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Résumé

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OF STORAGE AND NOMADS THE SEALINGS FROM LATE NEOLITHIC SABI ABYAD, SYRIA

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Abstract : *Recent excavations at the late Neolithic site of Tell Sabi Abyad in northern Syria have yielded hundreds of clay sealings in well-defined contexts. It is argued that these sealings facilitated the communal storage at the site of all kinds of products and claims by a nomadic population of considerable size. In this respect, the sealings are indicative of the symbiosis between the sedentary and nomadic populations in the Late Neolithic.*

Résumé : *Les fouilles récentes sur le site néolithique récent de Tell Sabi Abyad, Syrie du nord, ont révélé des centaines de scellements en argile. Nous argumentons que ces scellements ont facilité à Sabi Abyad le stockage communal par une population nomade très étendue de toute sorte de produits et de créances. Aussi considérons nous que les scellements sont les témoins de la symbiose entre les populations sédentaires et nomades du Néolithique Récent.*

Key-words : *Sabi Abyad, Syria, Late Neolithic, Sealings, Storage, Nomads.*

Mots clefs : *Sabi Abyad, Syrie, Néolithique Récent, Scellements, Stockage, Nomades.*

INTRODUCTION

The excavations at the five-hectare site of Sabi Abyad, located in the Balikh valley of northern Syria, have revealed a continuous sequence of eleven superimposed and generally well-preserved building levels dated between ca. 5,700 and 5,000 B.C. (6,500-5,800 calBC)¹. Perhaps the most spectacular of these prehistoric settlements is building level 6 or the 'Burnt Village', the earliest of the so-called Transitional levels (6-4), which represent an intermediate stage between the lower, pre-Halaf Neolithic (levels 11-7) and the topmost Early Halaf (levels 3-1)². The level 6 remains, partially standing to a height of 1.40 m, consist of a number of rectangular, multi-roomed houses built of pisé along very regular lines and surrounded by smaller circular structures, ovens and hearths (fig. 1). Some of the tiny rooms had 'normal' but narrow doorways (occasionally with pivot

stones), whereas others had doorways of such restricted size that one had to crawl through them on hands and knees (portholes). In addition, it appeared that some rooms did not have a doorway at floor level at all; these rooms must have been accessible from the roof of the building. The settlement was heavily affected by a violent fire, which swept over the village and reduced most houses to ashes around 5,200 B.C. (6,000 calBC). Vast quantities of *in-situ* finds were recovered from the burnt buildings, including ceramic and stone vessels, flint and obsidian implements, ground-stone tools, human and animal figurines, labrets, axes, personal ornaments and, most excitingly, hundreds of clay sealings. These sealings consist of lumps of clay either pressed on the fastening of a container or closing this container entirely, and most of them carry stamp-seal impressions³. Most remarkably, however, not a single stamp seal has so far been found in the houses of the Burnt Village⁴.

1. In order to adjust our dates to the existing chronological frameworks and our earlier reports (and so to avoid general confusion), all dates are used in a 'traditional' manner, i.e. uncalibrated, in this article. Dates in calibrated years are given between brackets, whenever it seems useful.

2. Cf. AKKERMANS and VERHOEVEN, 1995; AKKERMANS (ed.), 1996.

3. See DUISTERMAAT, 1996, for an exhaustive description and analysis of the Sabi Abyad sealings.

4. So far, stamp seals have only appeared in debris contexts in somewhat later levels of occupation at Sabi Abyad: AKKERMANS, 1993 : 85; AKKERMANS and LE MIERE, 1992 : 10, 21; DUISTERMAAT, 1996 : 339-341.

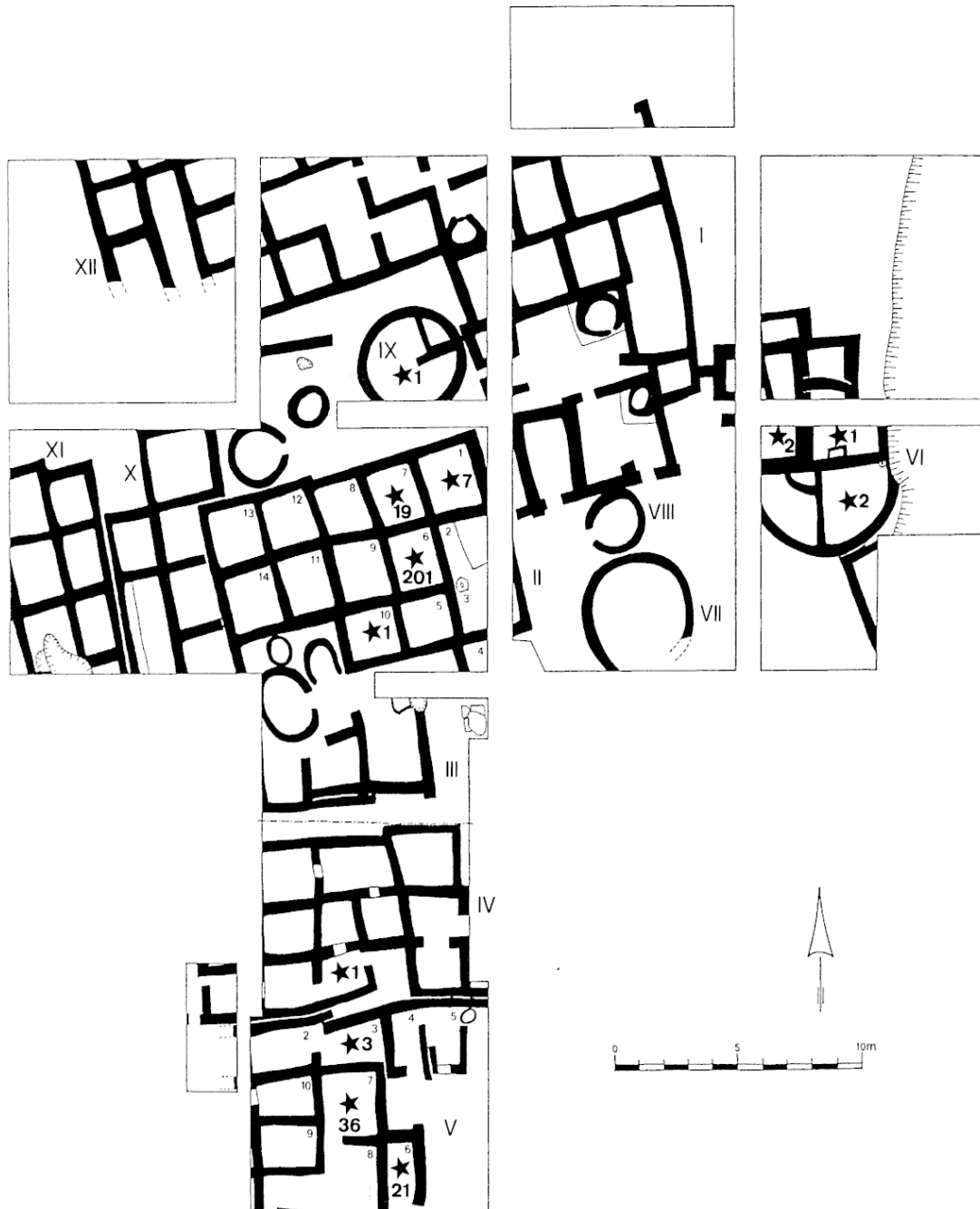


Fig. 1 : Plan of the 'Burnt Village' at Sabi Abyad. Stars and numbers indicate the findspots and amounts of sealings.

Traditionally, glyptic studies in Near Eastern archaeology emphasise matters of iconography or art history. However, in the last fifteen years a shift towards a more functional approach has become perceptible, focussing on the role of seals and sealings in systems of administration and control of

goods⁵. So far, the first (stamp) seal impressions, on plaster, were found at late 7th millennium Tell Bouqras and Tell

5. See e.g. ALIZADEH, 1988; FERIOLI and FIANDRA, 1979, 1983; FERIOLI *et al.*, 1979; FRANGIPANE and PALMIERI, 1992; MATTHEWS, 1989, 1991; ROTHMAN and BLACKMAN, 1990; ZETTLER, 1987.

el-Kowm⁶ but the earliest sealings in clay previously known stem from the final stage of the Halaf period, i.e. from the early 5th millennium B.C., and have been found at very few sites only. Arpachiyah produced 41 sealings (26 of which were found in the TT6 Burnt House, the remainder in debris contexts), whereas 3 examples were found in the trenches in Area A and the Northeast Base at Tepe Gawra and another 40, in a very late Halaf context, at Khirbet Derak⁷. The 300 clay sealings uncovered at Sabi Abyad, in a well-defined stratigraphic and spatial context, date from several hundred years earlier, and have made it clear that the deliberate sealing of products was already extensively practiced in pre-Halaf times.

THE DISTRIBUTION OF THE SEALINGS

The majority of the level 6 sealings has been found in rooms 6-7 of building II and rooms 6-7 of building V. In addition, some sealings occurred in other rooms of buildings II and V, as well as in building IV and the circular structures VI and IX (fig. 1). Two-thirds of the sealings ($n = 201$) stem from room 6 of building II. Actually, the floor of this room (and, to a lesser extent, rooms 6 and 7 of building V) was literally crammed with all kinds of small finds, including miniature vessels, tokens, discs, and human and animal figurines. A similar association of sealings and other items has been attested in one of the structures of the Early Halaf level 3 at Sabi Abyad (building III, room 11)⁸, and appeared at other sites mainly in garbage deposits⁹. However, in view of their location, the Sabi Abyad finds cannot be considered to represent mere refuse nor can the rooms with these items be regarded as dumps; the various objects seem to have been deliberately stored in a few selected rooms and must still have had a certain 'value'. The sealings, mostly broken and in a fragmentary state, were found to have been kept separately from the containers which they had sealed. Particularly in the case of room 6 of building II, measuring hardly 3 m², it is obvious that this room was much too small to contain the hundreds of containers originally associated with the sealings found in this room. The exact meaning of this

association of small finds still eludes us but it has been suggested¹⁰ that the items functioned together in an administrative system, some representing either goods (tokens, miniature vessels and animal figurines) or services (human figurines), others controlling or recording the circulation of these products (sealings, which are the sole pieces of evidence left of whatever transactions had been completed after the opening of the containers).

Interestingly, the sealings differ in various respects from each other per building or per room¹¹. First, it appeared that building II, room 6, and building V, room 6, mainly contained sealings used in association with basketry, while the other structures and rooms predominantly yielded sealings used on ceramics. The preference for a particular kind of container may be related to the storage of specific commodities; if so, it seems that the rooms 6 of both building II and building V were concerned with products different from those of the other structures (or, at least, these buildings stored these products in much larger quantities). Second, most sealings from building II carried stamp-seal impressions, while the other features contained much larger amounts of sealings without impressions; it is not excluded that these latter items, when used on pottery, may have functioned as mere lids instead of as true sealings (this holds in particular for the so-called jar stoppers). Third, the sealings stored in building II showed different impressions from the ones found in the other buildings, although they sometimes showed a similar (but not identical) general type of design (see below); apparently, the various buildings at Sabi Abyad were used by different sealing agencies¹².

THE SEALED OBJECTS

The reverse of most sealings carries an impression of the object originally sealed, which allows determination of the method of sealing and identification of the sealed object¹³. In the case of Sabi Abyad, all sealings are associated with small, transportable containers; no door sealings have been found (in view of the extensive area of excavation and the widespread burning, it seems that negative evidence is significant, and that door sealings were not in use in this village at this time). At least five kinds of containers can be recognised: baskets, plaited mats, ceramic vessels, stone bowls

6. P.A. AKKERMANS *et al.*, 1983 : 356-57 and fig. 42; MARÉCHAL, 1982 : 223-224 and fig. 3-4.

7. MALLOWAN and ROSE, 1935 : 98-99; TOBLER, 1950 : 177; BRENIQUET, 1990 : 165; see also CAMPBELL, 1992; VON WICKEDE, 1990, 1991.

8. Cf. AKKERMANS, 1993 : 304; AKKERMANS (ed.), 1996.

9. E.g. in Bronze Age loci at Abu Salabikh and Uruk loci at Sharafabad; MATTHEWS, 1989 : 94-95; WRIGHT *et al.*, 1980 : 277-278.

10. MATTHEWS, 1989 : 94-95; SCHMANDT-BESSERAT, 1992 : 178.

11. See DUISTERMAAT, 1996, for a detailed account.

12. See DUISTERMAAT, 1996 and tables 5.5-5.6 for a detailed account.

13. See e.g. FERIOLI and FIANDRA, 1979, 1983.

Table 1 : Numbers and percentages of sealings per type of container.

Container type	number	%
basketry	112	37.3
pottery	93	31.0
plaited mats	6	2.0
stone vessels	4	1.3
bags	3	1.0
unidentified objects	72	24.0
damaged reverse	10	3.3
total	300	100

and leather bags (table 1; in addition, some impressions cannot yet be identified while others are damaged). The majority of the sealings is associated with baskets and ceramics, which were sealed in a variety of ways. So far, 18 different ways of sealing have been recognised.

Basketry

Over one-third (37.3 %) of the sealings gave evidence of impressions of coiled basketry (fig. 4 : 3-5, 7-13; fig. 5 : 6), which was widely used in the Near East from very early times onwards¹⁴. The basketry was made of long, narrow strips of vegetal fibres (straw, grasses or reeds) and seems to have been of a fine quality, with the narrow coils very neatly stitched together; the manufacture must have required a considerable amount of time and skill¹⁵. Little can be said about the shape of the baskets, since the sealings only show the topmost rim coils or the centre of the lid. However, it seems that there were at least two different shapes of baskets and lids, i.e. baskets with a flat lid laid upon the container's opening and rim, and baskets with a flat lid sunk into the container's opening (fig. 2). Most containers seem to have had a circular or, less commonly, oval mouth, less than 20 cm in diameter. Impressions of damaged coils (fig. 4 : 12) prove that some baskets had been used intensively before the sealing took place.

14. Compare e.g. the late 7th millennium White-Ware vessels from Tell el-Kowm; MARÉCHAL, 1982, fig. 10.

15. W. WENDRICH, pers. comm.; see also WENDRICH, 1991.

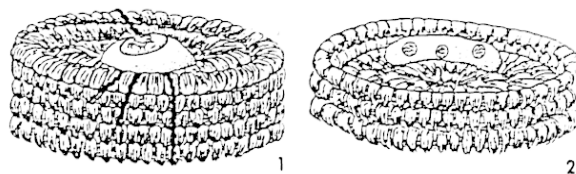


Fig. 2 : Two different ways of sealing basketry at Sabi Abyad.

The Sabi Abyad basketry was sealed in three different ways. The most popular method ($n = 100$) was to close the container with a flat basketry lid fastened with a piece of thin rope (cf. fig. 2 : 1; generally, the ropes were about 1.5 mm thick, spun in Z-direction and plied in S-direction). Subsequently, the sealing was placed on the knot in the rope, near the centre of the coiled lid (e.g. fig. 4 : 4; fig. 5 : 6). The second, much lesser used ($n = 11$), method was to close the container with a flat basketry lid which did not rest on the top of the rim but was sunk into the mouth (fig. 2 : 2). Probably a protruding coil was originally present on the inside of the basket's opening, in order to prevent the lid from falling into the vessel. Subsequently, the clay used for sealing was pressed both on the edge of the lid as well as against the interior of the basket wall, preventing the removal of the lid. Obviously, these sealings never show rope impressions (fig. 4 : 3). The third way of sealing is an exceptional one, attested only once. The sealing represents an oval-shaped clay lid, about 2 cm thick, placed on an oval basketry container while the clay was still wet.

Plaited mats

Six sealings (2 %) were used to seal plaited mats (fig. 4 : 6, 14). The reverses of these sealings show vegetal fibres 1-1.5 cm wide, perhaps the same material as was used for the coiled basketry. These mats may have been used for the production of baskets and bags, or served to pack solid products. Most sealings show rope impressions, indicating that the mats were apparently closed or tied by a piece of rope before sealing.

Pottery

Another third (31 %) of the sealings was used to seal ceramic vessels, showing impressions of these vessels' rim and neck. It appears that mainly small vessels carried sealings: rim diameters vary around 10 cm, and rim thickness varies around 0.5 cm. Ten different ways of sealing pottery can be

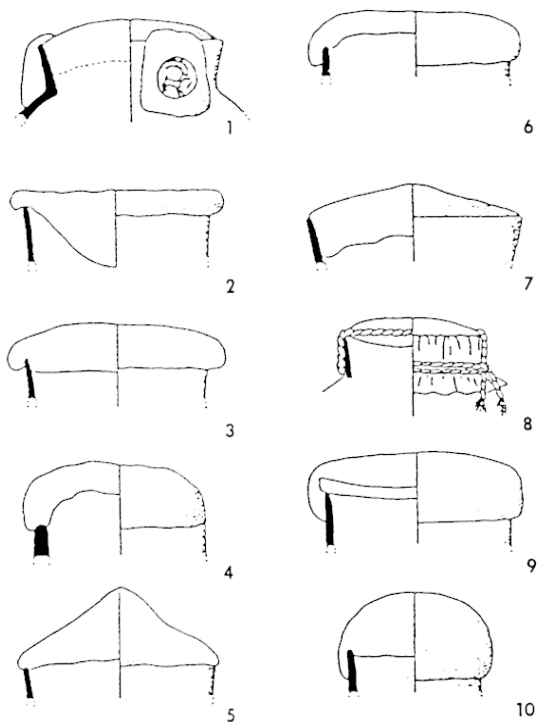


Fig. 3 : Ten different ways of sealing pottery at Sabi Abyad.

distinguished (fig. 3). Many pottery sealings are 'mushroom'-shaped (fig. 3 : 3) : a pre-shaped clay ball with one flattened side was pressed with this flat side onto the rim of a ceramic vessel¹⁶. Other types of sealings consist of massive lumps of clay, some with a flat reverse but others irregularly shaped, either wholly pushed into the mouth of the vessel (fig. 3 : 7) or partly hanging over the rim (fig. 3 : 2). Convex clay slabs, with an even thickness of ca. one centimetre, were also used for sealing purposes; they were either simply placed on the rim of the vessel or hung partly over the rim, covering part of the vessel neck (fig. 3 : 4, 6). In some cases, the sealing consists of a lump of clay attached to a more or less circular sherd possibly serving as a lid. The sealing covered both this lid and the vessel's rim and neck, thus preventing the lid from being removed (fig. 3 : 9). Some sealings consist of conical or slightly rounded lumps of clay, with a flat or concave back. They have certainly been pre-formed, as appears from the prominent finger impressions on the reverse (fig. 3 : 5, 10). A very rare kind of sealing consists of a lens-shaped lump of clay pressed onto a thick rope, which fastened a piece of leather closing the vessel (fig. 3, 8).

16. Cf. ZETTLER, 1989 : 373.

Generally, the various types of pottery sealings cover the mouth of the vessel entirely, in a more or less airtight way. An exception is the kind of sealing shown in fig. 3 : 1, and fig. 4 : 1 : this vessel had first been closed with a lid or stopper and subsequently the clay sealing was placed against the outer surface of the jar neck, covering both the vessel rim and part of the lid, thus preventing removal of the lid¹⁷.

Remarkably, the pottery sealings often lack seal impressions. In the case of the type of sealings represented by figure 3 : 1, about half of the sealings shows stamp-seal impressions, but in the case of the other types (fig. 3 : 2-10) only a quarter is impressed. This may partly be due to matters of preservation but some items, in particular the so-called 'jar stoppers' (fig. 3 : 2-7, 10), may have functioned as mere lids rather than sealings in the true sense of the word.

Stone bowls

Four sealings originally sealed one or more stone vessels. Actually, two sealings fitted a small and oval, grooved bowl made of gabbro (fig. 6; the grooves and rim of the bowl have clearly left their impressions on the reverse of the sealings). Both the sealings and the bowl were found in the same level 6 house II but in different rooms (the sealings were found in room 6, the bowl in room 12). Interestingly, only *one* of the sealings gave evidence of stamp-seal impressions. Apparently, the bowl originally carried a sealing with a stamp-seal impressions but was re-sealed later, for one reason or another, without renewal of the seal impressions. This repeated sealing of the same container may indicate that the actual sealing was carried out at the site itself.

Leather bags

One sealing shows a pleated hairy surface on its reverse, tied tightly with a piece of rope 2 mm thick. Most likely, this sealing originally sealed a leather bag, which was closed with a rope at its opening. The leather must still have had some hairs attached to it. Other bag sealings at Sabi Abyad are perhaps represented by two impressions of finely woven cloth.

Unidentified objects

Unfortunately, identification of the sealed objects has not been possible in many cases (27.4 %) : some sealings have surfaces

17. Cf. ZETTLER, 1989 : 374.

too damaged to allow further determination, others show reverses which cannot with any certainty be associated with any of the kinds of containers distinguished so far. In some cases the sealing reverses are flat or slightly concave and carry rope impressions (fig. 4 : 2, 15; fig. 5 : 2, 4); perhaps these items were once attached to a piece of leather closing a pottery vessel¹⁸. Others have a triangular section and a convex reverse which shows a considerable quantity of straw impressions, all oriented in the same direction; they may have sealed baskets or basketry lids.

SEAL IMPRESSIONS

Most sealings at Sabi Abyad (n = 189, or 63 %) carry one or more stamp-seal impressions on the obverse. At least 67 different stamp seals must have been in use (this on the basis of seal size, shape and details in design; cf. fig. 4 : 2, 4, 9-13), which may be grouped into 27 different seal designs, some of which occur only once or twice, others in considerable quantities. At present, no clear relationship is found between a particular kind of seal design and a particular type of container¹⁹. The major design categories each show one or more varieties, which appear to have been used simultaneously. Below, some designs will be briefly commented on.

The 'capricorn' (fig. 4 : 1-5) is by far the most common design at Sabi Abyad (n = 51, or 27 % of the total number of *impressed* sealings). It depicts a goat-like animal with long horns curved backwards, bent hindlegs and stretched forelegs. The forefeet are divided into two halves, indicating the hooves. The animal has a fairly long neck, a short tail and two ears. In front of the animal, a lenticular motif (a weapon ?) fills in the stamp surface. The capricorn design is associated with at least eight different seals, each of which is circular or slightly oval but different in size and design configuration.

Another common design (n = 15 or 8 %) is characterised by zigzag lines in combination with triangles along the edge of the impression (fig. 4 : 6-8). This design is associated with nine different seals, some circular, others rectangular.

Thirty sealings (16 %) showed impressions of an S-shaped or, rarely, Z-shaped stamp seal with a design, varying in degree of elaboration, basically consisting of continuous lines following the shape of the stamp surface (fig. 4 : 9-12). Nine different seals can be distinguished. In one case, the S-shaped design is used, on one and the same sealing, in combination with the zigzag motif.

The rather complex 'bucranium' design occurred 14 times (7 %) and is associated with a circular stamp surface (fig. 4 : 7, 9, 13). The main Y-shaped element is combined with triangles and curved lines in a variety of ways. The bucranium design sometimes occurs together with the S-shaped and the zigzag designs; in most cases, these combined impressions result from the use of the same pair of seals.

Circular impressions depicting a tree or other plant-like motif appeared five times (2.5 %); each is represented by a different seal (fig. 4 : 15). The design shows a vertical stem, with a series of leaves on each side, pointing either downwards or upwards. In some cases, the tree stands on a striped ground surface, and above the tree two triangles pointing downwards are shown, possibly depicting flowers or fruit.

Four impressions (2 %) show a rather complex design : toothed ellipses connected by another ellipse or straight line, dividing the seal area in two parts. Each part carries one or two 'bow-tie' motifs and, occasionally, an ellipse (fig. 5 : 2). Two variants can be distinguished, each occurring twice.

One sealing (0.6 %) shows a series of cowrie-shell impressions (fig. 5 : 1). Originally, the shell must have been attached to a string of beads : next to each impression the beads have left a row of small concave imprints. In addition to sealing purposes, the shell (and perhaps stamp seals in general) seems to have been used as a pendant or, possibly, an amulet as well, worn around the neck or wrist.

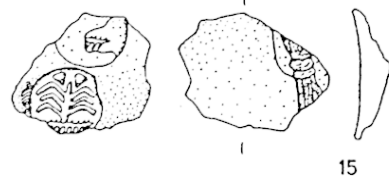
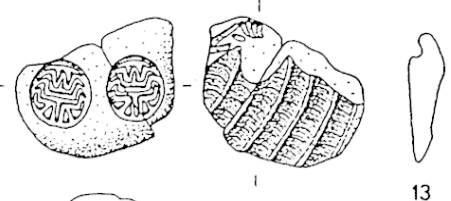
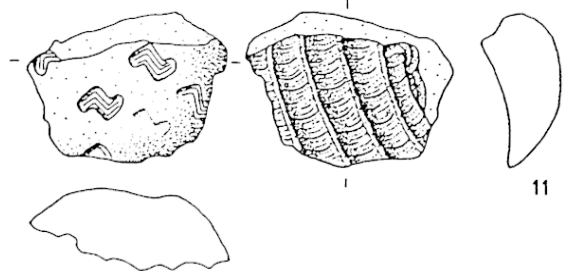
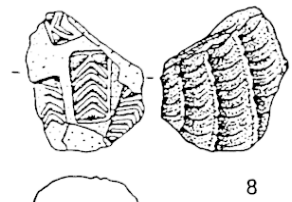
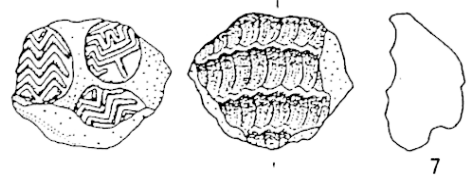
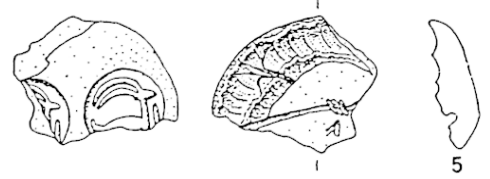
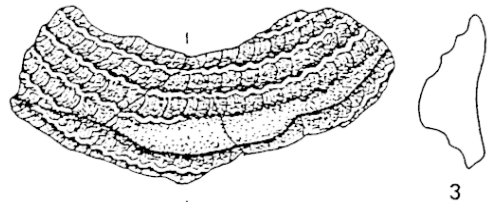
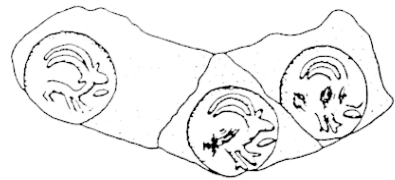
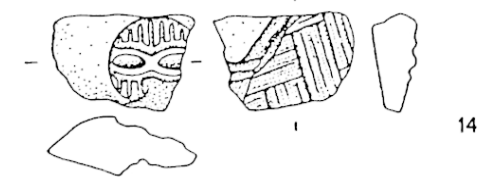
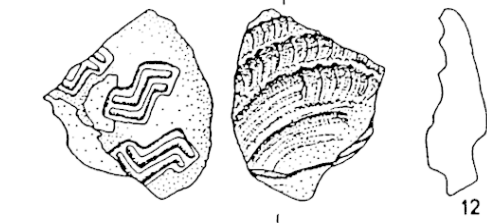
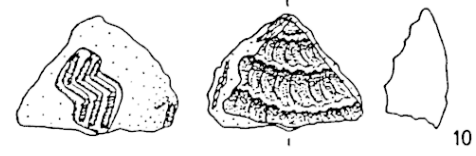
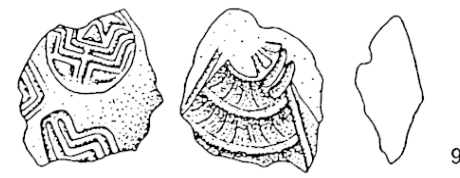
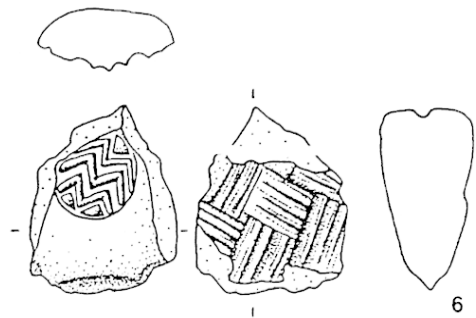
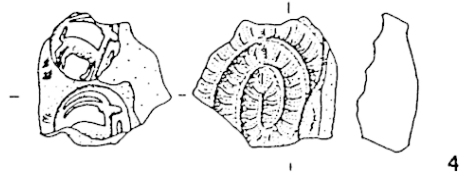
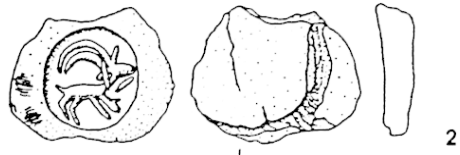
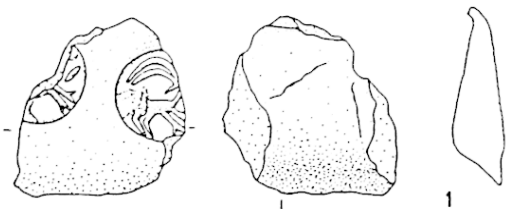
Most intriguing are the nine sealings (5 %) with very large impressions (over 9 cm long) depicting an anthropomorphic figure standing upright with a wide head and conical headgear or hairdress, rudimentarily depicted arms and straight legs (fig. 5 : 7)²⁰. Facial features have not been rendered except

18. Cf. FERIOLI and FIANDRA, 1983 : 486, fig. 12b.

19. See DUISTERMAAT, 1996 : 342ff and table 5.4.

20. Some fragmented impressions indicate that the legs originally carried a herringbone pattern (not visible in the case of the shallow impression of fig. 5, no. 7). Cf. DUISTERMAAT, 1996, fig. 5.6.

Fig. 4 : Selection of Sabi Abyad clay sealings.



for the elongated, sharply delineated eyes with pronounced eyebrows. A similar design resembling a human face with eyes and eyebrows is represented by two circular seal impressions (1%; fig. 4: 14).

Finally, a few impressions carry rather simple designs such as pointed stars, concentric circles, crosshatching, diamond-shaped lines encircling each other or longitudinal lines, with short lines in perpendicular position to the long ones (cf. fig. 5: 3-6).

THE SEALINGS IN A WIDER PERSPECTIVE

Sealings are commonly associated with the recognition and administration of property, the protection of containers against unauthorised opening, the organisation of storage and the control over exchange networks. In addition, the occurrence of sealings is usually linked with a hierarchically-organised 'complex society', the appearance of well-established elites and bureaucratic institutions serving these elite groups²¹.

Basically, sealings serve two aims, both very often linked: on the one hand they define the property of a person or group of persons, on the other hand they explicitly deny outsiders access to this property. Sealings thus imply the unequal distribution of goods, with the various sealed products not simply accessible to all members of the society but to their owners only; the sealings serve as control devices assuring this restricted access. In this respect, sealings can hardly have served within small social units or at the household level, where the control over products can proceed much more efficiently through mechanisms other than the formal application of sealings (e.g. verbal announcements). Therefore, it seems that the sealing of goods is necessary only if the handling or circulation of these goods involves persons beyond the own domestic unit²². However, at the same time only the *responsibility* for the well-being of the goods is handed over to these persons, not the property itself or any property claims. This arrangement is not merely based on mutual trust but secured in a formal manner through the use of sealings. The original (i.e. unbroken) sealing authenticates the sealed container and its content; it makes clear that the item given in custody is in its original state and that no fraud, tampering or theft has taken place. Evidently, abuse cannot entirely be prevented by sealings; one can easily break the sealing of a container and take whatever one likes. However,

broken sealings immediately indicate an unauthorised opening and allow rapid, specific intervention from the side of the proprietor. This system of control over goods and people operates in a very simple and flexible manner, easily recognizable to a wide audience; it is exactly this simplicity and clarity which accounts for the success and widespread use of the practice of sealing in the prehistoric Near East.

Sealings as devices of control may have served the needs of elite groups in society to a considerable extent. Although there is no reason to assume *a priori* that seals and sealings were the prerogative of elites, it appears that the practice of sealing has an enormous potential in terms of power and manipulation. Above it has been pointed out that sealings imply an unequal distribution of goods. Any elite group would pursue such differentiated access, since exclusion of the commoners enables leaders to mobilise considerably more wealth and prestige to their own economic and social advantage²³. However, in the case of Sabi Abyad solid proof for the presence of any elites or an intra-site hierarchical organisation is absent so far. The lack of evidence for distinct institutions of power and control at the site suggests that social differentiation was very modest²⁴. Consequently, it seems unlikely that the Sabi Abyad sealings served in some kind of status or prestige context or that they were the product of elite-directed control.

Elsewhere, it has been argued that in the case of Sabi Abyad the actual sealing did not take place at the site itself but was carried out somewhere else, and that the sealings arrived at Sabi Abyad as parts of long-distance trade or exchange products²⁵. Indeed, many items found at the site could not have been locally won but must have been obtained through extensive exchange networks, with the goods travelling over great distances from one social unit to another: obsidian, copper ore, basalt and other stones were brought in from Anatolia; cedar wood, Dark-Faced Burnished Ware and, perhaps, tabular flint came from the Levant; and Samarra and Hassuna-pottery was obtained from eastern Syria or north-central Iraq²⁶. Sealings may have facilitated this exchange, particularly when the goods were transported by middlemen (the sealings allowed the proprietor of the goods

23. See e.g. the various contributions in EARLE (ed.), 1991.

24. AKKERMANS and VERHOEVEN, 1995: 28ff; see also AKKERMANS, 1993: 289.

25. AKKERMANS and VERHOEVEN, 1995: 21ff; DUISTERMAAT, 1996.

26. Cf. LE MIÈRE, 1989; LE MIÈRE and PICON, 1987; AKKERMANS, 1993; and the various contributions in AKKERMANS (ed.), 1996. However, it is not excluded that some products were obtained by direct expeditions, or during visits by community herders scheduled into their normal seasonal movements.

21. E.g. FERIOLI and FIANDRA, 1983; ZETTLER, 1987; ALIZADEH, 1988; ROTHMAN and BLACKMAN, 1990.

22. Cf. CHARVÁT, 1988: 57.

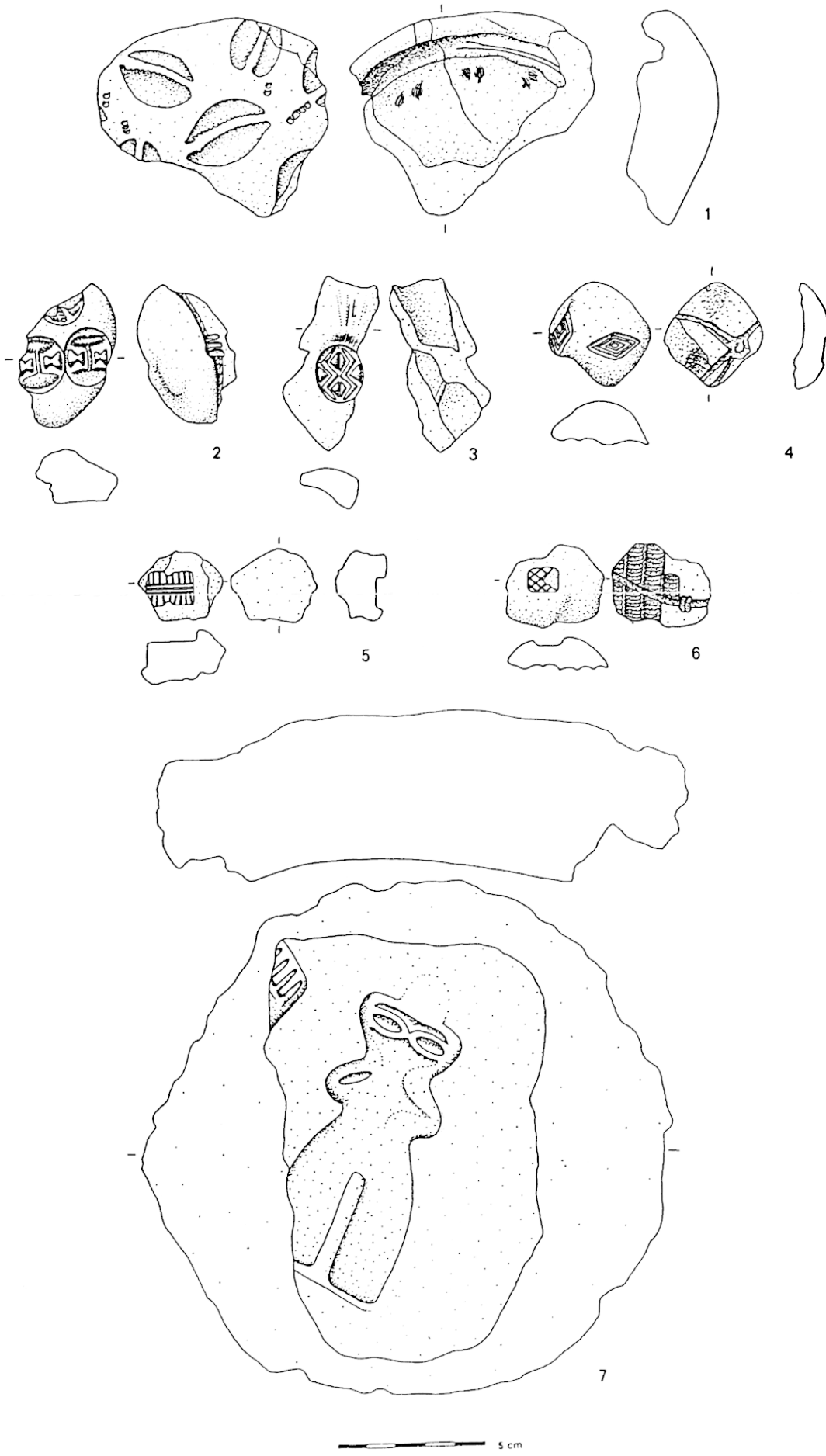


Fig. 5: Selection of Sabi Abyad clay sealings; no. 7 with human representation.

to control his middlemen and the circulation of his products). However, some recent analyses of the clays used for the manufacture of the sealings made it clear that the sealings almost certainly came from within the Balikh basin, very likely even from the site of Sabi Abyad itself²⁷. If, indeed, the sealings were produced at the site, they cannot have operated in the exchange network : at the site level, the sealing of products was wholly unnecessary since the handling and exchange of products could easily and much more effectively proceed face-to-face, with both the quantity and quality of the exchanged goods immediately arranged according to mutual satisfaction. Any exchange between the few sites existing in the Balikh valley around 5,200 B.C. (6,000 calBC) most likely took place at the face-to-face level as well, when taking into account the very restricted distance between these sites : 20 km or a four hours' walk at the most. In this respect, it seems that intra-regional exchange hardly contributed to the practice of sealing at Sabi Abyad, or not at all²⁸.

If elite groups or the exchange network did not (or not exclusively) underlie the practice of sealing at Sabi Abyad, one may wonder what other variables required the use of sealings. In the case of Sabi Abyad, it appears that sealings were used in massive numbers by numerous people and very frequently. Hundreds of sealings have been found at the site so far, almost two-thirds of which carry stamp-seal impressions. The impressions display a wide variety of seal shapes and designs, indicating that at least 67 different stamp seals were used for sealing purposes. When assuming that each seal was used by a single person or institution (which, moreover, made use of one seal only), it follows that dozens of individuals were involved in the sealing of commodities.

Interestingly, the sealings were not found randomly distributed throughout the settlement at Sabi Abyad but largely restricted to two buildings only. In addition, it appears that the sealings are mainly restricted to one or two rooms only

within these two structures, and that each of the buildings was used by different sealing persons²⁹. In short, it seems that the sealings were not mere refuse but items deliberately taken out of circulation and stored, together with numerous other small items, in specific 'archive rooms' in a few structures only. It cannot yet be established whether this storage in 'archives' was only temporarily or, in contrast, more or less permanent. The occurrence of sealings in refuse deposits at sites like Arslantepe, Tepe Sharafabad, Nippur and Abu Salabikh suggests that the former was the case³⁰.

It seems reasonable to assume that the sealings were removed from the containers (and subsequently preserved) near or at the spot where they have been found; if so, hundreds of sealed containers must originally have been kept in buildings II and V at Sabi Abyad, suggesting that these two structures served as storehouses (next to the other buildings which may have served for living or other purposes). Moreover, these storage buildings must have been in use at the supra-household or communal level, when taking into account (a) the general observation that sealings are only of use if the responsibility for one's property is transferred into the public sphere, and (b) the fact that numerous people dispatched sealed items to these storehouses.

Simultaneously, these storehouses must have acted as distribution centres : before it was suggested that the sealings were removed from their containers *in* the buildings, indicating that the products left the building in an unsealed state. When taking into account that the goods were initially kept in sealed condition, i.e. in the shape of individual properties, it seems clear that the distribution was not meant to take place at random to whoever needed it but was restricted to the seal holders only.

At this point, one may speculate on the identity of those who actually used the 'communal' storehouses at Sabi Abyad. At present, there is no reason to assume that every individual or social unit at the site simply brought their belongings to the storehouses; after all, the various domestic buildings surrounding the storehouses seem to have had more than enough space to contain the supplies of each household³¹. Collective storage of properties, under the supervision of external custodians, is then mainly relevant whenever one is not able to take care of these properties oneself. The latter

27. This conclusion is based on the results of the recent clay analysis of 170 Sabi Abyad sealings, 166 of which carried seal impressions, as well as a number of comparative samples. Sincere thanks are due to Gerwulf Schneider, Freie Universität Berlin, and Marie Le Mière, Maison de l'Orient, Lyon, who both took care of the analyses. Detailed results will be published in due time; see DUISTERMAAT and SCHNEIDER, *in prep.* For a similar approach concerning the sealings of Tepe Gawra, see ROTHMAN and BLACKMAN, 1990 : 19-45.

28. Actually, many others have already argued that there is very little evidence at present to support the role of sealings in exchange relationships; see e.g. FERIOLI *et al.*, 1979; BRENIQUET, 1984; ROTHMAN and BLACKMAN, 1990; FRANGIPANE and PALMIERI, 1992; SCHMANDT-BESSERAT, 1992. But see ALZADEH, 1988, for an opposite view : while discussing the sealings from prehistoric Tall i-Bakun A, he suggests that these items were in the hands of elites and used for the administration of production and trade.

29. See the extensive discussion *in* DUISTERMAAT, 1996 and tables 5.5-5.6.

30. FRANGIPANE, 1994 : 125; WRIGHT *et al.*, 1980; ZETTLER, 1987 : 208; MATTHEWS, 1989 : 93-95.

31. Cf. AKKERMANS and VERHOEVEN, 1995.

can hardly have held for all people in the case of permanently occupied settlements such as Sabi Abyad; even if the main proprietor was not available for one reason or another, close kin might have taken over his responsibilities. In this respect, it appears, once again, that the Sabi Abyad storehouses with their sealed containers only served the needs of particular social *groups*, i.e. those who were not physically present to guard their assets. Let us consider the possibility that the population at Sabi Abyad was not composed entirely of permanent residents, but had a considerable mobile or transhumant component which made use of the site for specific purposes at specific times. If the above is true, this mobile part of the population would not simply consist of some individuals otherwise fully associated with the permanently settled domestic units but comprised entire 'families' or 'households'. Before, at least 67 sealing agents were recognised, each making use of the storehouses at Sabi Abyad. If each of these agents not only represents an individual (i.e. the seal holder) but entire family units of perhaps 6-10 people, it can be argued that the storage facilities at the site were used by a non-residential group of some 400 to 670 people³². Even if the estimated number of individuals per family unit is considered to be much too high and is therefore halved, it appears that hundreds of non-residents must have relied upon the settlement at Sabi Abyad. The fact that, despite the hundreds of sealings, not a single stamp seal has been found in the Burnt Village so far might support the hypothesis that seals and sealings at Sabi Abyad mainly served the needs of non-residential people³³.

If, one step further, the above figures hold some validity for the Balikh valley as a whole as well, the number of mobile people can be increased to a considerable extent. Survey evidence indicates that, apart from Sabi Abyad, four other sites in the valley were occupied on a permanent basis at around 5,200 B.C. (6,000 calBC)³⁴. All except one of these

other sites are very small, each probably representing a hamlet occupied by two or three households at the most; these sites may have been able to support a small number of nomad families (if any at all). However, Tell Mounbatah in the central Balikh valley seems to have been of the same size and nature as Sabi Abyad in the late Neolithic and may have served similar purposes in socio-economic terms. Likewise, this site

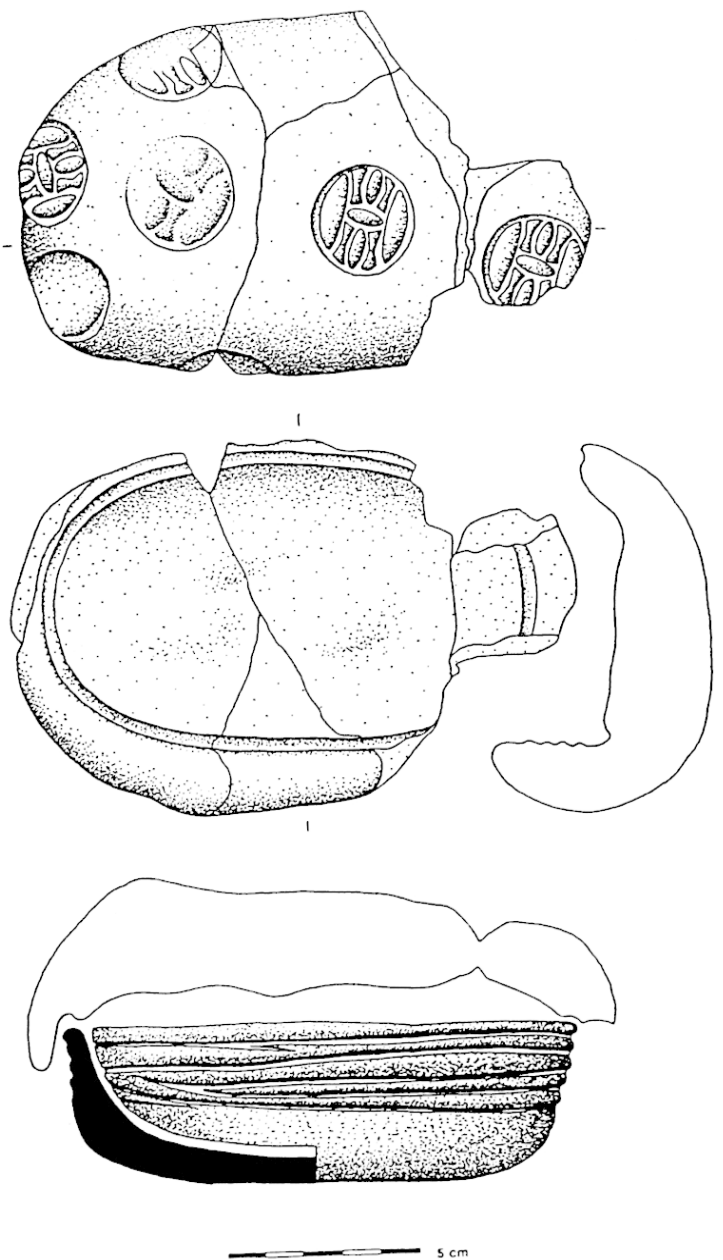


Fig. 6 : Incised stone bowl and associated clay sealing from building II at Sabi Abyad.

32. Cf. SUMNER, 1994 : 61.

33. Cf. ALIZADEH, 1988, on the interaction between sedentarists and nomads at the 4th millennium site of Tall i-Bakun A. and the role of seals and sealings herein. However, in contrast to our view, he suggests that the Bakun sealings served an elite-directed administration of production and trade at the site, with the nomad population participating on the one hand as a market for craft and subsistence products and on the other hand as a source of foreign commodities. The absence of seals in the Burnt Village at Sabi Abyad may also be due to other reasons : perhaps the seals were made of perishable materials such as bone (as at Tepe Gawra) or wood, or should be seen as precious items carried on the body of the owners, which consequently had left the site at the time of its destruction. See e.g. VON WICKEDE, 1990, and FERIOLI *et al.*, 1979.

34. AKKERMANS, 1993 : 175-176.

may have served the needs of a mobile population of at least the same size as at Sabi Abyad³⁵. For the nomads, moving around in a sparsely populated region, the settlements may have been true landmarks, existing since 'time immemorial'.

It has been suggested that pastoral nomadism, in the sense of sheep-goat pastoralism entailing seasonal movements, first developed in the early 6th millennium B.C., perhaps as a response to a declining environment and an increasing population pressure³⁶. Our present interpretation of the Sabi Abyad sealings as well as some survey evidence from the Balikh perfectly fit within this hypothesis³⁷. Elsewhere it was pointed out that it was the Halafian society in the Balikh region in the early 5th millennium B.C. that increasingly relied upon pastoralism in combination with small-scale agriculture³⁸ but this symbiosis may very well have started on a considerable scale already in the 6th millennium B.C.³⁹.

The non-residential groups may have relied mainly upon a pastoralist mode of subsistence, exploiting the extensive steppe in the Balikh valley and adjacent regions, but at the same time must have been closely engaged in all sorts of economic and social relationships with the sedentary population at the various sites. Integration of agricultural and pastoral economy proceeds most efficiently at the community level, with the community either split up into specialist sections or alternating in its entirety between pastoral and agricultural pursuits within a single year⁴⁰. The former option, with one group relying on cultivation and permanently settled, the other relying on pastoralism and living at the site during certain times of the year only, seems to fit the Sabi Abyad evidence best. It should, however, be taken into account that this social partition is not necessarily durable but often only lasts for a single annual cycle, and that the pastoralist group may easily change place with the sedentary group and vice versa⁴¹. It has been argued that this often weak dichotomy

between the nomadic and sedentary groups in society is characteristic of the Neolithic⁴²; if so, the 'nomads' of Sabi Abyad may have both farmed and tended herds, and may have held houses, land or other properties at or near the site, used during particular times of the year. Ethnographically, the role of nomads as landlords or house-owners is widely attested in the Near East⁴³; archaeologically, it finds support at, e.g., Neolithic 'Ain Ghazal in Jordan, where it has been suggested that many of the houses were not necessarily inhabited on a year-round basis but only seasonally⁴⁴.

Historical and ethnographic evidence indicate that in the 19th and 20th century nomads in the Jezirah spent the winters along the Euphrates, Balikh and Khabur, where there was water, fuel and pasture, and where agricultural supplies were stored to survive the lean months. Subsequently, when climatic conditions improved and crops started to grow, the pastoralists moved away from the rivers into the steppe but during the hot summer the herds were restricted to the land situated at a day's walk at the most from the watercourses⁴⁵. Similar observations hold for other regions. For example, in southeastern Anatolia, wintering nomads maintain long-standing relationships with certain villages to which they habitually return, drawing on their services and land resources and coming under the authority and protection of the village chiefs⁴⁶. If this picture has some significance for the late Neolithic as well, it is not unlikely that large sites like Sabi Abyad and Mounbatah acted as winter camps for pastoralists, providing these people with food, shelter, security and other facilities. In short, the larger villages may have acted as points of exchange, storage and distribution centres and as the scenes of marriage contracts, communal festivities and ceremonies. They may have provided the pastoralists with temporary or seasonal means to augment their income (particularly in times of crisis), e.g. by assisting during harvests, guarding winter

35. Actually, a fragment of a clay sealing, undoubtedly of prehistoric date, was found on the surface of Mounbatah during our recent survey work.

36. E.g. OATES and OATES, 1976 : 101-102; VOIGT, 1983 : 322; KÖHLER-ROLLEFSON, 1992.

37. AKKERMANS, 1993 : 173, 186ff.

38. AKKERMANS, 1993 : 191; see also HIJARA, 1980 : 252ff; HOLE and JOHNSON, 1986/87.

39. Actually, ongoing analysis of the Sabi Abyad faunal material seems to wholly support this hypothesis; cf. CAVALLO, *in prep.*

40. CRIBB, 1991 : 25.

41. CRIBB, 1991 : 25; see also ROSMAN and RUBEL, 1976 : 556, discussing the Berovand tribe of Lurs in western Iran : "They are sedentary agriculturalists but still retain long-range nomadism (...). They have formed family corporations which are comprised most frequently of men who are brothers, though they may be cousins or just members of the same tribal subsection. One brother will farm while his partner takes care of the sheep, migrating to Khuzistan in the winter with the herds and returning the following spring.

The next year, the partners will reverse their roles, the partner who farmed taking over the animals and going on the migration".

42. See, e.g., CRIBB, 1991; KÖHLER-ROLLEFSON, 1992; and other contributions in BAR-YOSEF and KHAZANOV (eds), 1992.

43. See e.g. BARTI, 1961 : 9, on the landlords among the Basseri in southwestern Iran, and KÖHLER-ROLLEFSON, 1992 : 14, on the Marrai'e in Jordan : "There are still a number of families associated with Suweimra who specialize in pastoral production and who own large herds (...). While they never actually live in Suweimra, they own houses there which they use for storage only". CRIBB, 1991 : 69, points out that "In contrast to one of the earlier myths about pastoral society, property and domestic goods are individually owned by each household and not communally". See also the seminal work of ROWTON, 1973, on "enclosed nomadism".

44. KÖHLER-ROLLEFSON, 1992 : 14.

45. HOLE, 1991 : 19; see also ROWTON, 1973 : 15, and LEWIS, 1988 : 688ff.

46. CRIBB, 1991 : 198.

crops and managing the village flocks⁴⁷. Elsewhere it has been argued that a main bottleneck in local late Neolithic agriculture was the harvest time when labour requirements may easily have gone beyond the communities' capacities⁴⁸; one way to bypass this constraint may have been the temporarily recruiting of additional labour forces from the nomadic population. In addition, it seems that agriculture alone was hardly able to meet the food requirements of local late Neolithic communities, and that other sources of food, i.e. live-stock, must have contributed to the diet to a considerable extent⁴⁹. It may very well have been the nomadic or semi-nomadic groups in society who provided these additional sources of daily subsistence in return for other products for their needs.

Returning to the storehouses at Sabi Abyad, it appears that some seal designs or shapes occurred only once or twice, whereas others were found in considerable quantities; apparently, some seal holders and their relatives made a much more intensive use of the storage facilities at the site than others. Moreover, some of these persons or groups may have maintained close social or kinship connections, this in view of the resemblances in seal designs. For example, the commonly found 'capricorn' design is depicted in various configurations and associated with at least eight different seals (see above); each seal may have represented an independent socio-economic unit but the overall resemblance in design perhaps suggests that the seal holders and their relatives formed all part of one extended family, clan, or other group, with the capricorn acting as a social emblem emphasising group coherence⁵⁰. In addition, some sealings carry impressions of two wholly different seals, suggesting that two seal holders, on the same hierarchical level, shared responsibility for the sealed items⁵¹. However, this practice must have been rather loosely structured and informal, since these seals are also used individually and the number of combined impressions is low. Anyway, it seems that seals and (impressed) sealings are not exclusively administrative features but that they had another, symbolic meaning as well, tying society together and, perhaps, functioning in ritual, spiritual frameworks⁵². Even broken sealings seem to have had some

meaning in this respect, when taking into account that at various sites broken sealings were not discarded at random but deliberately kept for some time and subsequently dumped together in specific garbage areas.

Storage at Sabi Abyad on behalf of the nomadic population may have taken place in various forms. Basically, it may refer to specific commodities, i.e. properties in a material sense. The sealings suggest that mainly small containers had been sealed. In the case of the many baskets, it appeared that the rims rarely had a diameter over 20 cm. Ceramic containers, too, were small, with the rim diameters varying around 10 cm; large, thick-walled storage vessels hardly carried sealings. Apparently, the containers were all rather easily transportable. The restricted size of the containers and the general physical properties of both the containers and the sealings suggest that mainly solid, dry products in small quantities were packed. In this respect, storage may have comprised luxury goods and raw materials, such as precious stones, obsidian, metal ores, craft products and various finished articles of a perishable nature. Basic subsistence products like cereals were not kept in containers but were stored as staples, as suggested by the considerable quantities of charred grain found in building II, particularly in its westernmost rooms. In one room the grain lay almost knee-high and was surrounded and partly covered by a layer of ashy white fibrous material of vegetable origin⁵³. No door sealings have been found, suggesting that these rooms were rather freely accessible; any administrative control through sealings was apparently absent in the case of bulk products such as cereals.

However, storage may also have taken place in a wholly different manner, i.e. in the form of property *claims*. In this case, the sealed vessels, baskets, etc., did not contain the actual products but their symbolic representation in the shape of tokens⁵⁴, almost two hundred of which have been found in association with the sealings. Subsequently, whenever the need arose, the tokens could be converted at the site into the actual products each token stood for. In this sense, storage of tokens may have denoted administrative procedures, regulating the handling and assignment of properties and balances. In addition, it may also have included services, animals or goods which were not immediately required or available but could be delivered by the settled community within a certain period of time, because, e.g., the product still had to be

47. E.g. BARTH, 1961 : 109.

48. AKKERMANS, 1993 : 221.

49. Cf. FLANNERY, 1969; AKKERMANS, 1993 : 210ff.

50. Cf. WEINGARTEN, 1992 : 26, 34.

51. WEINGARTEN, 1992 : 34.

52. FERIOLI *et al.*, 1979; CHARVAT, 1994. At Sabi Abyad, the impressions with zoomorphic and, particularly, anthropomorphic representations may point in this direction.

53. Cf. VAN ZEIST and WATERBOLK-VAN ROOIJEN, 1996.

54. Cf. SCHMANT-BESSERAT, 1992 : 167ff, who emphasises the role of tokens in the communal storage of agricultural products.

manufactured, had to be brought in from elsewhere or was available at a particular time of the year only. So far, ten different kinds of tokens have been distinguished at Sabi Abyad, including shapes like small spheres, discs, cones, cylinders and 'vessels'⁵⁵. If we could assume that each of these stood for a different product or service⁵⁶, then it would seem that the non-residential groups at the site had laid claims for a wide variety of items. The numerous small spheres found at our site are particularly relevant in this respect, since they may have represented specific amounts of cereals⁵⁷; if so, grain was (not surprisingly) a product much desired by the nomads. The sealing of claims instead of the goods themselves may also account for the storage in bulk of subsistence products like cereals: not only did it make the rather inefficient individual storage of measured quantities in small containers superfluous but storage in bulk in specific areas may have also facilitated the protection of these products from rot, insect infestation or fungi⁵⁸. Finally, the storage of tokens instead of true products could partly account for the small size of most sealed containers at Sabi Abyad (they were hardly or not suitable for storage in bulk). A good example is the oval stone bowl found in building II; its associated sealing was found in the same building but in another room (fig. 6). An item stored in this small vessel, measuring hardly 13 × 7 cm, must have been either very small or available in very restricted quantities only; tokens seem to fit this requirement perfectly.

If, indeed, some people stored claims in massive numbers in sealed containers centrally in specific buildings, it follows that others had to provide the means for the ultimate conversion of these claims. This responsibility may have been in the hands of the settled population at the site but may have included the nomad groups as well. The proper handling of the numerous claims, particularly if they referred to the dividing of the community's staples (like the cereals in building II), will have required some kind of organisation and control beyond the individual or household level. Earlier, it was mentioned that in the case of Sabi Abyad solid evidence for the presence of elites or an intra-site hierarchical organisation is absent so far. However, if our line of reasoning has merit, some kind of authority can be postulated by inference, which took care both of the collection and the subsequent

distribution of goods at the site. If so, this authority may have had prestige and may have been able to control or manipulate the socio-economic relationship between villagers and nomads to a considerable extent. Further evidence in this direction is derived from our earlier conclusion that sealings as control devices operate in the public sphere and serve an unequal, restricted distribution of goods; apparently, the society at Sabi Abyad was far from a norm of 'egalitarian' or 'communal' but was organised along lines of inequality and recognised private ownership. The absence of any other (material) indication for this inequality may simply be due to a bias in the present sample but may also result from deliberate societal choices: leaders may have presented an imaginary social equality, which protected a much more complex and hierarchical society from evaluation by the commoners⁵⁹.

Finally, the widespread use of seals and sealings in the Balikh valley, and in northern Syria in general, around the middle of the 6th millennium B.C. or slightly afterwards took place along with considerable changes in local late Neolithic society. Following a period of site desertion and accompanying social instability, the late Neolithic communities seem to have been re-establishing themselves at this time, pursuing new modes of subsistence strategies and intensifying inter-regional relationships⁶⁰. Pastoral nomadism may have contributed considerably to the rise of this increasingly complex society. Seals and sealings as devices of control in their turn facilitated the relationship between the pastoralists and the sedentary communities. In this sense, seals and sealings represent the formal relics of the symbiosis between the sedentary and nomad populations in the late Neolithic.

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55. SPOOR and COLLET, 1996 : 441-43.

56. Cf. SCHMANDT-BESSERAT, 1992.

57. SCHMANDT-BESSERAT, 1992 : 150-51, 168.

58. Compare the *tholoi* used as granaries in the Halaf period; AKKERMANS 1993 : 229-230.

59. Cf. SHANKS and TILLEY, 1982 : 129-154; SHENNAN, 1982 : 155-161; MILLER and TILLEY (eds), 1984.

60. See e.g. AKKERMANS, 1993; AKKERMANS and VERHOEVEN, 1995; CAMPBELL, 1992.

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COMMENTS ON P.M.M.G. AKKERMANS AND K. DUISTERMAAT'S ARTICLE "OF STORAGE AND NOMADS – THE SEALINGS FROM LATE NEOLITHIC SABI ABYAD, SYRIA"

R. BERNBECK

Hired Herders

The fascinating results from the excavations at Tell Sabi Abyad provide important new insights into the development of administrative practices such as the sealing of containers. Akkermans' and Duistermaat's observations on the nature of the sealed objects and the purposes of sealing require a rethinking of a widespread idea, namely that sealing played a role mainly in regional or interregional exchange systems.

In an analysis of the sealings themselves as well as of their context, Akkermans and Duistermaat have argued that the sealings were used to control stored information which was represented by tokens. In that way, these administrative devices from Sabi Abyad exhibit some functional similarities to late 4th millennium clay bullae in their combination of a storage of information about items and persons¹; The fact that several hundred sealings occur in a context where there is not a single seal suggests that the seal bearers were absent at the time of the destruction of the village. It is therefore justified to think that a substantial part of the population which in one way or another was related to the village of Sabi Abyad was mobile.

A number of other assumptions underlie Akkermans' and Duistermaat's interpretation:

– Sealing is an administrative practice which is always associated with *formal* elites in a hierarchically structured society. That is, wherever sealings are found, a hierarchy based on more than gender and age differences was present.

– Sealings serve to define property of a person or group and to deny access to this property to outsiders.

– Such formal means of control of information (and property) are unnecessary at the household level where other mechanisms such as verbal communication are more effective.

– Tokens in sealed containers have the function of controlling some sort of material exchange.

The interpretation based on a combination of these assumptions and the archaeological evidence is a model of "delayed return exchange". In this model, stored and sealed information is a part of controlling exchange between sedentary agricultural producers and mobile herders. The group monitoring exchange between these two groups is the (sedentary) elite.

The model itself is predicated on further assumptions. The population centered on Sabi Abyad consisted of two almost completely separate groups: villagers and "nomads". It is unfortunate that Akkermans and Duistermaat use an imprecise terminology in this respect. When first dealing with the relationship between sedentary and non-sedentary groups, they suggest, based on ethnographic accounts from the Near East, that one and the same community was made up of mobile and sedentary people, and that the composition of both groups could change quite often. Later on, the term "community" is restricted to mean only the sedentary group living at Sabi Abyad. This produces a sharp conceptual split between a formally bounded sedentary and a mobile group. In the remainder of the paper, relations between these two groups are depicted as entirely economic in character. Thus, the nomads used Sabi Abyad as a place for exchange, storage and distribution center. It is said that this scenario "seems to fit the Sabi Abyad evidence best", although no further data are adduced to confirm this.

To specify the kinds of exchanged items, Akkermans and Duistermaat adopt Schmandt-Besserat's idea that tokens of different shapes had both a quantitative and a qualitative meaning, and that they can be read in reference to the earliest decipherable signs from the late 4th millennium. I find such a "reading" of discoid tokens as amounts of cereals unconvincing. If tokens are mnemonic devices with a function somewhat similar to other symbols, it cannot be expected that their

1. See NISSEN, 1993: 66-68.

shapes have fixed meanings across time and space². It is exactly the arbitrariness of the shape of symbols that prevents their reading except when they can be systematically related to other symbols, as is the case with number *systems* and writing. At Sabi Abyad, it is more probable that information about quantities of a single item were stored by means of tokens, and that the kind of item counted was known by the contracting parties.

Akkermans and Duistermaat themselves mention one problem with their interpretation: there are no indications for the presence of a formally distinct elite which controlled the exchange of goods between mobile and sedentary groups. They imply therefore that the elite promoted an egalitarian ideology to mask inequalities. There are also some other problems with their interpretation. If the elite at Sabi Abyad monitored a delayed return exchange between nomads and non-elite villagers, and if the property controlled belonged to the nomads, why should their *actual* property, i.e. grain, be stored in one of the “storehouses”? The advantage of controlling access to the information on *property claims* is that the goods themselves do not have to be physically present. For this reason, the large amounts of cereals found in building II need not – and probably do not – have anything to do with the administrative items found in rooms 6 and 7.

Furthermore, if the villagers had incurred debts to the nomads – as indicated by the fact that sealings but not seals were found, that is, accounts were open – this implies that the mobile part of the society had some economic power over the villagers. One wonders therefore why they would choose a sedentary elite to take care of their property claims.

This leads me to my main objection. Akkermans' and Duistermaat's model overstates the difference between sedentary and mobile groups, between “desert” and “sown”. Instead of conceiving of nomads and sedentary people as “specialist sections”, I would like to propose a slightly different interpretation based on a different set of assumptions:

1) Tokens are used not to control an exchange between two formally distinct groups (nomads – villagers); rather, they are mnemonic devices to monitor elements of subsistence production – specifically animal reproduction – within one group.

2) The information stored in the form of tokens in sealed containers does not necessarily represent claims for products to be handed over in the future. It can as well be a statement

of a *starting point* of a contract. One partner, the villager, stays behind, whereas another (or several others) leaves and takes along a certain number of animals. A record is made about herd size and different categories of animals (e.g. males and females), which are represented by different kinds of tokens, at the time of departure. When the herder returns, the stored information can be retrieved easily and compared to the actual herd size and composition. The “profit” in additional animals can then be distributed, according to social conventions, between the parties involved in the contract.

3) I assume – in accordance with a model of Meillassoux³ – that control of subsistence production in such societies is principally a matter of age. People of working age have an obligation to care for their children as well as for parents who are no longer working. Old people have no obligations except towards the ancestors of a village. The younger generation will eventually take their parents' position, and will then control the production and distribution of agricultural products.

4) Contrary to Akkermans and Duistermaat, I assume that even within kinship units, contracts of a relatively formal nature are often concluded. The story of Jacob and his father-in-law Laban in the Old Testament provides a vivid description of such a contract. Herders and villagers in such a scheme are part of the same social unit; they are not economically specialized people. Anyone of working age can be sent out with herds or stay in the village. Old people, because of the physical strains of a mobile life, stay in the village, where one finds the evidence for the “contracts” they entered into with some people of the younger generation. Such an integrated system, where part of a kinship unit stays in a village whereas another part moves with the herds – at least for some of the year – is defined as “transhumance”⁴.

The main differences between such an interpretation of the evidence from Sabi Abyad and Akkermans' and Duistermaat's are that tokens store information about a starting point of a contract, not about a future obligation. Furthermore, the information stored consists of easily counted, relatively “natural” units, i.e. animals, but not of an artificial unit such as a volume, weight or other measuring unit for grain. Differences between mobile and settled parts of a social unit are not as prominent as in Akkermans' and Duistermaat's model. According to Lees and Bates⁵, such specialization is only to

2. MICHALOWSKI, 1990.

3. MEILLASSOUX, 1981.

4. HÜTTEROTH, 1959 : 37; ZAGARELLI, 1982 : 98.

5. LEES and BATES, 1974.

be expected in conjunction with high surplus production, for which there is not much evidence at Sabi Abyad. The finding of a large amount of grain in House II indicates that this house was used year round. Since in House II tokens and sealings were found, one could suspect that this was one of the houses in which a kinship unit was centered, that is, where parts of the elder generation lived. Control of herd reproduction within a kinship unit does not presuppose a tripartite social structure with a (settled) elite, non-elite villagers and nomads. Instead, the social hierarchy could have been based on gerontocratic principles, which do not necessarily translate into economic inequality in terms of the distribution of material wealth.

Whichever explanation of the evidence one prefers, the data from Sabi Abyad and the stimulating interpretations proposed by Akkermans and Duistermaat provide new challenges to our understanding of the development of information storage.

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Les scellements de Tell Sabi Abyad fournissent des informations capitales pour notre approche des sociétés du néolithique oriental et pour celle du développement des sociétés complexes dans cette région. Ils apportent non seulement les preuves d'une utilisation extensive de ces techniques dans les communautés agricoles de l'extrême fin du VIII^e millénaire mais aussi de précieux renseignements sur le contexte social de leur utilisation.

Les réflexions sur la fonction sociale des scellements ont été jusqu'ici associées aux études sur les premières formations étatiques et, plus particulièrement, au contrôle bureaucratique de la redistribution des denrées artisanales et agricoles ou des échanges à longue distance qu'on y restitue. Les auteurs ont raison de ne pas projeter ces interprétations sur les scellements de Sabi Abyad, et leur argumentation est d'autant plus forte qu'elle repose sur des données concernant les contenants, le contexte de dépôt, l'origine des argiles.

Par leur décor, cachets et sceaux sont investis symboliquement et leur interprétation postule implicitement qu'ils sont utilisés dans les moments d'une chaîne d'actions où un contrôle social peut s'exercer, ce que les spécialistes de la

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technologie culturelle nomment des tâches stratégiques. Le contexte de Sabi Abyad où ils sont associés entre autres à des figurines le confirme, tout comme il suggère un rôle dans la gestion de produits par la présence de diverses variétés de jetons. De même que les idées communément admises sur le fonctionnement des premières entités étatiques conduisent à leur attribuer un rôle pour la redistribution et le contrôle des denrées dans la seconde moitié du IV^e millénaire, de même est-il donc ici logique de leur chercher un rôle en rapport avec ce que nous savons ou croyons savoir du fonctionnement d'une société néolithique. L'association des scellements de Sabi Abyad avec ce que les fouilleurs considèrent comme une composante essentielle de l'économie locale, à savoir l'interaction entre fractions nomades et sédentaires de la société, est de ce point de vue une hypothèse tout à fait séduisante. Elle est construite par inférences successives à partir des trouvailles et de leur contexte, et notamment du fait que la taille restreinte des récipients scellés implique qu'ils ne contenaient pas des céréales, mais soit des objets d'une certaine valeur, soit des représentations de celles-ci sous forme de jetons.

A partir de là, on ne voit pas très bien pourquoi cette « banque » primitive aurait servi seulement à une fraction non-résidente de la population, les « titres de propriété » qui y étaient entreposés n'ayant pas de raison *a priori* de concerner des non-résidents plutôt que des résidents. L'argumentation des auteurs tient pour partie au fait qu'aucun cachet n'a été trouvé sur le site, un argument relativement faible de leur propre aveu (note 33). Elle est surtout fondée sur l'hypothèse selon laquelle l'usage des cachets répond à une contrainte propre aux nomades, à savoir que les denrées stockées ou représentées dans les bâtiments II et VI quittent par nécessité la sphère domestique parce que leurs propriétaires ne peuvent pas les transporter avec eux. Si les « titres de propriété » réfèrent comme le supposent les auteurs aux ressources agricoles de la communauté, on peut supposer que le système de stockage et de « partage » concernait aussi l'ensemble de la communauté, et l'estimation du nombre de personnes correspondant aux 67 cachets utilisés devient alors sans objet.

Plus généralement, si nous admettons volontiers que la société de Sabi Abyad n'était pas égalitaire, c'est probablement aller trop loin de dire que les cachets témoignent d'un accès inégal aux ressources et de la reconnaissance d'une propriété privée individuelle, du moins s'agissant des ressources. Sans doute faut-il dans l'état actuel des données se contenter de suggestions plus générales que les hypothèses élaborées par les auteurs. Les recherches anthropologiques sur les sociétés inégalitaires suggèrent que dans les sociétés « transégalitaires », pour reprendre le terme proposé par Hayden¹, c'est-à-dire les sociétés à *Grands hommes* à *Big Men* pour reprendre la terminologie française², c'est par la création de dettes, quelle qu'en soit la nature, qu'un certain nombre d'individus attirent à leur profit le travail et la coopération des autres membres de la communauté, les ressources de la communauté restant partagées par tous. Il semble que des relations liées à certaines formes de dette, ou si l'on préfère de réciprocité différée, peuvent rendre compte des scellements de Sabi Abyad, qui n'auraient ainsi pas directement à voir

avec la gestion de la production. Ceci serait cohérent avec le niveau des inégalités sociales tel qu'on peut le supposer dans des communautés comme Sabi Abyad, et avec l'idée qu'il y existait vraisemblablement quelque autorité (i.e. des individus) en mesure de manipuler les relations socio-économiques entre les divers membres de la communauté. Une autre voie de recherche – peut-être complémentaire – pourrait être l'idée que les « archives » de Sabi Abyad correspondraient à des contrats à court terme d'individu à individu, portant sur de petites quantités (un mouton ou quelques mesures de grain) comme il en existait dans les communautés agricoles traditionnelles de Jordanie³.

Les données exceptionnelles de Sabi Abyad ouvrent de nouvelles voies de connaissance sur les communautés néolithiques du Proche-Orient, le seul piège à éviter étant sans doute d'y voir les précurseurs directs du système bureaucratique des premiers états. Peut-être aussi faut-il se garder d'établir, comme le font en conclusion les auteurs, un lien trop précis entre ces données et des changements considérables intervenant alors dans la société néolithique. Le caractère même de la découverte devrait nous inciter à être prudent sur ce qui la précède et sur les données qu'il reste à acquérir.

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M. FRANGIPANE

In their paper, Akkermans and Duistermaat deal with an extraordinarily early and well-documented case of a massive use of clay sealings as a form of administrative control over

the distribution of goods in the context of communal storage. Their interpretation, quite rightly in my opinion, has superseded the explanation that Akkermans and Verhoeven propo-

1. HAYDEN, 1995 : 19.
2. LEMONNIER, 1990.

3. MUNDY, 1984.

sed in an earlier article published in the *American Journal of Archaeology* in 1995, that relied on the assumption that “sealing agencies” had sent goods in sealed containers to Sabi Abyad. In this paper, after reconsidering both the nature of the location of clay sealings – concentrated in particular rooms inside buildings that were clearly intended for the massive storage of cereals – and the main function of the seal as an instrument restricting access to goods in situations involving persons outside the domestic unit, Akkermans and Duistermaat reconstruct a storage and distribution system at a supra-household level with which I fully agree.

All the elements they offer indicate a “central” control procedure for the distribution of goods to a large number of people (judging from the large numbers of different seals), reminiscent of all the procedural aspects of more recent administrative systems (the seal placed by the person withdrawing goods, repeated sealings of the same container, and the subsequent “filing” of clay sealings to serve as receipts/documents). The large number of people involved, the frequency of operations and the filing away of the clay sealings that had been removed would in themselves disprove the theory that the seal was used for exchange activities, which were certainly secondary in importance in the economic life of the Neolithic communities of the kind one finds at Sabi Abyad. For if the function of the clay sealings had been to guarantee the integrity of goods transferred by middlemen from one community to another, why should they be kept in store after being removed? The whole operation would have been completed with the delivery of the goods to the beneficiary. This hypothesis was at all events disproved when it was shown that the clay used was local.

Due account also has to be taken of the fact that the clay sealings were associated with buildings whose architectural features and size, as well as the large quantities of cereals found in them, indicate they were storehouses serving several domestic units. One very interesting idea proposed by A. and D. is that the need of an agricultural community to have a common management of primary goods must have arisen in societies with a semi-mobile organization where people had to temporarily move away from the storage places, making it necessary to entrust the harvests to officials appointed by the community itself. A very interesting case of this kind is that of a modern community in Libya mentioned by D.M. Hallaq at a recent colloquium¹. In this respect the hypothesis

presented is very stimulating: that forms of pastoral nomadism emerged in Late Neolithic as an adaptive answer to the growing demands arisen in those communities, and that the pastoralism, being closely integrated with the agricultural activities in the same communities made it necessary for at least some members to temporarily move away from their places of residence. This model fits in very well, in my opinion, with the configuration of the Neolithic societies of Jezira as well as with their Halaf developments, and accounts not only for the mobility of these communities which can be archaeologically recognized from the small size of the sites and their frequent shifting, but also for the possible forms of community cooperation in subsistence activities, as suggested by the architectural features (communal storage buildings) and the specialized economies of some villages. It is therefore no coincidence that the glyptics and the wholly administrative use of seals came into being in this northern environment in “communal centralization” contexts which, as A. and D. say, entail the transfer to the public sphere of the management responsibility but not the actual ownership of the centrally stored goods. However, the administrative procedures are very similar to those found in early state centralized systems, in which real forms of the central appropriation of goods developed. The finding of the burnt village at Sabi Abyad would therefore account for the maturity of an administrative system of the kind that has come to light at Arslantepe and other early urban Mesopotamian sites, which E. Fiandra has already emphasized on many occasions.

Where I cannot entirely agree with the authors of this article is their assumption that distribution was the result of an exchange between shepherds and farmers (agricultural produce exchanged for other goods from the pastoralist community). I think that the model of centrally managed stores is much more likely in situations where the producers themselves put their products into a common store and have subsequent access to them following specific regulations. The intensity of the operations as well as the very large number of people withdrawing the goods suggests that the whole community was involved following regular procedures on a continuous basis.

Another rather unconvincing point in the proposal advanced by A. and D. is their assumption that clay sealings may have been used to seal the symbolic representation of the goods withdrawn, namely tokens, rather than the actual goods themselves. This assumption is based on the small size of the containers considered to be too small judging from the impressions left of them on the reverse of the clay sealings;

1. FERIOLI P., FIANDRA E., FISSORE G.G. and FRANGIPANE M. (eds), 1994. *Archives before writing*. Rome.

this, according to the authors, is further supported by the assumption that the seals have a symbolic value, suggested by the fact that the clay sealings were kept in special places after their removal. But whereas the "filing away" of the clay sealings is a well-known administrative procedure in redistribution systems, the problem of the size of the containers needs to be rethought out a little. Judging from our experience with thousands of clay sealings in Arslantepe, we might suggest that the vast majority of the baskets recognized at Sabi Abyad were in reality straw or reed lids placed on the vessels; if this is the case, necks with diameters of 15-20 cm can belong to middle-sized or even large vessels. It would be important, in this connection, to know which kind of pots were found in the store building at Sabi Abyad. At any rate in later contexts it was a well-known practice to use rather small containers in "distribution stores" which were continually refilled. The western rooms of Building II at Sabi Abyad with the large quantities of charred grains found in them could have been stores from which to refill the containers for distribution.

On the other hand the tokens were not only too few in proportion to the number of clay sealings to have performed the function proposed here, but from the description given by the authors they were not found associated with the vessels

but with the clay sealings that had been set aside. It is therefore possible that they played the normal function of counters for internal accounting purposes in the storehouse. Lastly, if the clay sealings had been used to seal the tokens as symbolic representations of the quantity and quality of the goods withdrawn, or even of "property claims", it would not have been necessary to keep the clay sealings removed after every reopening of the containers, because the information on the number and amount of withdrawals would have been given by the tokens themselves.

With regard to the specific procedures for distribution there is, of course, a great deal still to reflect upon and investigate in the different contexts in which there is a good documentation available, but the general model proposed by A. and D. in this paper, in my opinion, works very well. It also accounts, as I have already said, for subsequent developments of administrative systems in the Near East, opening up new perspectives for the investigation of the origin of such systems, as well as for the study of the organizational features of Late Neolithic societies in northern Mesopotamia.

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A. LE BRUN

Au scénario « classique » qu'avaient élaboré P.M.M.G. Akkermans et K. Duistermaat pour rendre compte de la remarquable trouvaille à Sabi Abyad de nombreux scellements portant des empreintes de cachets et qui suggérait la pratique d'un système de gestion, la reconnaissance de l'origine locale de l'argile utilisée pour façonner les scellements les a amenés à substituer un autre scénario dans lequel un rôle essentiel est donné à une population non-sédentaire, un scénario décrivant la symbiose entre des populations d'agriculteurs sédentaires et des populations de pasteurs nomades. L'introduction de populations non-résidentes n'est pas sans soulever des interrogations.

Que l'argile utilisée pour les scellements soit d'origine locale est une chose, que l'on doive en conclure à l'intervention dans le système de gestion d'une population ne résidant pas sur place, en l'occurrence des pasteurs nomades, en est une autre. D'ailleurs le fonctionnement du système tel que P.A. et K.D. le décrivent, ne réclame en rien une telle inter-

vention « extérieure » : il n'est, en effet, pas besoin d'être un non-résident pour avoir à recourir à des « claims of ownership », si tant est que nous ayons à faire à des documents de cette sorte, qu'en bonne logique on s'attendrait plus à trouver entre les mains des créanciers qu'entre celles des débiteurs, comme ce serait le cas dans le scénario envisagé.

Mais, de plus, les arguments avancés pour démontrer la nécessité d'impliquer des non-résidents dans cette affaire sont deux affirmations qui méritent discussion. Car on est bien en droit de se demander pour quelles raisons l'usage, au niveau intra-site, de scellements marqués d'un cachet serait à exclure, comme on est également en droit de se demander pour quelles raisons il en serait de même au niveau inter-site. On ne voit pas non plus pourquoi le type d'échange « face to face » qui aurait prévalu, tant au niveau intra-site qu'au niveau inter-site, entre des populations sédentaires, ne se serait pas appliqué tout aussi bien à des échanges entre des sédentaires et des non-sédentaires. Ce traitement particulier que le scénario im-

pose ainsi aux échanges entre ces deux populations, s'accordant par ailleurs difficilement avec la fragilité, soulignée par P.A. et K.D., de la partition sociale entre groupes sédentaires et groupes nomades, fragilité dans le temps : une telle partition pouvant n'exister que pour un cycle annuel, fragilité des statuts : le groupe sédentaire pouvant devenir pasteur et inversement. Le recours à des non-résidents n'est pas non plus conforté par l'absence de cachets. L'absence ou la rareté des cachets, comme ailleurs celle des sceaux-cylindres, n'a rien d'inhabituel et l'incendie qui a ravagé le village l'explique aisément à Sabi Abyad. Pour quelles raisons en effet, au moment d'abandonner sa maison ou son village en proie aux flammes, le possesseur d'un cachet se serait-il défait d'un objet chargé de valeur, de petite taille, donc aisément transportable et qu'il devait en outre déjà porter sur lui ?

Quant à l'hypothèse selon laquelle les jetons trouvés aux mêmes endroits que les scellements seraient la représentation

symbolique de denrées ou de services, – à ce propos je n'ose m'interroger sur la nature des services symbolisés par les figurines humaines –, j'ignore si elle est pertinente comme j'ignore aussi pourquoi les petites sphères pourraient avoir représenté des quantités données de céréales. Mais si tel est le cas, on ne peut qu'être frappé par la disproportion existant entre le petit nombre de jetons recueillis, – « almost two hundred » qui se répartissent en 10 types –, le nombre de scellements, – 189, pour ne compter que ceux qui portent des empreintes de cachet –, et le nombre de « personnes » identifiées, de cachets utilisés, – 67 –, représentant un groupe non-résident estimé par P.A et K.D. compter entre 400 et 670 personnes.

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Like inventors or people making an unusual spectacular contribution to a specific field, lucky excavators enjoy a certain freedom of exaggeration and over-enthusiasm. Quite obviously, Sabi Abyad is one of the most interesting sites excavated in recent years which in many respects is liable to change our picture of life in the Neolithic period, and without any doubt, Peter Akkermans and the entire crew are to be congratulated both on their luck and the skill which enabled them to come up with such magnificent results. Yet, what he and his present collaborator Kim Duistermaat offer in the article under discussion is much beyond of what could be conveyed by the expression of "Narrenfreiheit". In fact, I confess that I recommended that this article should not be printed. Being put on the spot, I will briefly outline my reasons which concern both the form and the line of argument.

As can be seen from a comparison of the plan, figure 1, with the one published previously in AJA 99 p. 9, figure 3 (apparently there must exist a more recent publication which so far I have no access to) substantial parts have been added in the meantime, which as a matter of course cannot be found discussed in AJA 99. Since during the present interpretation so much emphasis is placed on the question of the functions of the rooms/buildings, it would have been absolutely necessary to at least sketch the new architectural situation incorporating the new additions. Other than on the AJA 99 plan

the remains now excavated to the west of building units II and III suggest that these two units belong to the same compound : and to judge from the new plan it even seems possible that what has now been designated unit X may in fact be another extension of II/III.

This would have two consequences detrimental to the main argument put forth later. 1) Even if only II and III belong to the same compound it would make this unit larger and more substantial than the others, pointing to social/economic differences within the settlement. At the same time this would easily explain why more sealings were found here than in the smaller units. 2) The combination would result in a unit consisting of a space for living and household activities and a large storage area consisting of small cubicles; perfectly normal : cf. for instance, Neolithic Basta. There would be no need for the totally speculative designation as "communal storehouse", with all the additional speculations coming along with it.

One of the basic points for the construct, the assertion repeated twice "solid proof for the presence of any elites or an intra-site hierarchical organization is absent so far" (p. 9 and later), however, does not need the counter argument noted above, but is ridiculed already by the observation that even with the new additions the area uncovered measures only 878 sqm or 1.75 % of the total area given as 5 ha.

Another basic argument is that “not a single stamp seal has so far been found in the houses” (p. 1). However footnote 4 tells us that “stamp seals have only appeared in somewhat later levels” for which we are referred to AJA 96, p. 10, which tells us that they were found in “level 4 fill”. From AJA 99, p. 8 we learn that during the early excavation three transitional levels 4-6 had been differentiated of which, however, later only level 6 turned out to be a building layer. Can it really be totally excluded that the fill of “levels” 4 and 5 has connections to level 6 buildings? But even without this observation, there are a number of systematic possibilities why in an area no seals would be found: curiously enough the authors themselves mention some in footnote 33, without paying attention to it in the main text.

Another problem is the undifferentiated usage of the word “sealing” both as equivalent to “fastener”, “closing device” and in the sense of “clay object with seal impressions”. On p. 1 we learn that of “these sealings”... “most... carry seal impressions”, but later on it is never differentiated between sealings with and without seal impressions. If it was through seal designs that returning nomads were enabled to reconize their property, then fasteners without seal impression cannot have had the same function; yet, they apparently were found together. This problem is not even touched upon.

That means that none of the fundamental arguments remains as powerful as to allow such far-fetched conclusions outlined in the second part of the paper. It is not necessary, therefore, to point out the many unexplained *a priori* statements which often contradict our normal assumptions and therefore would have needed an explanation. As such I may only cite one example on p. 12: “Let us consider the possibility that the population was not composed entirely of permanent residents but had a considerable mobile or transhumant component... If the above is true this mobile part

of the population would not simply consist of some individuals otherwise fully associated with the permanent settled domestic units but comprised entire “families” or “households”. First of all, the conclusion does not follow from what was said before; secondly, while such a differentiation by units may find a parallel somewhere, the normal scheme is that a varying part of a unit (family; household) migrates with the herds while another part remains at home and conducts the settled life of agriculturalists; incidentally, the authors themselves quote this situation in their footnote 41 but, incomprehensibly, they take this quotation to support their idea.

A last point concerns the method. While by now it has been widely accepted that without the use of hypotheses and even speculations archaeology would remain on a blunt descriptive level, what none of us would like to return, the use of models or hypotheses needs to follow strict rules. The piling of hypotheses on top of each other without the slightest attempt to give any explanations is simply unscientific; in a single paragraph on p. 11 I counted six superimposed hypotheses, what within eleven lines transforms the statement that there were “archive rooms in a few structures only” (itself disputable because out of twelve units sealings were found in five: almost half!) into the notion of “storehouses”. The next paragraph takes this designation already for granted, and without much further arguing this mutates into “ ‘communal’ store houses”, immediately afterwards; and we reach a next height in the next paragraph when it becomes “Collective storage of properties, under the supervision of external custodians”.

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H.T. WRIGHT

The archaeological community can only welcome this prompt preliminary publication of a remarkable series of sealings from the time when early village communities were beginning to develop more complex cultural patterns involving new forms of political and social organization which we are only beginning to understand. The several corpora of sealings from well-defined contexts within the burned community of Sabi Abyad 6 are key elements of the evidence which we need if

we are to evaluate ideas about community structure, the storage and transfer of goods, the definition of wealth, and its relation to emergent authority and processes of social control. We must thank Akkermans and Duistermaat and the direction of Paleorient for making this available with dispatch.

I leave to others the discussion of the issues of the social organization of Sabi Abyad and the role of nomads in the larger regional system of which Sabi Abyad must have been

a part. Instead, I wish to focus my remarks on the issue of seals, sealings, and their relation to "administration". Sealings close things so that they cannot be tampered with. The use of distinctive marks on sealings places this closure under a particular authority. Without some knowledge of the seals themselves, it is difficult to decide whether the authority was an individual, a group, an office, or an institution, though the frequencies of impressions can enable us to eliminate some of these possibilities. But the existence of seals and sealings alone do not indicate an 'administration', an organization for making decisions about the relations between activities. Typically it is the use of certain types of seals on sealings specialized for the storage or transfer of messages which manifest the existence of an administration. Without more detailed reporting of the sealings, the possible tokens, and their contexts, it is difficult to argue for more than the authorizing of goods closure at Sabi Abyad 6.

If the reader wishes to know whether there was an actual administration rather than a set of arrangements for goods storage by extended families or lineages, they will need more information on the tokens, and they will need preliminary

data on the seals and sealings comparable to those available for later corpora of sealings. In particular, while the types of sealed items (as indicated by the impressions of jars, baskets, etc. on the backs of sealings) are tabulated, and the seal impressions are described, illustrated and enumerated, there is no table cross-tabulating the appearance of the different seal impressions on the different types of sealed items for Sabi Abyad. Enrica Fiandra and her colleagues have presented such tables regularly in their preliminary reports on Arslantepe and other sites, so that assessments of their idea about administration are possible. In the future, in addition to the interesting material and ideas clearly and usefully presented by Akkermans and Duistermaat, the reader will also need information on the associations between types of seal impressions and types of sealings in each major occurrence of sealings at Sabi Abyad, paralleling those in Fiandra's exemplary preliminary studies.

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REPLY

P.M.M.G. AKKERMANS and K. DUISTERMAAT

Our paper has attempted to bring together a number of observations, hypotheses and conclusions which contribute to an understanding of the use of seals and sealings in the prehistoric Near East. We have argued that the 'traditional' explanatory models, each mainly relying upon elite groups or long-distance exchange and each with its own assumptions and speculations, do hardly or not fit the Sabi Abyad evidence. Instead we have presented another hypothesis, based on a different set of assumptions, speculations and factual evidence, relating seals and sealings to organised storage mainly on behalf of a nomadic population in Neolithic society.

The responses to our paper are widely divergent and express mixed feelings, partly perhaps echoing the personal interests and research topics of our reviewers. Particularly, the contribution of Hans Nissen reminded us of Kent Flannery's 1976 hilarious parable on the 'Real Mesoamerican Archaeologist' and his 'Skeptical Graduate Student'... The

comments mainly focus on three issues, i.e. the role of elites, the use of tokens and the relationship between nomads and sedentary people, perhaps not unexpected in view of the controversial character of these themes in archaeology in general.

Before addressing these themes, it is useful to reply first to the requests of Henry Wright and Hans Nissen for more tables and additional architectural details, respectively. Actually, this information can all be found in a recent monograph on the work at Sabi Abyad¹; we felt that repetition of this information would have enlarged our paper substantially but unnecessarily. However, we admit that the extensive report may not have been available to our reviewers in time.

1. AKKERMANS (ed.) 1996; see, e.g., the footnotes 2, 3, 11, 19 and 29 in our paper.

While summarising our basic assumptions, Reinhard Bernbeck supposes that our interpretation considers sealing to have been an administrative practice always associated with formal elites in a hierarchically structured society. However, this supposition is utterly unfounded; the association of sealings and elites is entirely his, not ours. On the contrary, we have said that from a theoretical point of view there is no *a priori* need to include elites in any system of sealing, and that from a practical point of view there is no solid evidence for any elite group at Sabi Abyad so far. The apparent absence of any elite groups *vis-à-vis* the presence of sealings at the site suggests that both may very well occur independently. Our model takes full account of this suggestion, and we wish to emphasise that within our model the system of sealing basically operates without any elite presence or elite interference (let alone any “tripartite social structure with a (settled) elite, non-elite villagers and nomads”, to use the words Bernbeck puts in our mouth). In our view, the practice of sealing initially had little or nothing to do with any elites, (re)distribution, indication of quality or quantity of goods stored, or bookkeeping. Sealings basically served a much simpler aim: the marking and protection of property (cf. Wright). The importance of such marks seems evident in the case of the large-scale storage in specific storehouses containing the properties of numerous individuals; how to recognise otherwise one’s property among the many items stored and how to prove otherwise that one is indeed the rightful owner? In this respect, sealings help considerably to minimise potential conflicts on property within a community². The immediate benefits do not only concern the owners of the sealed products but also those in charge of the storage: untouched sealings show that any item under their care is still in its original condition and that storage took place as earlier agreed.

Actually, the question whether or not (and in what form) elite groups were present at Sabi Abyad would require another paper to do it justice. However, we feel that the considerable attention given in some comments (Bernbeck, Cleuziou, Nissen) to this topic is hardly relevant at present. Our model may easily work in elite-directed societies as well (cf. the comment of Frangipane), *unless* these elites make effort to modify the system of sealing drastically to their advantage; in the latter case, we are dealing with a wholly new situation. We fully agree that the practice of sealing has an enormous potential in terms of power and manipulation, but one cannot take the use of this potential for granted. Arguing that elites

were present at Sabi Abyad (cf. Nissen) is one thing, arguing that they made specific use of the system of sealing to their advantage is another thing (again, we cannot assume *a priori* that sealings served the needs of elite groups; cf. the comment of Wright). Anyhow, in the case of Sabi Abyad, we may wonder how to reconcile the occurrence of a restricted elite group with the vast numbers of different seal impressions found at the site, the latter suggesting that the actual seals were in the hands of many persons.

Some commentators (Cleuziou, Bernbeck, Le Brun) have misunderstood our intentions when concluding that storage at Sabi Abyad exclusively comprised the stocking of property claims and that *all* sealings functioned *only* in relation with tokens. We have suggested that sealed storage at the site may have taken place in several forms, one of which is the storage of specific commodities, another the storage of property claims with the help of tokens. It goes almost without saying that the system of sealing in its most simple form concerns the sealing of actual goods, whereas the use of sealings in association with tokens is a further, complementary elaboration of the system. Both may have been simultaneously in use at Sabi Abyad. When accepting that only a part of the sealings refers to property claims, one may wonder whether the ‘discrepancy’ between the numbers of tokens and sealings noted by both Le Brun and Frangipane is justified. Frangipane is wholly right when pointing out that many of our basket sealings may refer to rather large containers and that it is, consequently, unlikely that these were used in association with tokens. However, in the case of the pottery (and stone bowl) sealings, the picture may be different: it is true that jars of all sizes appear in the level 6 structures but the sealings mainly concern vessels of small size (rim diameters varying around 10 cm, and rim thickness around 0.5 cm). Necessarily, these sealed vessels must have contained items in small quantities; tokens may have been one option, luxury goods or the like another. Bernbeck’s suggestion that tokens in sealed containers served to record agreements on animals sent along with the herdsmen is highly interesting, since it accounts for a much more active participation from the side of the sedentary groups in the practice of sealing; the initiative is in the hands of the sedentary group. However, it is not clear to us why this view should be in conflict with our ‘property claims’, i.e. why can’t tokens serve both purposes in a complementary manner? In addition, it seems clear that Bernbeck’s alternative does not account for the sealing and storage of actual goods. In principle, both ways of sealed storage (i.e. of actual products and property claims) in collective storehouses are open to the nomadic as well as the

2. Cf. HALLAQ, 1994b : 394 on the recent use of seals in the Jebel al-Akhdar of Libya.

sedentary groups in society. However, we have argued that in practice the sedentary community has little or no need to make use of these facilities; they have other means to store and protect their properties. The absence of seals is an additional argument to support our view, not its basic reason as some commentators (Cleuziou, Nissen, Bernbeck, Le Brun) seem to have concluded. The sedentary people will certainly have supported the system, because it facilitated (and contributed to the continuation of) their relationship with those who were truly in need of sealed storage, i.e. the nomadic groups. Considerable attention has been given in our paper to the relationship between the sedentary and nomadic populations. Bernbeck (and, in some way, Nissen as well) correctly points out that the difference between both groups should not be overstated and that any sharp, conceptual distinction between the 'sown' and the 'desert' is not justified, and we hasten to add we did not suggest this. We feel we have taken great care to describe the close interaction at all levels between both groups. Bernbeck's criticism that we consider the relationship between the various groups as merely economical is incorrect; we explicitly stated that sites like Sabi Abyad may have acted as points of exchange, storage and distribution but *also* as the scenes of all kinds of social engagements, such as marriages, festivities and ceremonies. We do not consider the population at Sabi Abyad to consist of "two almost completely separate groups" (Bernbeck); although we proposed a simple social and economic partition within the community at Sabi Abyad, we also emphasised the fragile and often non-durable nature of this division. In turn, this emphasis underlies – "incomprehensibly" – according to Nissen our references to some ethnographic cases. We wish to stress, once again, the fragile division between nomads and sedentaries; those who were mobile herdsmen at one time, may have been sedentary farmers at another time, and vice versa. In this respect, our storehouses were not the exclusive domain of a few persons only but in principle stood open to all members of the community, whenever they were in need of storage space ('today me, tomorrow thou'). Our 'centrally managed' storehouses simply served to store sealed properties, nothing more, nothing less. Any subsequent 'distribution' concerned only the owners of the stored items, who simply withdrew their belongings; this distribution had nothing to do with matters like 'exchange' or 'production', as Bernbeck, Le Brun and Frangipane seem to think. In our view, the actual origin of the properties or the question of how one acquires one's property is irrelevant in terms of both storage and distribution.

Actually, the close relationship at all levels between the nomads and the sedentary people seems to have been a prerequisite for the system of sealing to work. While reflecting on the various comments, it occurred to us that the practice of sealing, without the use of any additional modes of control such as written documents, had little to do with strict and anonymous, businesslike agreements but was based to a very considerable extent on mutual *trust, agreement* and *cooperation* between the parties involved. Indeed, this trust is partly bypassed in a formal manner through the use of sealings; sealings as such allow control over goods and people. However, the mere fact that a sealed item had been brought into the storehouses, i.e. that an item had been given in custody, is nowhere accounted for in the practice of sealing (more correctly, it *cannot* be accounted for, without additional devices of control). Bernbeck and Le Brun partly refer to this inconsistency when pointing out that one would expect 'property claims' to be in the hands of the 'creditors' instead of the 'debtors', as is the case in our scenario. However, we may add that this holds only if the relationship is primarily businesslike, which we feel is not the case at Sabi Abyad. When accepting that the sealing of goods and so forth at Sabi Abyad did not take place on an incidental basis but represented a continuous and well-structured event, it follows that the sealing must have served the needs of all participants to a considerable extent. In other words, the maintenance of the mutual trust must have been lucrative to all parties; basically, it ensured collaboration at all levels, then and in the future. Evidently, any violation of this trust will have put pressure on the relationship and will ultimately have led to sanctions in the form of the severance. Trust based on long-term cooperation is in the first place found within the own community; in this respect, we may suggest that our 'nomads' did not store their properties at any given site but only at their home base.

Finally, some commentators (Nissen, Cleuziou) considered some of our suggestions too far-fetched and lacking foundation. In response, we may refer to two ethnographic cases in North Africa, where storage and sealing occur side by side along lines largely similar to those of our hypothesis. First, the 'high caves' of Jebel al-Akhdar in Libya, which served as collective cereal storehouses until very recently, each containing the individual properties of numerous persons under the supervision of a storekeeper³. Local informants made it clear that the storekeeper "had to be a person worthy of

3. HALLAQ, 1994a.

trust who was known for his honesty and integrity (...). A poor man was preferred as he would be more likely to carry out with care a job which guaranteed a living to his family. (...) He was the person who supervised the grain store, who protected and defended it and who informed those who had deposited the grain in the case of any eventuality (...)”⁴. Our second example concerns the so-called ‘agadir’ of mountainous Tunisia and Morocco. These very extensive storage buildings, used in many villages until the early decades of this century, consisted of numerous small rooms, each containing the individual properties, property claims and food supplies of both sedentary and (semi-)nomadic families or other groups. The supervision of the private belongings of these people was in the hands of a chosen caretaker, living in or next to the building⁵. Evidently, one cannot take these examples as proof of our hypothesis but, nevertheless, they display certain characteristics (such as the collective storage of private properties and property claims, the cooperation between sedentaries and nomads, the importance of trust, the chosen guard) suggesting that our model may, indeed, have worked in practice.

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