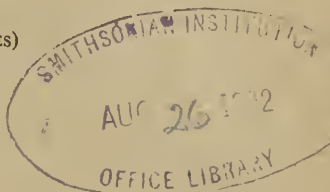


SMITHSONIAN MISCELLANEOUS COLLECTIONS

VOLUME 87, NUMBER 11

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(WITH EIGHT PLATES)



BY

J. TOWNSEND RUSSELL

Collaborator in Old World Archeology, U. S. National Museum



(PUBLICATION 3174)

CITY OF WASHINGTON

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(WITH EIGHT PLATES)

During July and August, 1931, the Smithsonian Institution and the University of Toulouse carried on cooperative research in prehistory in the departments of the Ariège and Haute Garonne, France. The writer, on the staff of the United States National Museum, was Field Director and the Smithsonian representative, while Count Henri Begouen, Professor of Prehistory at the University of Toulouse, represented the University. The results of this cooperation were so satisfactory that an agreement has been signed between the two institutions which continues the work during a period of 10 years.

MARSOULAS

The cave of Marsoulas, situated on the southern side of an abrupt hill on the right bank of a little stream known as the Louin, in the Commune of Marsoulas, Haute Garonne, was chosen as the first site for excavation.

The cave, having its opening due west, was formed by the action of water along a fault in limestone containing algae and foraminifera, belonging to the Thanetian or base of the Nummulithic series of the "Petites Pyrenees."¹ Its present opening is 10 meters behind the original emplacement, and the terrace, previous to this year's work, was buried deep under humus and rock falls from the former roof and the hill above. The gallery runs almost due southwest-northeast into the hill to nearly 60 meters depth. At about 40 meters it dips sharply down for some 5 meters to a spring, beyond which it is blocked by clay infiltration. The spring, flowing under the gallery, issues from the hill below the entrance and becomes part of the Louin.

Earlier excavation, in 1885-86, had brought to light two levels of Magdalenian and one of Aurignacian age.² Of its yield, only a few

¹The Smithsonian Institution wishes to express its thanks to Monsieur Mengaud, Professor of Geology at the University of Toulouse, who visited Marsoulas while excavation was in progress and gave the above determination.

²Abbé Cau-Durban, *La Grotte de Marsoulas*. Imprimerie et Librairie Abadie, St. Gaudens, 1887. Cau-Durban erroneously calls the Aurignacian level Solutrean.

objects are extant, a collection of flint and rock-crystal artifacts and a few worthy examples of geometric and figured art on horn and bone³ now to be seen in the Musée d'Histoire Naturelle at Toulouse.

In 1897, only a short time after the existence of Quaternary art had been established by the acceptance on the part of the scientific world of the authenticity of the polychromes in Altamira, M. Felix Renault announced the presence of frescoes in the gallery of Marsoulas.⁴ These and many others, unseen by Monsieur Renault, were later published by Cartailhac and Breuil.⁵ Among the geometric signs, polychromes, and engravings, the most outstanding are the well-known engraved human heads, the two dotted bisons in red and black, and the panel of aborescents, pectiforms, tectiforms, etc.

Shortly before his death, Monsieur Cartailhac purchased the cave and willed it to the University of Toulouse, after which it became a classified monument.⁶

While the interior of the cave was found to have been excavated, an entrance sounding at the emplacement of the modern gate erected by the University of Toulouse revealed an intact hearth apparently extending in front under the terrace. This was at first thought to be of Magdalenian age, but it later proved to be Aurignacian. Accordingly, the surveying zero was established on top of this hearth and the terrace was entirely removed. It contained four levels: Level 1, humus not quite 1 meter at its thickest; Level 2, averaging 2.25 meters thickness in the vicinity of the entrance, relic-bearing and composed of rock falls and earth; Level 3, bear clay;⁷ Level 4, the present bed of the underground stream running from the spring in the back of the cave (pl. 1).

³ Abbé Breuil, *Les Sub-divisions du Paleolithique Superieur et leur Signification*. Congr. Int. d'Anthrop. et Arch. Prehist. Comte Rendu XVI Sess., Geneve, 1912. Abbé Breuil et de St. Perier, *Les Poissons, les Batraciens, et les Reptiles dans l'Art Quaternaire*. Mason et Cie., 1927. Count Henri Begouen, *Sur un Os Grave de la Grotte de Marsoulas*. Rev. Anthropol., Oct.-Nov., 1930.

⁴ Bull. Archaeol., p. 210, 1903.

⁵ Cartailhac, E. et Breuil, L'Abbé H., *Les Peintures et Gravures murales des Cavernes Pyrénéennes*. Extract from *L'Anthropologie*, vols. 15 and 16, Mason et Cie., 1905.

⁶ A "classified monument" is an archeological site or architectural monument which is classified by the French Government and protected by law from depredation or removal from France. The Smithsonian Institution wishes to express its thanks to the Beaux Arts Commission for Classified Monuments, who graciously gave their permission for excavation to be carried on in Marsoulas.

⁷ The term "bear clay" is applied by prehistorians to a level occurring in the caves of this region, which contain the bones of the cave bear (*Ursus spelaeus*) and in which the cultural remains of *Homo sapiens* have so far never been found.

Adhering to the right wall, along the fault which caused the formation of the cave, partially inside the mouth and covered by Levels 1 and 2, was a deposit of travertine. This deposit, white and porous, was due to one of two causes: infiltration of water down the face of the fault or a blocking of a stream once flowing out of the cave at this level.⁸ There are three phases in its formation: the oldest, at the bottom, is compact and sterile; the second, relic-bearing and grayish, with charcoal; the third and uppermost, sterile and friable. The flint and bone extracted from the relic-bearing level have a water-rolled appearance. Flint is extremely rare as, owing to the chemical action of the deposit it had so disintegrated as to be indistinguishable from the travertine. The bone presented the usual features of splintered bone coming from Paleolithic levels.

The relic-bearing level (pl. 1, Level 2) contained two small hearths. That found in the sounding proved to be but a vestige, yielding nothing but a small collection of flint and bone tools typical of the Aurignacian culture. A second hearth, slightly outside the cave entrance, was located at plus 20 centimeters and sloped out and upward to plus 60 centimeters. It was thin and reddish in color and yielded only a few flint flakes and splinters of bone. Although there were no other hearths in this level, a sufficient quantity of splintered bone and artifacts was recovered to show that it composed the terrace of Paleolithic times, while the artifacts themselves have distinct Aurignacian affinities. Only four of these objects are worthy of note: Two scrapers, one of rock crystal (pl. 2), and the other a fragment of bivalve shell much used and too small for identification of species; a shell of the species *Capulus hungaricus* Linné, perforated for suspension and having the inner surface of its lip decorated with incisions; and an unusually large conch of the species *Triton nodiferum* Lamarck encountered at plus 1.60 centimeters (pl. 3). This mollusk, belonging to a warm-water fauna, occurs in the Atlantic as far north as the Charante Inférieure and is rare in the Mediterranean. It inhabits the coral zone at 25 to 75 meters depth and is therefore seldom thrown up on the shore. The species averages 230 to 250 millimeters long, sometimes reaching a length of 300 millimeters, while the width averages 170 millimeters. The Marsoulas specimen measures 310 by 180 millimeters. It had remained on a beach for a considerable length of time, as the test shows attack by *Algae clione*. The cone of the shell had broken and healed during its lifetime. Except for an ancient

⁸ *Idem*, p. 1, footnote 1.

irregular breaking of the lip and an unfortunate perforation at the time of excavation, there is no artificial adaptation of any sort.⁹

The find of a *Triton* shell in a Paleolithic level is important from several points of view. A few stations have yielded *Strombus*, but this is the only *Triton* so far reported. The 250 kilometers separating Marsoulas from the Mediterranean and the 300 kilometers distance from the Atlantic is witness to the wide migrations or trade contacts of the Paleolithic hunters, provided the species existed in those seas during Quaternary times. If it did not, the distance over which it came indicates for these hunters travels or contacts farther afield than has been previously considered possible.

Fauna from the Paleolithic terrace: Red fox (*Vulpes* sp.), fox (*Vulpes* sp. or *Alopex* sp.), horse (*Equus* cf. *caballus*), reindeer (*Rangifer* cf. *tarandus*), bovid (*Bos* or *Bison* sp.), Mollusca (*Capulus hungaricus* Linné, *Triton nodiferum* Lamarek).

Fauna from Aurignacian hearth: Fox (*Vulpes* sp. or *Alopex* sp.), horse (*Equus* sp.), reindeer (*Rangifer* cf. *tarandus*), bovid (*Bos* or *Bison*).

Fauna from travertine: Horse (*Equus* sp.), bovid (*Bos* or *Bison* sp.).

TARTE

On the floor of the cave of Tarte,¹⁰ situated in the same hillside and 500 meters west of Marsoulas but in the Commune of Cassagne, Haute Garonne, an interesting industry in poor quality quartzite, neglected by former searchers, was remarked. It was decided to make a sounding in the hope of finding an intact layer that would date these artifacts.

Two layers were found, one on the right just inside the entrance and the other on the extreme left of the terrace. Both contained the Aurignacian typical of Tarte, and both contained the quartzite industry.

The form of the quartzite artifacts was limited by the poor quality of the material, and no particular type is recognizable. Only one face of these artifacts was retouched, and they apparently served as choppers and crude scrapers (pl. 4, figs. 1 to 4). The specimen shown in Plate 4, Figure 4, is water-worn and is, therefore, probably

⁹ The Smithsonian Institution wishes to express its thanks to Monsieur Joleau, Professor of Geology at the Sorbonne, who examined the specimen in question and gave the above opinion.

¹⁰ Cartailhac, Quelques faits Nouveaux du Prehistoire Ancien des Pyrenées. L'Anthropologie, 1896, p. 316; Cartailhac and J. Bouysonie, Une Fouille à Tarte. Assoc. Française Advanc. Sci., 1909, p. 128; Cazedessus, Jean, La Grotte du Tarte. IX Congr. de l'Union Hist. et Archaeol. des Sociétés du Sud Ouest, 1926.

of Lower or Middle Paleolithic age, having been found by the Aurignacians in a stream bed, brought by them to Tarte and used without further adaptation.

Among the quartzite pieces on the floor of the cave was found a splendid example of the Paleolithic artist's palette, which probably came from the Aurignacian levels. This piece consists of the cleanly broken half of a quartzite pebble, the flat surface of which is thickly coated in red ochre. It measures 23 centimeters long by 19 centimeters wide.

THE OPEN-AIR WORKSHOP OF ROQUECOURBERE

Four kilometers "as the crow flies" due east from Marsoulas and Tarte is a cave known as the Cave of Roquecourbere¹¹ situated in the Commune of Betchat, Ariège. It is one of the two sites in the Pyrenees that yielded remains of the Solutrean culture. Soundings were made here, but it was found to have been completely emptied. Below the cliff containing this cave, on the left bank of the little stream known as the Lens, is the open-air workshop of Roquecourbere.

The site is in a wood and covers several hectares. A number of man-made flint flakes found in a rain-washed cart track leading through it first attracted attention to the station.

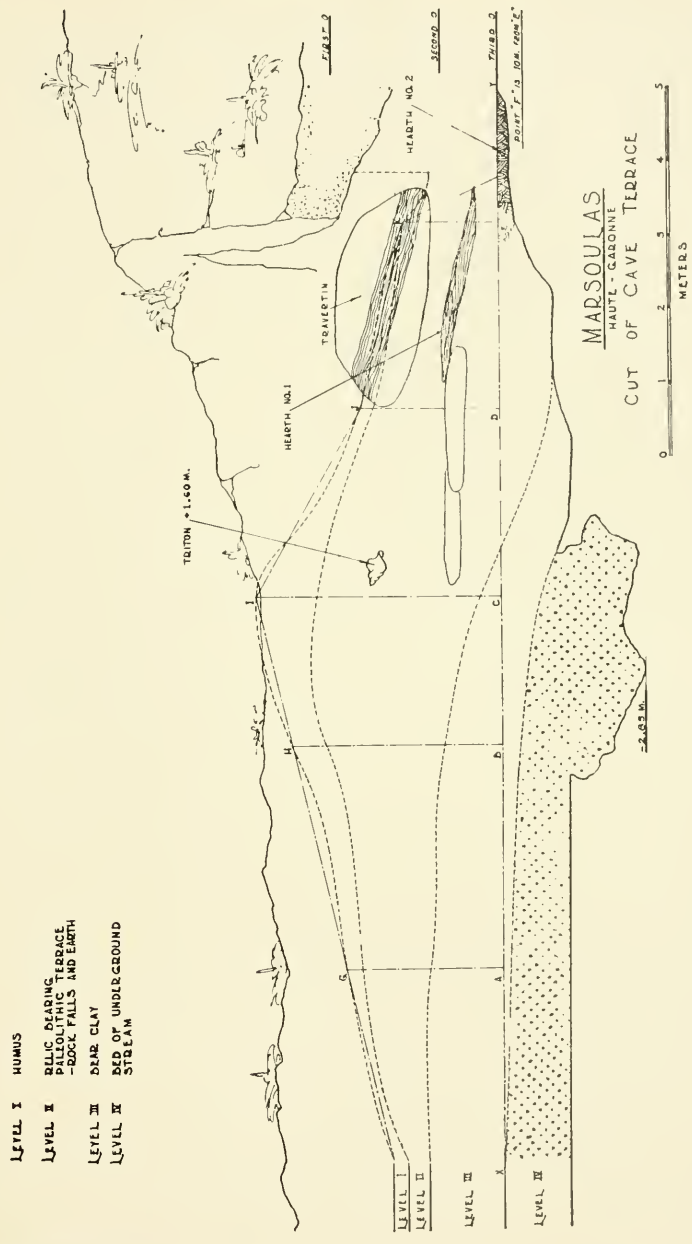
Twenty-one soundings were made. Below a level of humus varying from 60 centimeters to over a meter in thickness was a layer 50 centimeters thick consisting of quartzite pebbles and flint nodules of poor quality tightly packed with earth. This layer had been superficially quarried from the surface in Upper Paleolithic times. Artifacts and débris of manufacture occurred in this level, as well as in the lower part of the humus. In sounding No. 8, a considerable quantity of flints was found where the quarry layer appeared to have been dug into deeper than elsewhere. The stones had been thrown aside so as to make a cup-like depression, whose borders were covered only by a few centimeters of humus.

The quality of the material is very poor and the yield of the station meager; the proportion of worked flakes and finished tools is only 10 to 15 per cent of the whole (pls. 5-8). Plate 6, Figure 1 shows a nucleus trimmed into a double scratcher resembling the rostro-carinate scratchers of the Aurignacian from Tarte.

The industry belongs to the Lower Aurignacian, but if the workshop was used by the people of Tarte, the poor quality of the material rendered impossible the production of typical Tarte pieces.

¹¹ Cazedessus, Jean, Galerie de Roquecourbere. Assoc. Française Advanc. Sci., Congr. du Havre, 1929.

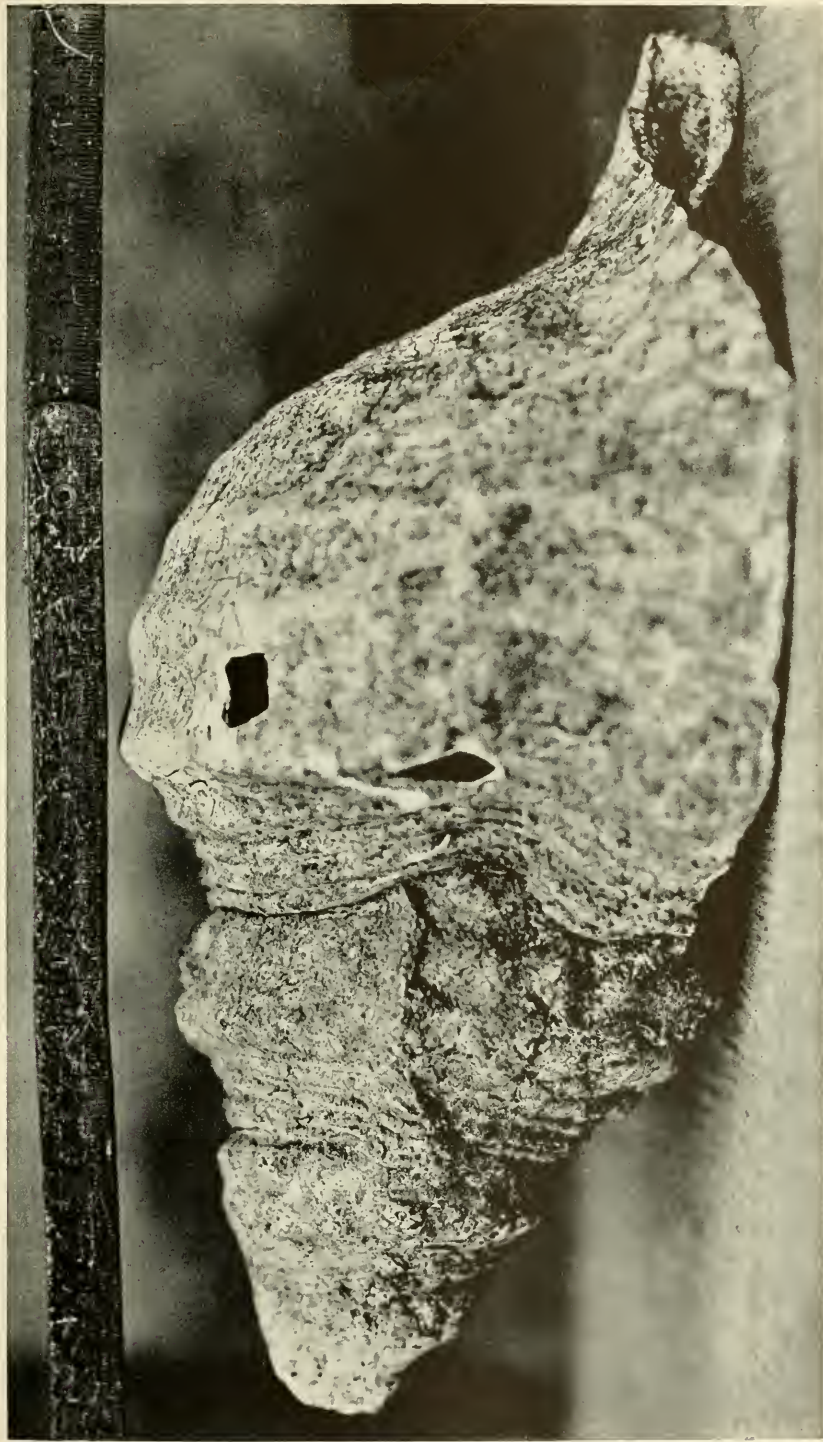




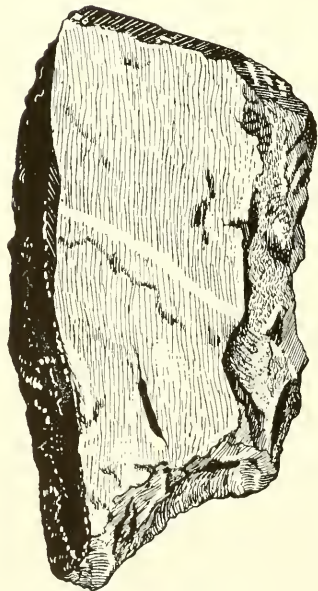
Cut of the terrace of Marsoulas.



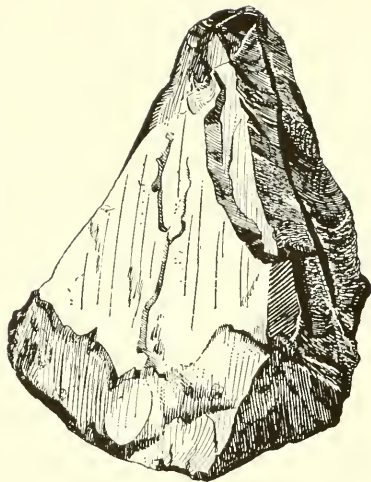
Rock-crystal scraper, Level 2, Marsoulas.



Shell of *Triton nodiferum* Lamarck, Level 2, Marsoulas.



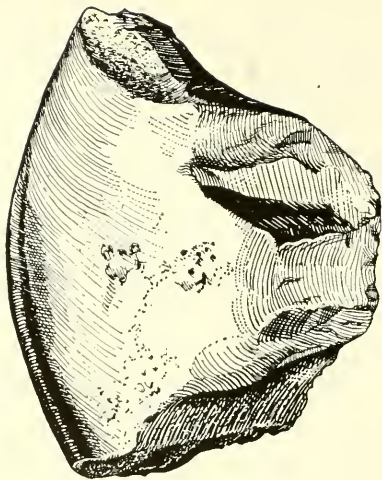
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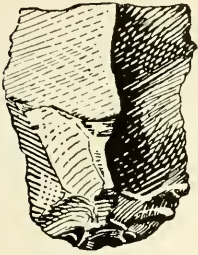


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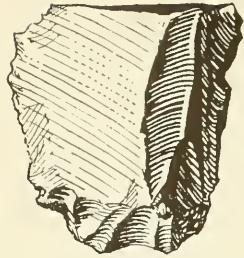


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Four specimens of the quartzite industry, from Tarte.



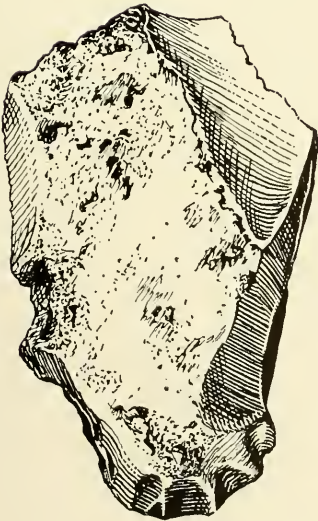
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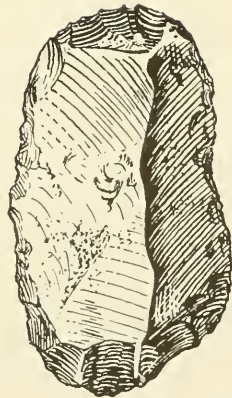
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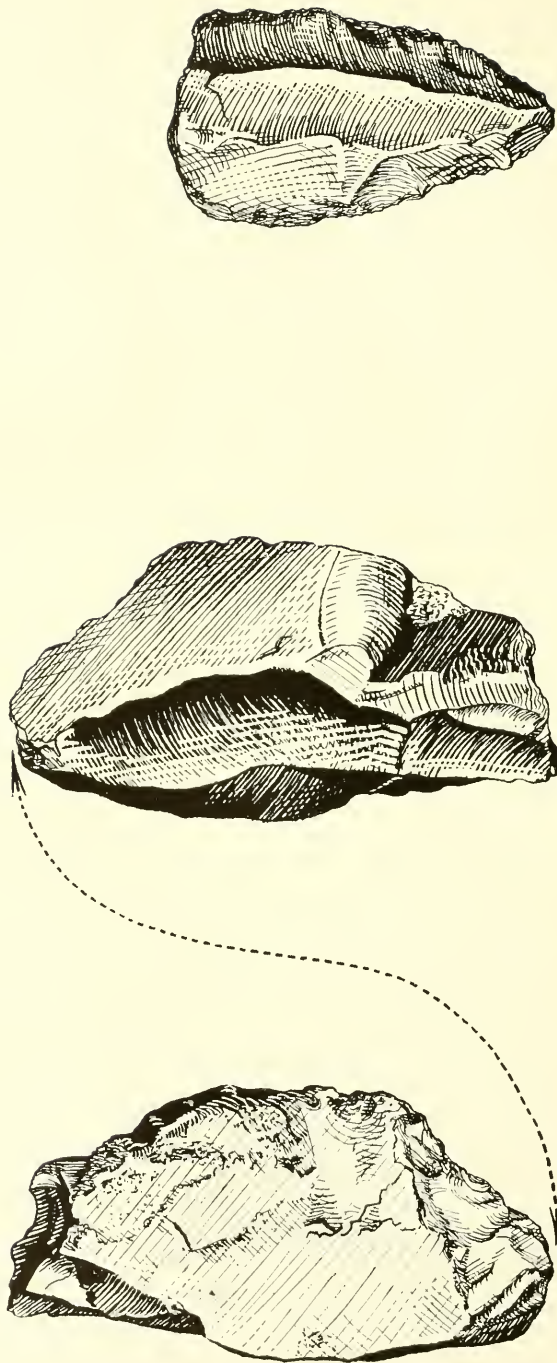


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Five scratchers from the open-air workshop of Roquecourbere.

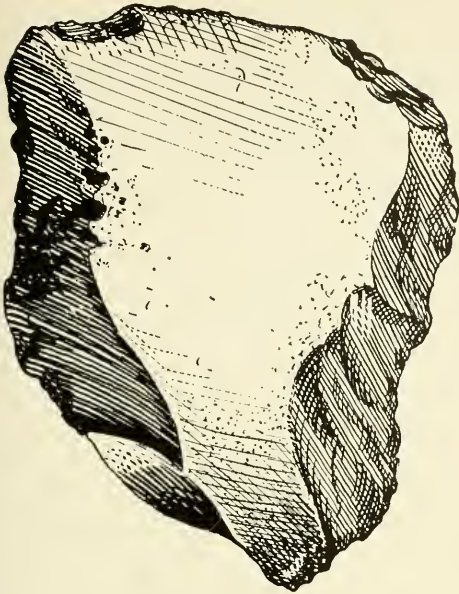


1

2

Artifacts from the open-air workshop of Roquecourbère.

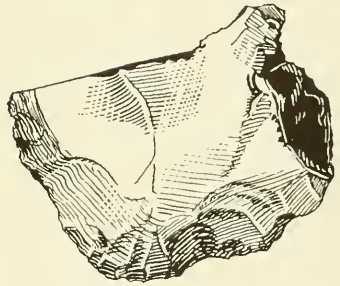
1, Nucleus trimmed into a double scratcher; 2, point.



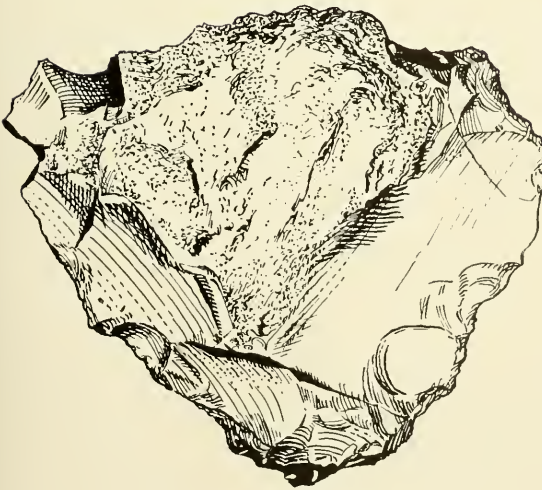
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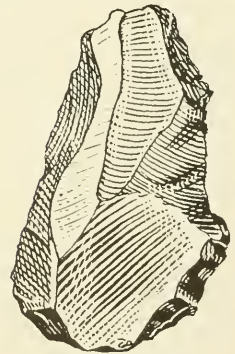
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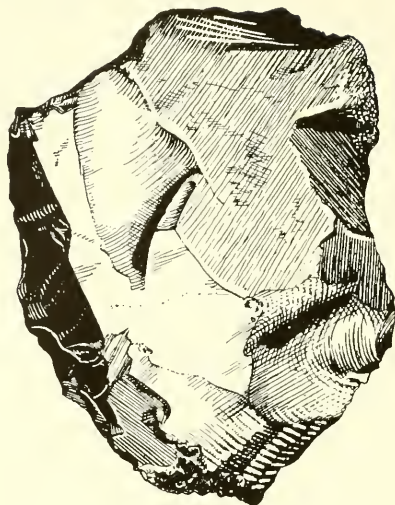


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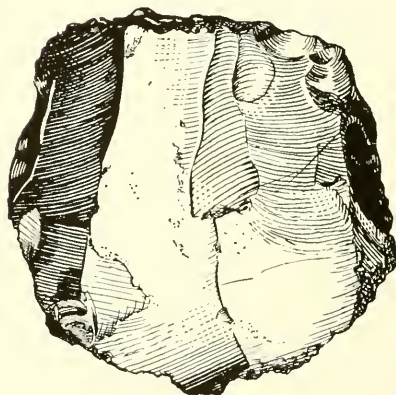


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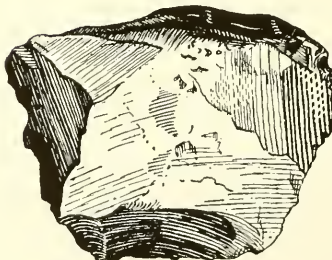
Five scrapers from the open-air workshop of Roquecourbere.



1



2



3

Three nuclei from the open-air workshop of Roquecourbere.