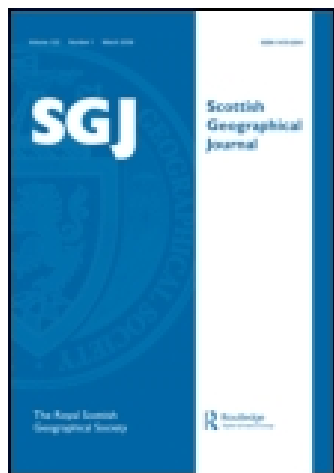


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THE SCOTTISH GEOGRAPHICAL MAGAZINE.

THE BERBERS OF THE AURES MOUNTAINS, ALGERIA : A STUDY OF A PRIMITIVE PEOPLE.¹

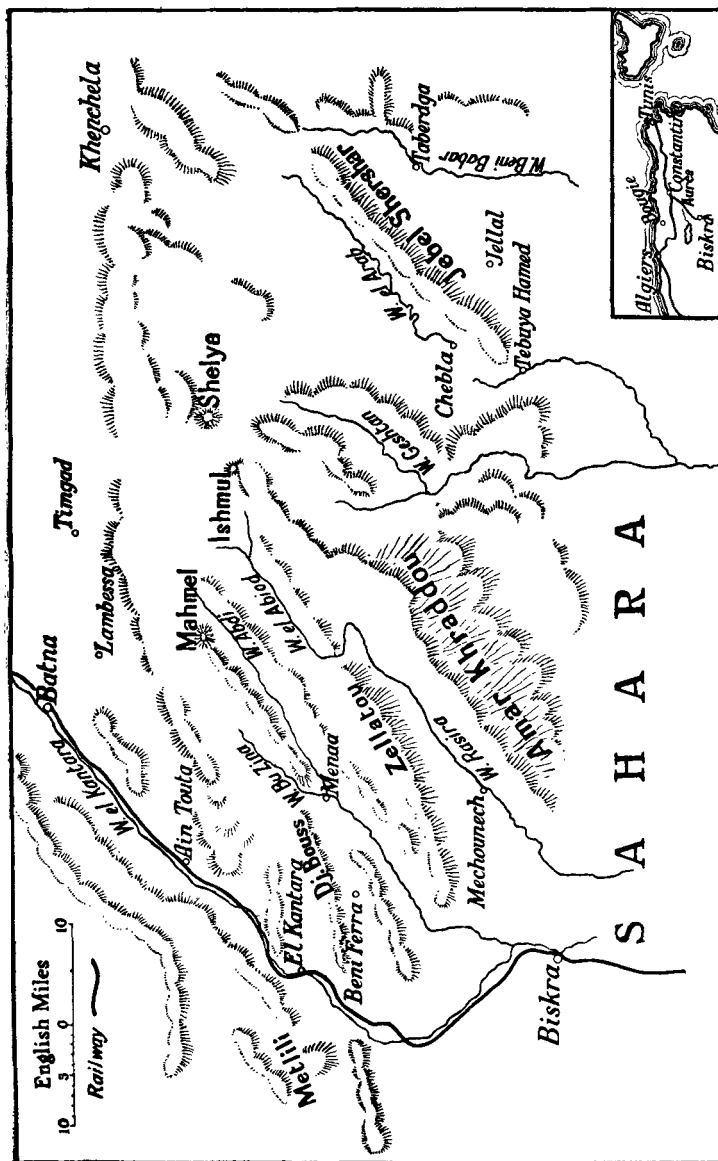
By M. W. HILTON-SIMPSON, B.Sc., F.R.G.S., F.R.A.I.

WHEN in 1912 my wife and I determined to undertake ethnographical researches among a Berber people of Algeria and to collect specimens of their handiwork for the Pitt-Rivers Museum, Oxford, we were naturally guided in our choice of a locality in which to work by the physical features of the country.

We knew, of course, that the remnants of, presumably, the oldest of the peoples of the Barbary States must be sought among the mountains in which, from time to time throughout the ages, they had found refuge from successive waves of foreign invasion. It remained, therefore, for us to select a mountain country insufficiently fertile to attract the early conqueror; strong enough in its natural defences to afford a safe asylum to its Berber inhabitants during the frequent struggles which have convulsed North Africa in the past; as yet unpenetrated by highways likely to admit the increasing stream of modern tourist traffic, a power for the removal of ancient arts, crafts, and customs as great as that of any warlike invader. We experienced little difficulty in choosing such a field for our work.

Disregarding the more or less fertile mountain home of the Kabyle Berbers in the coastal ranges of Algeria, as having been more liable to foreign influence, ancient and modern, than some remoter districts, we decided upon the massif of the Aures to the north-east of Biskra, on the fringe of the great desert; a region in which the Berber race, to which

¹ A Lecture delivered to the Society in Edinburgh on March 2, 1922.



W.C.H. 1922

FIG. 1.—Sketch-Map of the Aures Mountains.

its Shawiya tribes belong, might reasonably be expected to have preserved arts and crafts, manners and customs of other days, but little altered by contact with the outer world. The natural fortress of the Aures is well protected by its geographical frontiers (Fig. 1). A line of steep-wooded slopes, forming the northern boundary of the massif, frown down forbiddingly upon the central high plateau of Algeria, upon the famous Roman ruins of Timgad and those of the garrison town of Lambessa, the very size of which place of arms is sufficient evidence that Rome did not overawe the mountain tribes to such an extent as to feel secure from their attacks.

Immediately to the south of these slopes the rocky ridge of Mahmel in the west, the peaks of Ishmul in the centre, and of Shelya to the east (the latter attaining a height of 7630 feet above the sea), their rocky summits clothed with snow during the greater part of the year, form the watershed of the Aures. From it several streams flow south-westward through high-lying valleys between ridges of grey rock, passing out to perish in the Sahara through deep and narrow gorges, mere clefts in a precipitous wall of barren rocks whose brilliant coloration at sunset fills with admiration the winter visitor to distant Biskra, as he gazes upon their marvellous shades of orange and pink, softening to purple as night steals upon the wilderness and the hills. A mere glance at this southern rampart of the Aures is sufficient to show why the seventh-century Arab conqueror, Sidi Oqba ben Nafi, endeavoured to use persuasion rather than force in his efforts to impose the faith of Islam upon the Shawiya mountaineers, by whom he was eventually slain in battle at a point in the desert to the east of Biskra.

The eastern boundary of the massif is guarded by the barren ridge, some 5870 feet above sea-level, known as the Jebel Shershar, which runs north-eastward from the Sahara, some sixty miles to the east of Biskra, towards the central Algerian plateau. Upon its western frontier frowning rocky hills—beneath which now run the motor road and railway to Biskra from the north—oppose any would-be invader approaching from this side. Within these steep, forbidding frontiers a series of ridges, running for the most part from north-east to south-west from the watershed of the Aures towards the desert, divide the massif into a number of remote and hardly accessible valleys, the scenery of which is as remarkable for its sharp contrasts (cf. Figs. 2 and 3), as for a beauty scarcely to be equalled in other districts of Algeria.

Thus the pine and cedar forests of the northern slopes and the grey, rocky valleys of the central Aures, dotted with the juniper and ilex of Europe, peopled by fair-haired, light-skinned Berbers, might well form part of a continent remote from that which reveals itself to the traveller so short a distance to the south, a country of barren, rocky ranges, glowing red in the sunlight, overlooking great oases of date palms through which the streams of the Aures meander on their way to the desert, a land of tent-dwelling, nomad Arabs. Indeed, at several points in the west and centre of the massif a ride of but a dozen miles may

well seem to transport the traveller, as if by magic, from southern Europe to the fringe of the African desert.

In these secluded valleys my wife and I commenced our work among the Shawiya, spending three winters in slowly wandering from south to north up the courses of their poor streams, visiting hamlets as small and remote as we could find as well as all the larger villages of the hills.

During a fourth winter we spent most of our time at our "base," the oasis of El Kantara on the railway, thirty-five miles to the north of Biskra, comparing our notes upon the hill folk with the life of the



FIG. 2.—The valley of Bu Zina from the NE. Contrast Fig. 3, and note the South European character of the vegetation.

dwellers in the plains, while I revisited some of the Shawiya settlements of the western Aures.

In order to observe as closely as possible the daily life of the mountaineers, we lived in native houses in the villages in preference to camping outside, and we employed no servants other than a native mounted orderly kindly lent to us by the French administrative authorities. In this way, living actually with the Shawiya, we found that we could enjoy excellent facilities for observing their daily life and customs. The physical characteristics of the people and their Berber speech, which were not the objects of our purely ethnographical investigations, clearly stamp the Shawiya as human relics of a very distant past.

Many of their arts and crafts, however, have evidently crept into the hills at various later periods of North African history, and, although

not indigenous, have persisted in the original form in which they were introduced. Some of these I have already described elsewhere. For example, an olive-press exists to-day at Beni Ferra, in the south-western corner of the massif, which resembles a press of Roman times, reconstructed by Professor J. L. Myres from a ruined site in Tripoli, so closely that the same man might well have designed and erected the two (see *Man*, August 1920). Again, an account of the perforated copper bowl, possibly of Roman origin, which, sinking in water four times per hour, is used in the same place as a "water-clock" for apportioning the time of canal irrigation allowed to each landowner in a country where periods of drought are all too frequent, is given in the *Geographical*

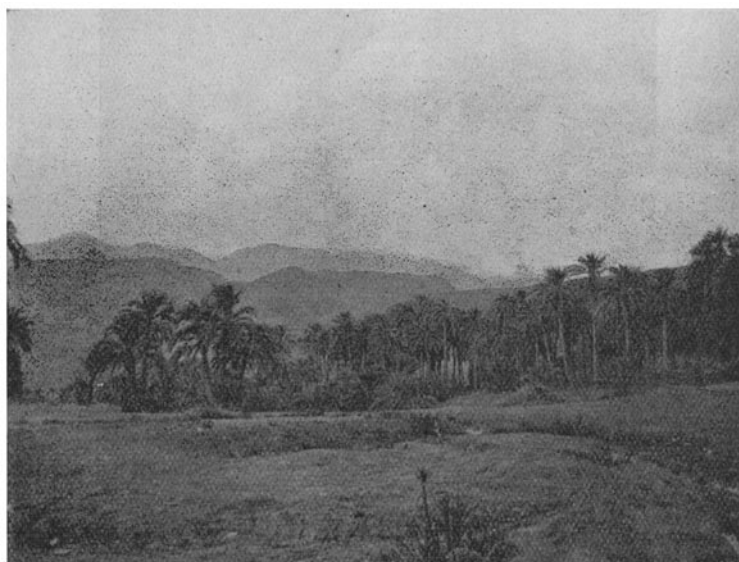


FIG. 3.—Looking NE. towards the Abdi valley from Jemora, in the SW. corner of the Aures.

Journal for January last, as well as in my book on the *Hill Folk of Algeria* (cf. p. 44).

Without moving farther into the fastnesses of the Aures than this same village of Beni Ferra, yet another craft may be observed which appears certainly to have been introduced at the time of the Roman occupation of the surrounding country, namely, the manufacture of stones for the quern or rotary hand-mill for grinding corn.

This hand-mill, used in the Aures and by the nomad tribes of the surrounding desert, is the most primitive means of producing flour with which I have come into contact in Algeria, yet it is by no means the oldest to be found in North Africa.

James Richardson, the well-known desert traveller, who visited Ghat in Fezzan about the year 1845, there observed and illustrates in his

book (*Travels in the Great Desert of Sahara*, ii. 81) a hand-mill of the "saddle stone" type exactly resembling that used under the Old Empire of Ancient Egypt, described by Erman in his *Life in Ancient Egypt* (translated by Miss H. M. Tirard), in which flour was produced by rubbing the corn between the stones: "The lower larger stone was fixed and sloped towards the front, so that the prepared flour ran into a little hollow in the front of the stone."

This method of hand-milling was generally in use in Syria, Egypt,

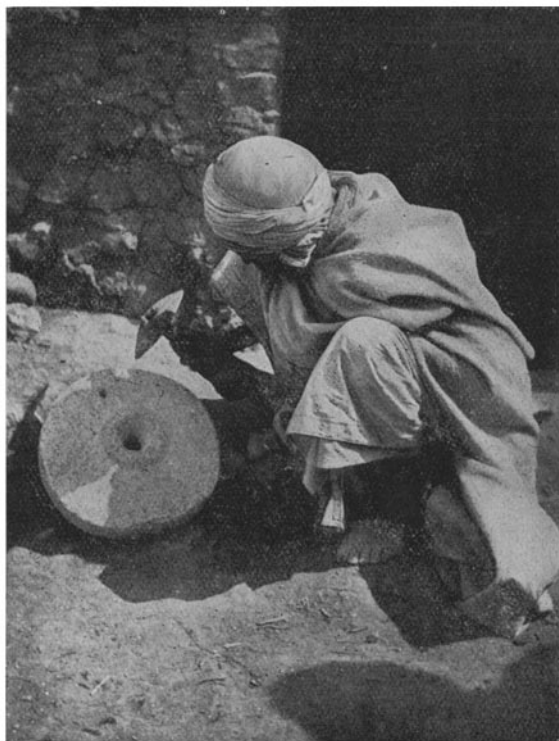


FIG. 4.—Making a quern.

and the Aegean as well as in most parts of Central and Western Europe, and, without doubt, Algeria, before the rotary quern was invented. According to Messrs. Bennett and Elton in their *History of Corn Milling* (vol. i.), it was invented in Italy, possibly by the Volsinians, as late as about the second century B.C.

Assuming that Bennett and Elton are correct in their conclusion, drawn from a mass of evidence, that the quern originated in Italy, there seems little room for doubt that the Romans introduced it into the Aures, probably shortly after their arrival there, for I have noted in Algeria no such elaborately carved grinding surfaces as are to be seen in some, perhaps later, Roman specimens illustrated by these authors.

The stones which constitute the quern are chipped by hand in those areas of the Aures where this stone can be quarried. Thus the village of Beni Ferra enjoys quite a small export trade in querns to the western portion of the massif, from Batna to Biskra, and to the nomad camps at the foot of the hills, while the eastern portion of the Aures obtains its supply of millstones from such villages as Tebuya Hamed and Jellal, beneath the ridge of the Jebel Shershar. The quarrying operations are somewhat dangerous, for the stone is found at a considerable depth below the surface of the soil, which is liable to collapse and so entomb the native in the act of digging out his material.

A piece of stone of a size suitable for the manufacture of a pair of millstones having been extracted from the earth, it is roughly hewn into a cylindrical form and is then split into two portions, thus giving the same diameter to the upper and lower grindstones. This is carried out by means of a locally-made iron-headed tool fitted with a wooden handle, known in the Shawiya dialect as "a'afedis" and resembling a short and heavy pick. As a rule this is the only implement required for the fashioning of grindstones, though a man may use it in four different sizes; hammers and plain steel chisels have, however, found their way into the hands of some workmen at Beni Ferra.

The quarrying of the stone and its rough fashioning, carried out before removal from the quarry, occupies from about fifteen to twenty days. A further three or four days' work is required in the maker's house. This includes trimming the quern; socketing a vertical wooden peg in the centre of the lower stone; perforating the centre of the upper one with a hole, through which this peg must pass so that the upper stone may be turned around it when grinding, and through which the grain may be poured by hand to fall between the two stones; boring a hole at one side of the upper surface of the top stone into which a short vertical wooden handle is fitted for the turning.

Such a twin-stone quern is sold for as much as twenty-five francs since the War. In the tents of the desert and in most Shawiya huts the quern is simply placed upon a mat when grinding is to take place, but in some more elaborate houses of the desert and the hills the quern is set upon a plinth of masonry or mud brick, in which a trough around the lower stone serves to catch the flour as ground. Thus the Shawiya use habitually to-day the rotary hand-mill or quern which, invented in Italy and introduced into much of the old world in the wake of the Roman conqueror, has spread to such widely separated countries as Japan, Ceylon, Scandinavia, Ireland, and Scotland, in the two latter of which it was still in use some seventy years ago (Bennett and Elton, vol. i. pp. 166 and 171).

Though the quern is still the corn-grinding apparatus of the tent-dwelling nomads of Algeria, and of all dwellers in districts not blessed with the possession of more or less perennial streams, yet in the Aures and in other mountainous regions where such streams exist, a simple type of water-mill is to be found in use by those who can afford to pay

a miller ten per cent. of their grain, or its equivalent in money, to grind for them the flour necessary for their subsistence. This primitive machine consists of two circular millstones, rather larger than those which constitute the quern, the upper one of which is caused to rotate by water-power instead of by hand. The apparatus (Fig. 5) is erected in a hut of the ordinary stone Shawiya type beneath which flows a small "saqiya," or irrigation canal.

The upper circular millstone, A, rotates horizontally upon a stone

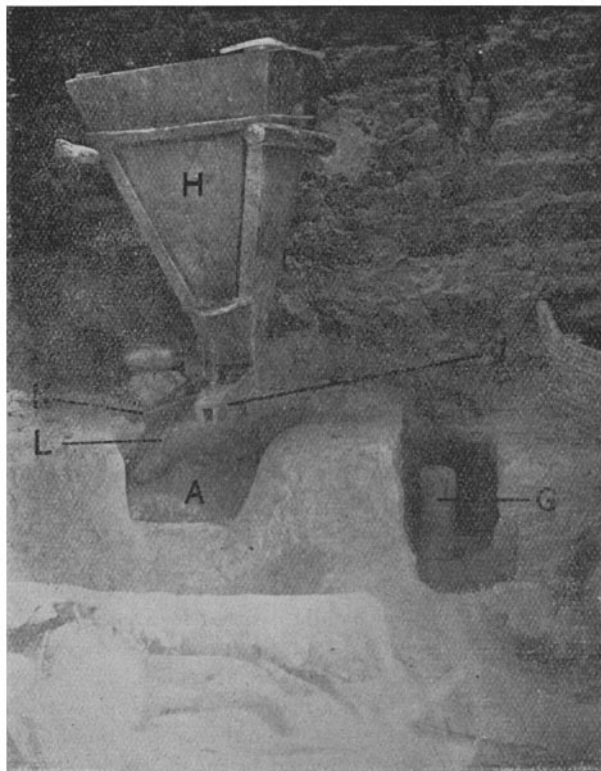


FIG. 5.—Photograph of a Shawiya water-mill.
(For explanation of letters see Fig. 6.)

of similar diameter, B, which is immovably embedded in masonry beneath it. From the axis of the upper stone, to which it is firmly attached, a wooden shaft, C, descends through the floor of the building, passing through the centre of the fixed lower stone and terminating at its lower extremity in a horizontal rimless wheel of wood, D, the spokes of which are often curved in the same plane as the wheel, and are broad and slightly hollowed on their concave side. This horizontal wheel is suspended by means of its shaft in the centre of the "saqiya," E, at a point just below a short fall in the course of its stream, so that the

water, falling from a height of a few feet, or even inches if the stream be strong, strikes against the hollowed, concave spokes of the wheel. The wheel is thus caused to rotate rapidly and so produce a rotary

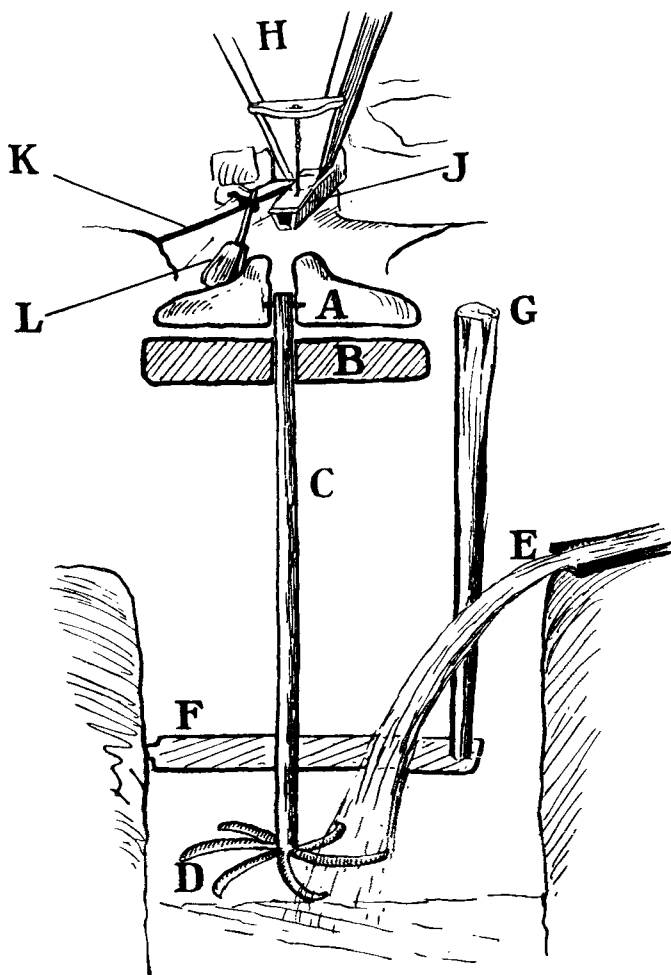


FIG. 6.—Diagram of a Shawiya water-mill.

A, upper millstone; B, lower millstone; C, shaft; D, rimless wheel; E, water channel; F, plank used to stop current; G, handle; H, hopper; J, feeder; K, horizontal rod; L, stick resting on upper millstone.

movement of the upper millstone which, as we have seen, is firmly attached to the other end of its shaft (Fig. 6).

So long as the water falls upon the horizontal wheel the mill is working. In order to stop the upper grindstone when required a plank of wood, F, is attached at one end to the side of the "saqiya" so that, by means of a handle, G, extending upwards into the mill-house, it can

be interposed between the stream and the horizontal wheel, which there-upon ceases to receive its impetus and accordingly comes to a standstill. A slightly more elaborate variation of this system of stopping and starting the mill is to be found in some cases in which the horizontal wheel is suspended in a channel beside and below the "saqiya," the stream from which is deflected to fall upon the wheel by means of a small movable conduit of wood, actuated from above by means of a handle, when it is desired to start the mill. The conduit is pushed back so that the water resumes its normal course along the "saqiya" when grinding operations are to cease.

The corn to be ground is placed in a receptacle, or "hopper," H, of wood or plaited halfa-grass in the shape of an inverted cone, which is either fixed to the wall or suspended from the roof of the mill-house so that its open apex is very nearly above a hole in the centre of the upper, or revolving, millstone. From this open apex a short wooden spout or "feeder," J, projects at right angles, so that the grain passing through it falls into the hole in the centre of the upper stone and so finds its way between the two stones by which it is ground into flour.

One end of the "feeder" is loosely attached (often by means of a piece of leather) to the apex of the corn receptacle, H, its other end being suspended over the hole in the stone by strings attached to the side of the receptacle above it. To this "feeder" is fixed one end of a small horizontal rod, K, the other end of which is loosely attached to the masonry surrounding the apparatus, while to the horizontal rod is lashed another stick, L, a knob at the opposite end of which rests upon the upper grindstone.

As the stone rotates it causes this stick to tremble, the oscillation being imparted by the horizontal rod, K, to the spout, J, the regular movement of which causes the grain to drop continuously little by little to be ground between the stones. This simple water-mill is obviously a direct descendant of the hand-quern already described, but it does not appear to have originated in the same country.

Bennett and Elton ascribe to one of the three Greek poets named Antipater the first reference in literature to a water-mill, about a century before Christ, and they point out its subsequent common use in Italy, whence, no doubt, it spread in its early days to the Roman dominions of North Africa. Its employment has extended, like that of the quern, to widely separated countries of the Old World, so that the type existing among the Shawiya is, or has until recently been, in use in Scotland, Ireland, and Scandinavia (where it is known as the Norse or Northern mill), in the Carpathians, Bosnia, Lebanon, Carmel, and in western China.

Not only is the mechanism to be found in these countries almost exactly identical with that of the Shawiya mill, but the description of a mill-house in Shetland, quoted by Bennett and Elton from Hibbert's *Shetlands* (1822)—a "low shed of unhewn stones stretching across a diminutive streamlet over which it was possible to stride"—might just

as well have been written with reference to any mill-house existing in the Aures to-day.

From the two or three examples of primitive machinery and of time measurement referred to above it will be apparent that Roman influence, having crept into the Aures more probably in the piping times of peace than in the wake of an army attempting the conquest of the massif, has left a mark upon certain aspects of Shawiya culture which in the lapse of twenty centuries has scarcely commenced to fade.

In the secluded valleys of the hills, however, arts may now be observed in practice which have persisted in this cultural island with little or no modification from times of far greater antiquity still. One of the most readily noticed of these is the manufacture of hand-made pottery.

The art of pottery-making without the aid of a wheel is carried on by the Berber women of many localities in Algeria, that produced by the Kabyle tribes of the coastal mountains to the south-west of Bougie having attracted considerable attention from archaeologists. In the *Journal of the Anthropological Institute* for 1902 Professor J. L. Myres, in a paper dealing with this Kabyle pottery, after remarking that the potter's wheel was known in Carthaginian Africa "at least as early as the seventh century B.C.," goes on to say, "The pedigree, therefore, of the Algerian hand-made fabrics may probably be traced back at least to the ninth or tenth century B.C., on the evidence of the mode of manufacture alone."

Now the Kabyle pottery is more varied in form, of superior symmetry and workmanship as well as far more elaborate in its painted decoration, than the rough ware manufactured to-day by the Shawiya women.

It seems probable, then, that a glance at the potter of the Aures, as she moulds her clay in the sunshine before the low doorway of her hut of untrimmed stone, may reveal to us a vision of the occupations of her ancestress in days before the dawn of history.

Almost all the women of the Aures are more or less skilled in pottery-making. In most places they manufacture the dishes, pots, funnels for filling goatskin bottles, bowls, etc., which they require for use in their own households; in villages near the edge of the Sahara, however, a certain amount of pottery is made for sale to the tent-dwelling nomads of the plains, who can find no suitable earth in their desert land. Before the War pots were bartered for their fill of dates, a staple food which the high valleys of the Aures cannot produce.

Upon a warm sunny morning, when the ground is dry, the Shawiya women go forth to dig the necessary clay in the neighbourhood of the village, passing it through a form of sieve before carrying it home in baskets. The clay used is of a yellow colour.

Arrived before her cottage door, each woman places before her a wooden dish turned upside down, or a flat piece of an old halfa-grass basket, and moistens her clay with water from a bowl at hand. In some

areas, such as the valley of Bu Zina in the north-western corner of the Aures, or the Rasira cañon in the south central portion of the range, a small quantity of powdered potsherds is mixed with the earth for the making of new vessels; in other areas, for example at Beni Ferra, the clay is said to be too "good" to require this admixture (Fig. 7).

The woman then kneads her moistened clay upon the dish or basket into the circular form of, let us say, a large flat dish destined for the preparation of unleavened bread. Having kneaded out the bottom to



FIG. 7.—Pottery-making at Beni Ferra.

the thickness she requires, she digs with her thumb a shallow trench just within its circumference into which she places the strips of clay intended to form the side of the vessel. This clay she applies in three strips, measuring each, for length, by the diameter of the bottom she has prepared.

This done, she carefully smooths over by hand the inside of the dish and the outer side as far as it can be reached without raising the moist clay from its resting-place; she then places it, "base" and all, in the sun to dry. When nearly dry she polishes its surfaces with a snail's shell or a smooth round pebble.

In some areas, such as Beni Ferra, in which suitable material can be found, a layer of red or rose-coloured earth, known as "iwenken," powdered and mixed with water, is applied to the pots when dry, in order, it is said, to strengthen them ; but often, even where this earth is plentiful, panels are left uncovered by it on the pots, which panels are sometimes decorated with rough designs.

In many districts, however, earth suitable for this purpose cannot be found. It is used at Beni Ferra, and in a few other villages, as a pigment, applied by means of a doubled straw, to produce decoration in herring-bone, criss-cross, square, or cross patterns upon the panels which, as noted above, are left upon some pots for this purpose ; each pattern having its own name and, possibly, a very ancient signification, such as the sign of the early Egyptian goddess Neith which, as I have pointed out in the *Geographical Journal* (January 1922), may perhaps be discernible in one of them. The original meaning of these primitive designs is, however, extremely difficult to ascertain, for the Shawiya, having long since embraced the faith of Islam, are of course quite ignorant on the subject.

When the necessary number of pots, bowls, and dishes have been made several women combine to bake their wares together.

Making a heap of stones, they place their sun-dried pots upon its summit and around its sides, laying the smaller vessels upon the stones and covering them with the larger dishes. They then cover the whole with brushwood, old halfa-grass sandals, the sweepings of their houses, etc., to which they set light and replenish for the space of from one and a half to two hours, at the end of which time the pots are considered to be sufficiently baked.

Beneath the slopes of the Jebel Shershar, the eastern bastion of the Aures, an artificially prepared fuel is sometimes used for pot-baking, consisting of cakes of dried dung and earth, the slow burning of which is held to be very suitable for the purpose.

When baked, the pots are removed with the aid of sticks and, while still too hot to be touched by hand, are varnished with a substance known as "luk," a raw shellac, or with the gum of *Juniperus oxycedrus*, the former imparting a deep red and the latter a yellowish-green colour to the surfaces so treated. As a rule only the interior of the vessels and the upper portions of their outside are so covered with varnish.

Though all the pottery manufactured by the Shawiya is extremely primitive in form and workmanship, that made in the vicinity of the Jebel Shershar appears to be more crudely fashioned and to exhibit less variety in design than that of the western valleys of the massif. Yet in certain villages of the Jebel Shershar we found a rudimentary attempt at applying to some vessels a white "slip," or outer covering, which may well afford us a glimpse of the earliest efforts of those Kabyle potters who, for untold centuries, have applied such a "slip" to some of their wares in a form which, though considerably more perfected than that found in the Aures, has been considered by Professor J. L. Myres

(*Journ. Anth. Inst.*, 1902) to resemble certain Neolithic pottery of Sicily.

In the Jebel Shershar the material used for this "slip" is powdered gypsum, to be found in many areas of the Aures; but it is so roughly applied that it soon wears or crumbles away from the pot. Indeed, the unsuitability of the material may perhaps, in addition to the conservative nature of the Shawiya, supply a reason why the covering of pots with a white "slip" has not advanced beyond the very rudimentary stage in which we found it beneath the slopes of the Jebel Shershar.

The foregoing notes upon the pottery made by the Shawiya women will have shown that we were able during our wanderings to observe the



FIG. 8.—The village of Maafa.

occupations of the gentler sex as well as those of the men. This was due to the presence of my wife. It is perfectly true that the Shawiya women are not concealed from view to the same extent as their Arab neighbours of the desert oases; they do not veil, and they pursue their everyday occupations in view of all beholders. Their position, in fact, is one of considerably greater freedom than that of the Arab women.

Nevertheless they are Mohammedans and, as such, the more respectable among them can scarcely be expected to converse freely with a male stranger travelling alone, though the very numerous *divorcées* and dancing girls of the Wad Abdi valley would have little compunction in so doing. The presence of my wife, however, who was the first European woman many of the female inhabitants of the remoter villages had seen, filled them with a curiosity which enabled us to become

friendly with them and to observe in detail many of their arts and crafts.

Their daily round is one of toil. Every moment which is not occupied in such duties as carrying heavy goatskins full of water from the brook to their eyrie-like villages among the crags overlooking the valley (Fig. 8), cooking, grinding corn, washing clothes, making pottery, tanning goatskins, making mats of halfa-grass, weeding their little fields, etc., is spent in the spinning of wool and weaving it into garments for the male members of the family upon a very primitive vertical hand-loom, in the use of which every woman of the Aures is well skilled. Thus it will be seen that, although the men find ample leisure for consuming immoderate quantities of coffee in the little cafés to be found in all the larger villages, the women have but little time for distractions.

Distractions, indeed, are few and far between in the hills, and consist solely in dances, usually performed by professional *danseuses*, at weddings or at the various annual feasts, of which several are observed by the Shawiya. Some of these feasts date from their adoption of the faith of Islam; the origin of others is by no means clear, but though now believed by the natives to form part of the ritual of their new creed they are evidently of much greater antiquity.

The music at these feasts is provided by hautboys and tambourines. It is, perhaps, curious that in the Aures hills the bagpipes are not to be found, save very rarely in the hands of a strolling musician from the plains; in the desert, however, the piper, hailing usually from Tripoli or Morocco, is by no means rare.

His instrument is primitive enough. It is composed of a bag of tanned goatskin, a mouthpiece consisting of a reed fitted into the leg-bone of a heron or flamingo, and twin pipes of bamboo, each perforated with four holes for stops and capped with the tip of a cow's horn, from which is usually suspended a written charm enclosed in a flat silver case. Bu Shkeywa, as the piper is termed, is greeted with delight in an oasis, and many an Arab who served France during the War has told me with what joy and astonishment he heard a somewhat similar instrument when he first beheld Scottish regiments at the Front.

As may well be imagined, a people who find it necessary to protect their musical instruments by means of charms do not neglect to provide their persons with similar protection.

The Shawiya are by no means less superstitious than the Arabs. Accordingly scribes who prepare written talismans and foretell the future with the aid of ancient magic books, sorceresses, and diviners all prosper greatly among the Berbers of the Aures.

Dread of the "evil eye" induces the hill folk to provide themselves, their animals, and their property with an enormous variety of charms. Of these the silver representations of the human hand with extended fingers (so commonly worn by the women all over Algeria) and the gleaming white skull (or, sometimes, merely the jawbone of an animal) to be seen suspended from fruit trees and the roofs of houses are but a couple of

examples. Magic and the wearing of charms, too, are very extensively employed for the prevention and cure of diseases, nearly all of which are popularly supposed to result from the machinations of some evilly disposed demon or "jinn." Thus, for example, women are to be found wearing the body of a scorpion enclosed in a reed to frighten away from an expected infant the "jinn" which has caused their previous children to perish at their birth, and the heads of chameleons, pieces of iron or



FIG. 9.—Shawiya women wearing silver charm cases.

copper, or packets of evil-smelling asafoetida are hung upon the person to protect the wearer from the attacks of the demons of disease.

At the foot of the Aures trachoma is magically treated as follows : A scribe skilled in the magic art writes certain words believed to be drawn from the Koran upon a piece of unlined paper, using a mixture of saffron and rose-water as his ink, and leaves the paper for one night exposed to the light of the stars. Next day the writing is washed from the paper in water, and this water, mixed with saffron, is used for the writing of further magic words between the hours of nine and ten in the morning. Upon the following day, at the same hour, the paper is enclosed in a fragment of the skin of a gazelle which has been killed by

the cutting of its throat in the name of Allah, the orthodox Mohammedan fashion, and the charm is worn attached to the right upper arm of the patient.

This custom appears to be a curious mixture of religious belief and sympathetic magic, for doubtless the beauty of the gazelle's eye was originally supposed to influence the disfigurement of trachoma.

Sympathetic magic, too, may well be the reason underlying the custom of some Shawiya mothers of taking children who are late in talking to a water-mill, such as I have already described, and causing them to drink of the spray which flies from the revolving wheel, doubtless confident that the roaring of the wheel may exert some influence to break the silence of the children.

In an area in which magic is thus regularly resorted to in order to combat disease, the traveller may well be astonished to find not only

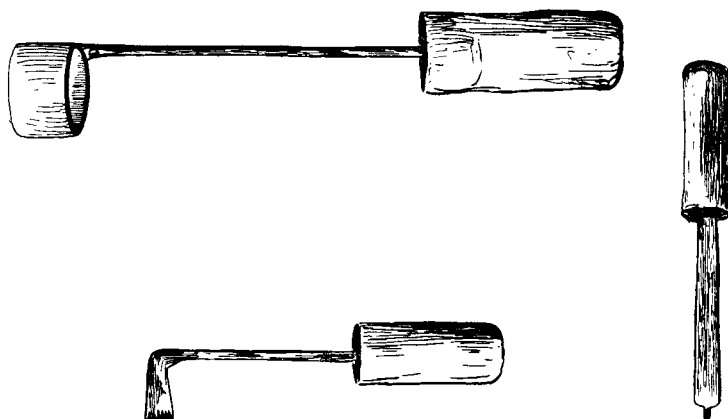


FIG. 10.—Shawiya surgical instruments: upper figure, trepanning scalpel; lower, trepanning saw; to right, trepanning drill.

real surgery of a very remarkable if primitive kind, but also a genuine medicine carried on by families in which these arts have been handed down from father to son, by oral tradition, for many generations past. Yet such families are to be found, not only all over the Aures massif but in the tents of the Arab nomads in the plains beneath the hills.

It has been known for many years that surgery is practised by the Shawiya of the Aures, for individual natives bearing scars resulting from operations, particularly from trepanning, have frequently been observed by French administrative officers. Under French law, of course, the performance of an operation by a native not possessed of the necessary French qualification is prohibited, and the person contravening this law must necessarily be held responsible in the event of his patient's death. In these circumstances the Shawiya surgeons of the Aures have taken every precaution to prevent their identity from being disclosed to the authorities and to cloak their art with a veil of the deepest secrecy.

A detailed study of their methods, therefore, has for long been impossible. By a stroke of rare good fortune I was able, shortly after commencing my ethnographical researches, to make friends with a native surgeon of wide reputation, and later, when it was discovered that I could be trusted not to betray the names of my informants, I gradually became acquainted with many, if not all, of the best reputed practitioners in the hills.

From them I gleaned a very considerable amount of information as to their methods, some of which I have described before the History Section of the Royal Society of Medicine (*Proc. Roy. Soc. Med.*, 1920, vol. xiii.), and in my recently published *Arab Medicine and Surgery*. This information, with the ocular proofs which I was able to obtain, clearly shows that not only is trepanning successfully performed by the natives, but that bone taken from freshly killed animals is inserted in limbs in which bone has been shattered by, say, a gun-shot wound, and intricate operations are performed upon the eye.

All this is carried out without the use of anaesthetics, and with a disregard of surgical cleanliness which causes the European observer to marvel at the success which is undoubtedly attained. With regard to trepanning, it is remarkable in a land of superstition such as the Aures that the reason for the operation is the practical one of removal of bone damaged by a blow, and *not* a magical attempt to release a harmful demon supposed to be enclosed within the skull, as, I believe, is the case among certain peoples of the South Seas.

The fairly detailed examination which I was enabled to make of surgery and medicine in the hills appears to indicate beyond doubt that these arts, as now practised, crept into the Aures from without in the Middle Ages and that they represent survivals, probably but little altered in the lapse of time, from the healing art of the great Arab practitioners of the thirteenth and subsequent centuries. This view is supported by the Arabic books upon medicine which many Shawiya possess, though certain of their most successful doctors are quite unable to read them. Thus we find in the hands of Berber doctors the works, in manuscript or in the form of reprints obtained from Tunis, of such mediaeval authorities upon the healing art as Ibn el Beitar, the son of a Moorish veterinary of Malaga in Spain, a thirteenth-century botanist and pharmacologist whose extensive travels in Barbary and the East enabled him to add a number of items of materia medica to those which he borrowed from the Greeks, especially Dioscorides and Galen, for the compilation of his work on *Simples*, and the Sheykh Daoud ben Omar of Antioch, a famous writer of works upon medicine who lived in the sixteenth century.

To the mediaeval Arab savants, therefore, must, I think, be attributed the medicine practised in the Aures to-day. The modern Shawiya doctor is a skilled and experienced botanist, collecting the greater part of his material from the plant-life of his native hills, though some drugs and dried herbs he is compelled to purchase secretly from native traders in such centres of civilisation as Biskra or Batna.

Of more than one hundred and seventy specimens of their *materia medica* which we collected (with their uses), and which have been identified in England, at least one hundred and twenty consist of herbs or substances obtainable in the Aures.

I found that several doctors of the mountains were in possession of an apparatus of which I have as yet been unable to trace either the origin or the approximate period of its introduction into the Aures. I refer to a small and primitive form of "still," of which I was lucky enough to obtain a specimen. It had been secretly made in a large town to the order of a practitioner from the hills, who caused it to be copied in tin from a copper specimen, now damaged, which had been handed down to him by his uncle. Both the receptacle for containing the *materia* to be distilled and the condenser are of the same metal, and the apparatus, which when in use is placed upon an earthen bowl containing a charcoal fire, appears to be well suited for the distillation of such material as the Berber doctor requires; for example, for the preparation of a distillate of the plant *Artemisia herba alba*, much esteemed by the natives as a digestive.

From the very few examples which I have endeavoured to describe in the space of a short paper on the arts, crafts, and superstitions of the Shawiya as these may be observed to-day, the conservative influence of the geography of the country upon the culture of its inhabitants is, I hope, clearly revealed.

When once an art or craft or custom, doubtless at first regarded as an innovation to be treated with suspicion, has been allowed during the progress of the ages to pass the forbidding outer barriers of the massifs and to take root among the mountaineers, that art, craft, or custom seems to have flourished to this day in the form in which it was originally introduced. For the recurring periods of conquest which have convulsed North Africa, sweeping away so many traces of the past from the fertile areas of Algeria, have failed to overwhelm the culture of the Shawiya in their secluded and almost inaccessible valleys beneath the towering Aures crags.

In conclusion I should like to offer my very grateful thanks to the French officers and officials in Algeria, to whose kindly co-operation and assistance are largely due any results which our researches may have yielded.

Instructed by their Government to facilitate as far as possible our various expeditions, these gentlemen have interpreted their instructions in so liberal a sense that difficulties vanished from our path as if by magic, and we have become indebted to all the military and administrative officers with whom we came into contact for innumerable acts of kindness and hospitality for which it is difficult adequately to express our gratitude.