

Some enigmatic stone artifacts of the Eastern Sahara: "rondins de pierre"

Introduction

During Saharan travels whose object was not the documentation of lithic industry I have seen a number of long stone rods, generally occurring in seeming connection with grinding equipment thought to be Neolithic (Clark, 1973: 283; Smith, 1980: 455), especially in a Tenerian context. Tenerian industry is not seen as being found to west of Aïr (Smith, *op. cit.*), i.e., in the "Ténéré de l'Ouest", although stone rods lie abandoned both there and in the Ténéré Tafessasset to eastward of Aïr. Some works written in the first half of this century hardly mention them: it seems that larger numbers have come to light with the advent of modern cross-country vehicles. Tourists normally on the lookout for projectile points can easily spot such large conspicuous objects.

A future paper could be devoted to distribution zones, once it has been possible to ascertain whether regional shapes occur: I thank J. D. Clark for a suggestion along these lines. Uses of varying shapes remain to be determined, if indeed all were functional. The wide geographical dispersion of material currently renders its laboratory inspection problematical, however vital this may be. I should welcome constructive comments on the terminology here used, whose inadequacy is apparent: news of further finds would be gratefully received. Lack of space prevents the inclusion of all bibliographical references known to me.

French terminology

The word "pilon" means pestle and has been widely-employed hitherto: I shall use it, as well as "ronde-bosse" (R-B), when French-language texts render this desirable, otherwise preferring the expression "rondin de pierre" (RP) suggested by Gast (1965). "Pestle" will only be written when its use as such seems beyond doubt.

Typology

A provisional list of three main types of RP:

Type 1: "Oval-ended" (Fig. 1 : 6). Relatively symmetrical and well made: one or both ends oval in shape.

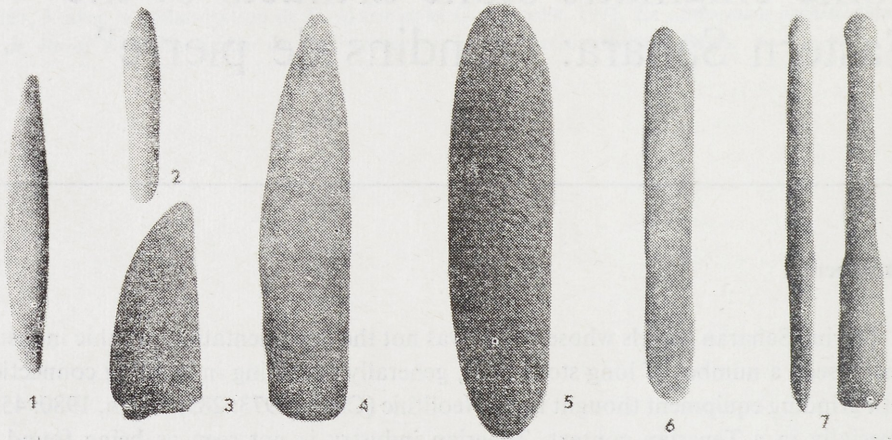


FIG. 1. "Rondins de pierre"

1 - 2: Type 3; 3: A fragment seen in Qued Igharghar, Tefedest; 4: An object seen in Mauretania, between Choum and Nouadhibou (Pk. 318); 5: An object seen in Timersoï, Niger (Cf. Fig. 4); 6: Type 1; 7: An interesting model from Tibesti (after Jackel)

Type 2: "Blunt pencil" (Fig. 2). Relatively symmetrical, probably the thinnest of all known types. Very well made in general. One or both ends shaped something like a very blunt pencil, whose "point" may be off-centre, as well as like a "knife-edge". Cf. Savary (1965: Fig. 2. Nos 4, 5 and 8 and page 233).

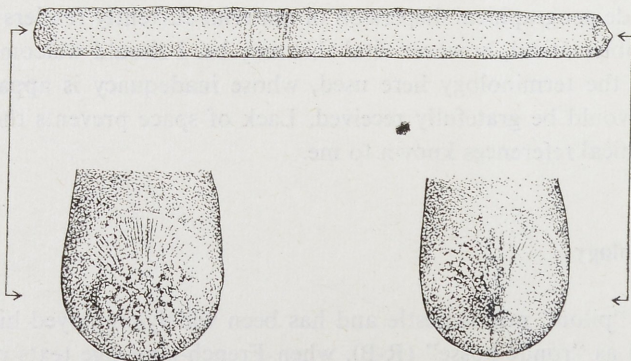


FIG. 2. An unusual Type 2 model. Each end is different. Length 77.5 cm (after a drawing by W. Godwin)

Type 3: All other shapes (Fig. 1 : 1 - 2). Basically asymmetrical and ungainly. In an unfinished and/or eroded state this appearance may be enhanced.

Further finds may enable the formulation of others in due course.

Inventory

The evident need to compile an inventory of specimens is hindered by lack of precise information and descriptions can prove bewildering. Gast (1965: 319 - 324) publishes a list of sixteen RPs in the Bardo Museum, Algiers. Camps-Fabrer (1966: 252 - 255), apparently not mentioning Gast (1965) bibliographically, nor RPs in her index, publishes some "pilons" also in the Bardo, which I cannot so far equate with those of Gast. One of her "pilons" is shown, only a few pages earlier, as a "sculpture en ronde-bosse... representing a woman dressed in veils or a phallus?" (1965: 252 and Pl. XVIII: 1). Dubief (1947: Pl. II and 189 - 190) previously described the same RP as being very like a short "pilon" adding that some "similar objects" (not illustrated) had been found in 1928... in the eastern buttresses of Mt. Gréboun (Aïr) and in the Tassili-n-Ajjer (S. E. Algeria).

Terrain in which found

Maître, who has spent much time on foot, believes that RPs are absent or rare in the massifs, being for some obscure reason more typical of cultures of the low zones like Tanezrouft, between S. Algeria and N. Mali, and Ténéré Tafessasset, Niger (1972: 135). On the same page he notes that a good R-P makes an excellent sugar-hammer, being picked up for this purpose, then lost further on. (If tea and sugar were introduced only in the last few centuries, then numerous R-Ps may have travelled away from their ancient sites quite recently; Cf. Gast (1965: 324) on modern use in Ahaggar). In an older context, Camps (1974: 249) sees some Tenerian querns having notched edges to facilitate their transport on ox pack-saddles. Why should un-notched querns and RPs not also have been moved around, especially when Gabriel (this volume) knows of portable hand mills and grinding stones hundreds of kilometres distant from formations from whose sandstone or volcanic rock they could have been manufactured?

Material

Suggestions seen hitherto seem to imply quartzite, sandstone or volcanic rock as favoured material, especially the former (Gabriel, 1977: 45; Gast, 1965: 313).

Countries where found

Algeria, Chad, Mali, Mauritania, Niger. B. Barich informed me (September, 1980) that she has seen none in the Libyan Tadrart Acacus, though F. de Carranza y Manzano verbally reported (1974) seeing objects roughly similar to that shown in Fig. 1 : 4, within former Spanish territory.

Age

Though various authors clearly consider this as "Neolithic", I am aware of only one case where some estimate of age has been possible, anyway in respect of an apparently non-typical specimen (Jaekel, 1978: 329) and suggested as lying between 4,000 and 3,300 B. P. (Fig. 1 : 7). A camel carved upon another RP, at right-angles to five further carvings on the same artifact (Aumassip, 1973: 33) suggests that the camel, if not the RP itself, was produced around the time of Christ or later (Fig. 3).



FIG. 3. Carved type "Rondin de pierre" (after Aumassip, Trécolle and Vimont-Vicary)

Dimensions

A very few dimensions and weights are given in Table 1.

The true pestle

This seems to be attested in Palestine around 15,000 years B. P. (Ronen, 1976: 68). The apparent oldest mortar, with its pestle, is illustrated by Stekelis and Bar Yosef

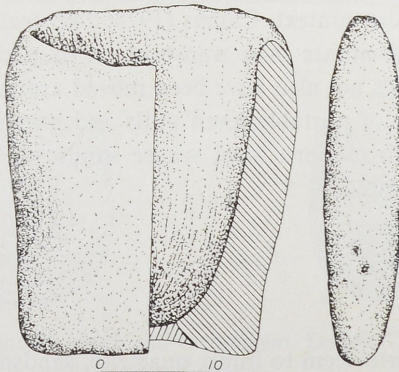


FIG. 4. Palestinian pestle and mortar (after Stekelis and Bar Yosef)

Table 1

Dimensions and weights of "rondins de pierre"

Type	Zone	Length	Width	Circumference	Weight	Author
1	"Tamrit" "Bardagué" Tassili-ouan-Ahaggar	53.6 cm	—	18.3 - 19.3 cm	2,100 g	Amassip (1973 : 32)
		98.8 cm	5 - 5.5 cm	—	5,035 g	Gabriel (1977 : 45)
		30.5 cm (61 cm)	ca 7.5 cm	22 cm at estimated centre	2,415 g (4,830 g)	Unpublished. Fragment only ¹
2	W. Ténéré (Taf)	77.5 cm	6.25 cm av.	—	5,470 g	Unpublished. Weight calculated by W. Godwin. Two rings to left of centre. LH end may be non-typical (Fig. 2)
		75.5 cm	6 cm av.	18 - 18.8 cm	—	Origin "unknown". Unpublished
		71.5 cm	8.1 cm av.	—	—	Origin "unknown". Unpublished
3	W. Ténéré (Taf)	65 cm	6 cm av.	17.5 - 18.5 cm	ca 3,820 g	Unpublished
		ca 59 cm	—	—	—	Seen near railway km 318. Unpublished (Fig. 1 : 4) ²

¹ Since this object seems to be broken at its rough centre, to judge by circumference, figures in brackets show the possible total length and weight, assuming relative symmetry.

² The weight of this object, whose dimensions are ca 60 cm long by 12.3 cm wide at lower end, is likely to exceed that of any others listed in types 1 and 2 above. Cf also Fig. 1 : 1 - 2. What sort of human could wield either as a pestle?

(1965: fig. 4): the pestle is 30 cm long, while a further pestle, larger though broken, was found nearby. The bottom of the mortar was thought to have been holed during use (Fig. 4).

From the Ténéré Tafessasset (Adrar Bous III) are reported two stumpy Neolithic pestles (Tixier, 1962: 342 and Fig. VIII), whose length probably does not exceed 15 cm. Their function as pestles appears probable: of the "broyeur" of Dalloni (1935: Fig. 63.a). Meanwhile the use of wooden pestles and mortars is shown in Ahaggar to-day (Gast, 1965: 311 - 313; 1968: 344 - 350), while their occurrence in the modern Sahel is too well-known merit comment. I have a picture of similar equipment in Sahelian use in 1807, though I have been unable to trace it further back in the time available (October 1980). The principal function of a pestle seems to be twofold (Gast, 1965: 313): to transmit a violent perpendicular blow to a substance which yields or to place a pestle on the substance to be treated and then to rotate the pestle in conjunction with the use of some oblique pressure.

Grinding

It is recorded that "in Neolithic times... man enlarged the friction surfaces on pestles... and plaques... giving higher efficiency in terms of quality and time of work (Semenov, 1976: 200). Disregarding the term "pilons broyeurs" of Bessac (1951: 33), used in an apparent protohistoric context in Mauritania, the action of "broyage", using a "meule" and "molette", is illustrated by Gast (1968: Pl. LIX and Fig. 23). A further action and one which might fit the idea of RPs of types 1 and 2 being used something like modern rolling-pins, is described by Hugot (1963: 116) as "a combined movement of pressure and rotation (rolling) of an elongated stone cylinder"; cf. the object in Fig. 4. Might it, notwithstanding its short length, prove as efficient, and easier to use, as a type 2 or type 3 RP?

"Abnormal RPs"

The object shown by Jaekel (1978:329) may be unique (Fig. 1 : 7). Its finder mentions the problem of not knowing whether to identify it as a digging-implement, a club or a wand of office; cf. a "large hoe made of dolérite", 36 cm long, whose sharp end is something like that of the above example: here, however, the likeness ends. The "hoe" is from sub-Saharan Fangala, Mali (Vaufrey, 1969: Pl. XVII, XVIII).

The writer saw in Oued Igharghar (Tefedest) the object illustrated in Fig. 1 : 3, whose end is like the front part of a rough shoe. From its diameter (9.5 cm) and general dimensions, one may postulate a probable total original length, before breakage, of some 40 cm, if this does not represent too conservative an estimate. I think that an artifact this long, even if tapering at the oposite end, like that shown by Vaufrey could prove to be quite heavy.

Some opinions and some problems

- Dalloni (1935: 191 - 192) illustrates a fragment of a large "pilon", going on to say that similar objects are known throughout the "Soudan", where the inhabitants still use them to crush grain in their stone mortars. It has not proved possible to find further references to such equipment; Cf. Gast (1968: 314, note 1) and Morris and Milburn (1977: 143) on deep cylindrical shafts in rock surfaces, not proven to be worked by RPs. However, there have been numerous objections to the use of long stone rods as antique pestles: a non-exhaustive list might include the following:
- a) A stone "pilon" would smash a stone mortar or vice versa. Stone mortars have not been found,
 - b) Even wooden pestles break up a wooden mortar eventually (Gast, 1968: 315),
 - c) A functional object like a "pilon", once decorated, becomes an artistic and cultural object, even an idol (Camps-Fabrer, 1966: 277). The decoration involved is given as the carved head of a bull or sheep or a line of cup-marks,
 - d) Savary (1965: 231) remarks that decoration on the end of a "pilon" would be spoilt, were it to be used as a pestle. Camps-Fabrer (1966: 276 - 277) cites H. Lhote's preoccupation with the idea that some Post-Neolithic Saharan inhabitants even to-day smash objects, due to superstitious fear of "ancient idols", adding nonetheless that inspection of such finds indicates — to judge from the patina — that the breakages are not recent; cf. remarks above on the suitability of RPs used as sugar-hammers, noting also the probable difficulty of smashing one found in a sandy waste devoid of other stones. Some locals I met in 1979 possessed a fine type 2 RP which they wished neither to smash up nor to dispose of. A secondary use of long pieces of RPs as head and/or foot stones on Islamic graves is reported in Mauritania (J. Spruytte, personal communication) and I have seen it in Oued Igharghar, Tefedest,
 - e) Three cases of one apparently similar form of breakage have been noted, each involving a long splinter of stone from a RP. Gast (1965: 321) attributes his example to a violent blow, though noting elsewhere (1965:317 - 318) the supreme unsuitability of RPs for use as pestles. Aumassip, Trecolle and Vimont-Vicary (1974: 169 - 170) state that the lower face of their broken part is less-patinated than the remainder (Fig. 5 : 1). The third example was shown to me near Frankfurt am Main, the splintered part extending well over half the total length of the RP, or about 27 cm, though it seems not to affect the end of this artifact, as in the two previous cases. Without being able to suggest any explanation as to the cause or shape of these breakages, an interesting wooden utensil is shown by Gast and Adrian (1967: 29), known as "aséroui" and used for stirring millet (Fig. 5 : 2).
 - f) Various shapes shown by Savary (1965: 232) can be noted elsewhere. The notch on his No. 2 may be a mint example of others I have seen on type 3 RPs, all very worn. His Nos. 4,5 and 8 all come within the limits of features already mentioned:

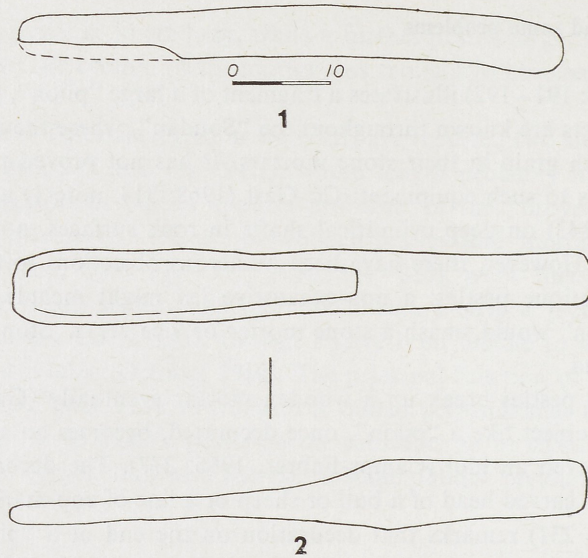


FIG. 5. 1: A splintered "rondin de pierre" (after Aumassip, Trecolle and Vimont-Vicary). 2: Aséroui. Length 40 cm (after Gast and Adrian)

his curved No. 6 can be compared with one from Tibesti (Gabriel, 1977: 45). I have seen a photo of a RP with a set of cup-marks in line (cf. his No. 3, also Camps-Fabrer, 1979: 26): it should be ascertained whether such cups are decorative or functional,

- g) The observations of Gast (1965; 1968), on archaic RPs and modern pestles respectively, merit detailed scrutiny. Notwithstanding the evident unsuitability of RPs for use as pestles, it is recorded (Aumassip, Trecolle and Vimont-Vicary, 1974: 174) that J. Tixier concluded that the ends of their RP were used to crush grain. They qualify this by adding that their own study of the ends of all the RPs described by Gast (1965) indicate that the majority are not the same as their own, it being sometimes difficult to determine whether markings are caused by use or by their having been hammered.

Conclusion

While agreeing with Gast (1965: 317) on the comparative rarity of "pilons", it may be that many more than those studied, far less mentioned in print, were known to "sahariens" of the first half of the century, who may not have felt it necessary to report them; cf. Dubief (1947: 189): "these pilons found so frequently in the Sahara". Tourist activity may soon make further examples available. It remains to determine the exact characteristics of differing types, as well as their possible use(s). My future

experiments show that, while the first main use of a pestle proposed by Gast (1965: 312), that of transmitting a violent perpendicular blow, is unacceptable in respect of RPs, there may be grounds for accepting the suitability of some types for the second rôle he suggests, namely that of placing a pestle on the substance to be treated and then rotating it in conjunction with oblique pressure?

To end on a note of caution, the words of Maître (1972:135), some of whose remarks appear to attract adverse comment from Camps (1975: 130), express admirably our present lack of knowledge: "A ce sujet, vouloir identifier à tout prix un objet préhistorique me paraît être une démarche bien périlleuse, souvent d'ailleurs à l'origine d'interminables querelles entre spécialistes"¹.

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