeteries, while the extent of the westward penetration of Linear Pottery–derived agricultural communities is only now becoming known.

Archeologists interested in continental Europe may have a tendency to skip over Lewthwaite's chapter on the Neolithic of Corsica, since the island lies 160 kilometers from mainland France and presents a situation that cannot be directly related to the cultures of the continent. This chapter has considerable anthropological interest, however, in that Corsica has one of the longest archeological records for an island its size. The earliest food-producing communities of Corsica appear to have been established around 5600 B.C., yet the foraging component of the economy persisted well into historical times. The exploitation of forest resources, especially acorns, was a central element of the subsistence pattern.

Ancient France makes two major contributions to European archeological literature. First, it provides an English-language description of the Neolithic period in France, and for this it will be a useful reference and source book for both research and teaching. More important, it establishes a baseline for future research by defining the current state of knowledge of the primary archeological data for particular regions as well as the degree to which it is currently possible to make inferences about prehistoric society and economy. The fact that many of the data contained in this book have become available only in the last decade reflects the vigor with which research into the French Neolithic is being pursued. One can only hope that the type of collaborative efforts that led to the essays in *Ancient France* will continue, and perhaps France can finally stop being the area on the map of Neolithic Europe where the arrows converge but of which little has been known.

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Raised-Field Farming in Mesoamerica

Pulltrouser Swamp. Ancient Maya Habitat, Agriculture, and Settlement in Northern Belize. B. L. TURNER II and PETER D. HARRISON, Eds. University of Texas Press, Austin, 1984. xvi, 294 pp., illus. $22.50. Texas Pan American Series.

Pulltrouser Swamp is a Y-shaped depression in the limestone terrain of northern Belize, linked by narrower depressions to parallel rivers, the Rio Hondo and the Rio Nuevo, that flow north-northeast in structural folds in the landscape to debouch into the Caribbean in Chetumal Bay. The limestone ridges that divide the river valleys are low, and the pyramids of the important ancient Maya sites of Nohmul, Cuello, and San Estevan are the most prominent points in the landscape. The inhabitants of these centers and their satellite settlements exploited the wetlands of the region, including Pulltrouser Swamp, for various economic purposes during the Preclassic (2000 B.C.–A.D. 250, according to uncalibrated radiocarbon dates) and the Classic (A.D. 250–900) periods; this book presents a preliminary report on a careful, innovative, and effective attempt to demonstrate how and when such manipulation occurred.

Wetland exploitation in the form of ditched or raised fields, though long discussed by geographers and archeologists working in South America, was first noted for the Maya lowland zone of southeastern Mexico and adjacent Central America in 1972, with Siemens and Puleston's report of an area of such fields on the Rio Candelaria in Campeche. Over the next few years riverine fields, created by digging canals into riverside swamps and piling the backdirt to either side to provide a surface above water level, were located in other areas, including northern Belize, where the important sites of Lamanai, Nohmul, and Cerros had small areas of associated fields. Puleston himself began a project on the Rio Hondo in the region, in collaboration with Siemens, which yielded substantial areas of riverine fields, together with one radiocarbon date of 1110 ± 230 B.C. (uncalibrated) for a canalside post that suggested field construction could have begun toward the end of the Early Preclassic, a period of occupation in the Maya lowlands then