Some Prehistoric Sites of France.

By Dr. H. M. AMI.

FRANCE is making rapid strides in the field of research in prehistory and archæology. These branches of science are closely linked with anthropology, which, in itself also, forms part of those broadening studies coming under the general designation of human palæontology. Les Eyzies, in the Dordogne country, along the southern slopes of the *Massif Central*, is described as "the Second Louvre of Western Europe," in a recent number of *L'Illustration* of Paris. This same locality has also been styled "the palæolithic capital of Western Europe." It is certainly one of the cradles of modern man, of modern culture, and of modern art. A short time ago the Musée Préhistorique des Eyzies was inaugurated and formally opened by M. Paul Léon, Directeur des Beaux-Arts of France, in very solemn yet popular fashion. On that occasion many questions and problems of world-wide interest with respect to human affairs in the past, and bearing upon the present, were brought to light or noted in the twenty-five or more addresses given during the day in that psychological spot.

In and around Les Eyzies are numerous rock-shelters and caves that have been inhabited from early palæolithic or pre-Mousterian times (Fig. 1). The caves have their walls and ceilings decorated, engraved, painted, or sculptured. The discovery of these exquisite works of art does not date back very long, yet these places are now centres of attraction, and constant

the Vézère rivers, both tributaries of the Dordogne. Many of these villages are probably very little different from what they were in medieval times, but under them and in the cultivated ground near them are

FIG. 1.—Rock-shelter of Le Château des Eyzies, Dordogne. Site of the Prehistoric Museum.

remains of the Stone Age in great abundance. Caves and rock-shelters, prehistoric sites and museum collections, as well as excavations under way and undertaken by experts under the ægis of the Beaux-Arts of Paris, may be seen to advantage at Les Eyzies, especially during the summer season.

Artistic sense and taste were early developed in France, so that the Mousterian culture or civilisation followed by the evidences found in the Aurignacian, Solutréan, and Magdalenian deposits characterising Magdalenian civilisation, as well as the next stage or Grenelle civilisation, saw the beginnings of design, engraving, carving, and painting, together with remarkable examples of sculptured rock-faces in Palæolithic times. These culminate in the remarkable frieze of horses in L'Abri du Cap Blanc, situated between Les Eyzies and L'Abri de Laussel, so renowned for the discoveries made by Dr. Lalanne of Bordeaux (Fig. 2). In the Grotte des Combarelles, and in Font de Gaume, close to Les Eyzies, in La Grotte de la Mouthe, and in other caves may be seen

FIG. 2.—Portion of frieze of horses (Abri du Cap Blanc near Les Eyzies, Dordogne).

visits or pilgrimages by people from every land are paid to them. The rock-shelters themselves are, many of them, still inhabited, troglodyte-like villages lining the base of the cliffs in the valleys of the Beune and of

to-day excellent representations of the animals of the Stone Age, including the reindeer, bison, musk-ox, hairy elephant, bear (cave-bear), rhinoceros, horse, antelope, and oxen, many of which can truly

be reckoned as masterpieces, so faithful are the lines to those of Nature. It is remarkable, and perhaps worthy of note, that the figures or pictures of man, or of ancestors in the line of man, do not in any measure equal in skill, in precision, or beauty the representations of the animal creation.

La Grotte des Eyzies, made famous by the early researches of MM. Lartet and Christy; L'Abri de Cro-Magnon, opposite and close to the Paris-Orleans railway station of Les Eyzies, where the five skeletons were found by M. Berthon-Mérourx with characteristics which mark the peoples of the British Isles as well as those of France and Western Europe, are spots of real classic value well worth visiting.

FIG. 3.—Slab of limestone with engraving of reindeer and ox (La Madeleine shelter, Dordogne).

Some forty members of the Geologists' Association of London, accompanied by a group of French savants, spent the best part of three days last year in and around Les Eyzies, where, besides the points of interest already mentioned, they saw Laugerie Haute, Laugerie Basse, Les Missalgues, La Grotte d'Enfer, La Grotte du Poisson, Le Roc de Tayac, Le Rocher de la Peine, L'Abri Pateau, L'Abri du Château, La Ferrassie, La Madeleine, La Micoque, etc. On all sides could be seen those delicately and artistically made *stone* implements, together with worked, carved, and ornamented *bone* implements associated with human remains of great antiquity (Fig. 3). It is evident that these primitives had a decided belief in a future state. Care was given to the burial of the dead. Their faces were turned towards the rising sun, and their arms and legs folded as if in an attitude of comforting sleep.

In the Museum of Les Eyzies, altogether due to the initiative, industry, and painstaking perseverance of M. Denis Peyrony, are to be found the gems of recent discoveries up-to-date, from the various layers, stages, hearths, abodes, and sites of Palæolithic and Neolithic man in the district. This museum is soon to become the home of a School of Archaeology and Prehistory. It is admirably fitted for receiving students from any part of the world who have at heart the desire to carry on systematic studies in that attractive field. There will be no dearth of material, untouched and unexplored as yet, and also of great interest, where opportunities for close application under a master like Peyrony (careful scientific investigator that he is) will be afforded in surroundings that are themselves inviting as well as inspiring.

Périgueux, in the Périgord, not far from Les Eyzies, is also a famous centre of prehistoric value and interest. The Musée du Périgord, in Périgueux, contains one of the best and most complete and systematically arranged collections to be seen in Central France (the Musée de Saint Germain-en-Laye, near Paris, being, of course, the museum not to miss seeing). M. le Marquis de Fayolle, and M. Féaux, of Périgueux, and M. L. Didon, have investigated in most zealous and able manner the many sites of the region, including L'Abri Blanchard, Les Fourneaux du Diable, La Grotte de Raymond, which have revealed a treasury of choicest implements and other remains characteristic of Palæolithic times.

Toulouse and its vicinity form another centre of prehistory in France. The discoveries of M. le Comte Bégouen and his school of workers, following close upon the results of MM. Noulet and de Cartailhac, in Haute-Garonne, are arranged in careful scientific fashion in the Musée de Toulouse. The palæolithic caves around Toulouse have yielded remarkable mouldings in clay, of bison, and of bear, in subterranean and aquatic tunnels, passages, and chambers.

The Pyrenees country of Southern France—hard by the Spanish districts so famous for their caverns and paintings—has also yielded its treasures to many zealous investigators. In Ariège, at Le Mas d'Auzil, and elsewhere, remains marking the close of Magdalenian civilisation must be seen to be appreciated.

Solutré has been for many years the classic spot for one at least of the stages of the Magdalenian civilisation which has become celebrated. Besides remains of not less than 100,000 palæolithic horses which were found here years ago, and magnificent examples of flint implements known as the laurel-leaf pattern, and *pointes à cran*, etc., there have just been found, at the Croc du Charnier, three complete and well-preserved skeletons of the Cro-Magnon type and Aurignacian in age, very similar to those of Les Eyzies. The work of Depéret, of Dr. Arcelin, and Lucien Mayet of Lyons at Solutré in 1923, has shown that this portion of Saône-et-Loire still yields remains of great importance.

Another interesting and important series of finds in prehistory are those of Abbé Lemozi in the Grotte des Cabarets and La Grotte de Murat. These also were described and illustrated in *L'Illustration*, and are referred to in an article in *NATURE* of November 10, p. 695.

For some years past Chelles and Saint-Acheul, two

classic spots of France—one east, the other west, of Paris, seem to have been closed to view. The old *sablères* of Chelles (Seine-et-Marne), and the *sablères* and *ballastières* of Saint-Acheul, near Amiens, in the Somme Valley, have been practically abandoned; but new ones have been opened which yield, every once in a while, really fine implements and remains of extinct animals marking those remote periods known as Chellean and Acheulean. These are found underneath stratified shore and river deposits varying in thickness from fifteen to twenty feet.

All these localities of France and many more have been, or are being, carefully studied by a modern school of enthusiastic workers which has arisen; and the State, recognising the importance of these studies, and the value of the sites themselves, has declared many of the latter national property, placing them under government care, and protecting them from just such depredations as were carried on by Germans and pro-Germans before the War at Les Eyzies.

Careful studies in Mousterian, Aurignacian, and Solutréan deposits have revealed many striking facts; for example, periods of flood, periods of desertion of shelters for a time, sudden changes in the character of the inhabitants of the rock-shelters, marking varying types of culture, each layer or series of layers being differentiated by variously wrought implements of bone or stone, some carefully and artistically made, others crude, rude, and very clumsily wrought.

The Solutréan stage, for example, at Les Eyzies, in Laugerie Haute, is subdivided by M. Peyrony into three distinct parts, one marked by the flint implements known as *feuilles de laurier*, another by *pointes à cran*, and still another by *lames à face plane*. To look over a Solutréan fireplace or hearth and examine carefully its contents is truly a revelation (Fig. 4). Solutréan inhabitants of Les Eyzies, sitting beside the fireplaces or hearths, built of rounded and polished granite and quartzite-blocks, must have been very industrious. The hundreds and thousands of flakes or fragments of flint in making the laurel-leaf pattern implement, show clearly the careful selection of the flint rock itself, of homogeneous and uniform grain and texture, and the patience and perseverance displayed in their making. First the larger flakes were removed, then smaller ones,

and smaller again until the very smallest, almost microscopical chips or flakes, were removed and the laurel leaf is the result. The climate and conditions of existence in these caves can also be read and interpreted owing to the presence of certain definite types of animal life.

Whilst much has already been done in prehistory in France, there is nevertheless much work ahead for successive generations. There will no doubt be greater results achieved in the near future. Everything points in that direction. Only a small fraction, not a thousandth part of the material left by prehistoric man in the shelters and caves, has been excavated. Every month reveals new sites and new treasures.

FIG. 4.—Solutréan hearth, where bones of bison, reindeer and horse, and "laurel-leaf" pattern stone implements and worked bone implements occur (Laugerie Haute, Les Eyzies).

Henceforth, under the able guidance and direction of the sympathetic and erudite M. Paul Léon, prehistory will make rapid strides, and France directs these researches in a thoroughly scientific way. All comparative studies are of value and interest when carried on in the spirit of search after truth, finding the facts and classifying them, and later, perhaps, attempting to draw some conclusions, and instituting parallels.

Britain is also a treasure-house in prehistory. Surprises are no doubt in store for the diligent student. Encouragement could well be given by the State, or by institutions that can afford means for scientific researches. The more man keeps himself in touch with Nature, the more will be revealed to him, and the more that is revealed to him, the better he will know himself.

Long-Range Weather Forecasting.¹

THE past half-century has witnessed a steady growth in the theory and practice of day-to-day weather forecasting by means of synoptic charts.

¹ Calcutta, Indian Meteorological Department. *Memoirs*, vol. xxiv., Part IV. Correlation in Seasonal Variations of Weather, viii. A Preliminary Study of World Weather. By Dr. Gilbert T. Walker. Calcutta, 1923.

Every few years has recorded some new advance, and it is scarcely a matter for surprise that, in developing the methods already in existence, the forecaster has had little time to spare for alternative lines of research directed towards a totally different class of forecasts—those known as "seasonal" or long-range forecasts.