Late Pre-Hispanic Stone-tool Workshops at Cayash Ragaj, Central Andes, Peru

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Abstract: This study presents the preliminary results of fieldwork conducted in 1987 at the site of Cayash Ragaj, Oyón province, as part of the third phase of the 'Huaura-Checras' research project. The investigated area covered the river basin of the Río Checras, the left-bank tributary of the upper Río Huaura, in the mountainous region of the Central Andes of Peru. At Cayash Ragaj, the remnants of a fortified settlement with stone architecture were found. The site occupies an elevated position at the confluence of the Río Checras and its right-bank tributary the Río Cayash, at an altitude of 2600–2650 m a.s.l. To the west of the settlement, three stone-tool workshops were discovered. This find has, to a large extent, expanded our understending of the characteristics of the tool industry of the Cayash culture, which occupied the upper Río Huaura basin in the 10th-16th century AD. This society produced stone tools using locally available quartzite sandstone as a source of raw material. To obtain semi-finished product for tool making, the flaking technique was used on a large scale. Specimens in form of sidescrapers, notched tools, scrapers and perforators – predominate in tool assemblages. A large part of the inventory also consists of amorphous, retouched flakes. The discovery in Cayash Ragaj of workshops where bifacially retouched leaf points were produced in relatively large amounts, leads to the conclusion that people of the Cayash culture were capable of making leaf-shaped points, a diagnostically important artefact of the Andean societies, in addition to the aforementioned flake-tools.

Keywords: South America, Peru, archaeology, Cayash culture, Late Intermediate Period and Late Horizon, stone tool manufacturing

Summario: Se presenta un informe preliminar de investigación del sitio Cayash Ragaj ubicado en la sierra de los Andes Centrales del Perú, provincia Oyón. Los trabajos fueron realizados en 1987 en el marco de la tercera etapa del proyecto 'Huaura-Checras' que abarcaba la cuenca del río Checras – el afluente izquierdo del río Huaura. En un promontorio rocoso (2600–2650 m s.n.m.) ubicado en la confluencia del río Cayash al río Checras se han descubierto ruinas del asentamiento fortificado con edificios de piedra. Al oeste del sitio se han identificado tres talleres líticos – zonas de producción de herramientas. Este hallazgo ha permitido completar la característica de los utensilios líticos usados por la gente de la cultura Cayash, que habitaban la cuenca alta del río Huaura durante los siglos X–XVI d.C. Esta sociedad ha utilizado para fabricar instrumentos líticos una materia prima local es decir la cuarcita o arenisca cuarzosa. Para obtener formas semicrudas para la producción se han utilizado mayormente la técnica de lascas. Las formas preferibles de herramientas son raederas, herramientas con muescas, raspadores y perforadores. Buena parte del inventario lo forman lascas retocadas. El hallazgo en Cayash Ragaj de taller de puntas foliáceas con retoque bifacial y una serie relativamente grande de estos artefactos permite sacar la conclusión que utillaje lítico de la cultura Cayash aparte del juego de herramientas hechas de lascas, arriba mencionadas, incluyo también puntas foliáceas un producto importante y diagnóstico de la sociedad andina.

Palabras claves: America del Sur, Perú, arqueología, cultura Cayash, Intermedio Tardío y Horizonte Tardío, artefactos de piedra

Stone tools constituted a very important element in the everyday life of Pre-Hispanic Andean societies until the 16th century. However, in contrast to pre-ceramic stone tools, those from later periods were rarely of interest to archaeologists. For the territory of the Central Andes, relatively few analyses of stone tools that were used in the final years before the Spanish conquest have been performed. Danièle Lavallée and Michèle Julien (1973) studied materials from the territory of Asto, Huancavelica province; Barbara Drobniewicz (1986) presented the results of analyses from the river basin of Río Cayash, Oyón province; Glenn S. Russel (1988) published studies of artefacts from sites on the territory of Wanka, Jauja province; Jordan T. Downey (2010) published his reflections about artefacts from sites in the area of Cerro Icchal, Sánchez Carrión province; Edwin A. Silva (2016) presented the results of his research on artefacts obtained in the area of Nevado Huandoy, Yungay and Huaylas provinces.

This paper describes the important and interesting discovery of a site of stone-tool production at Cayash

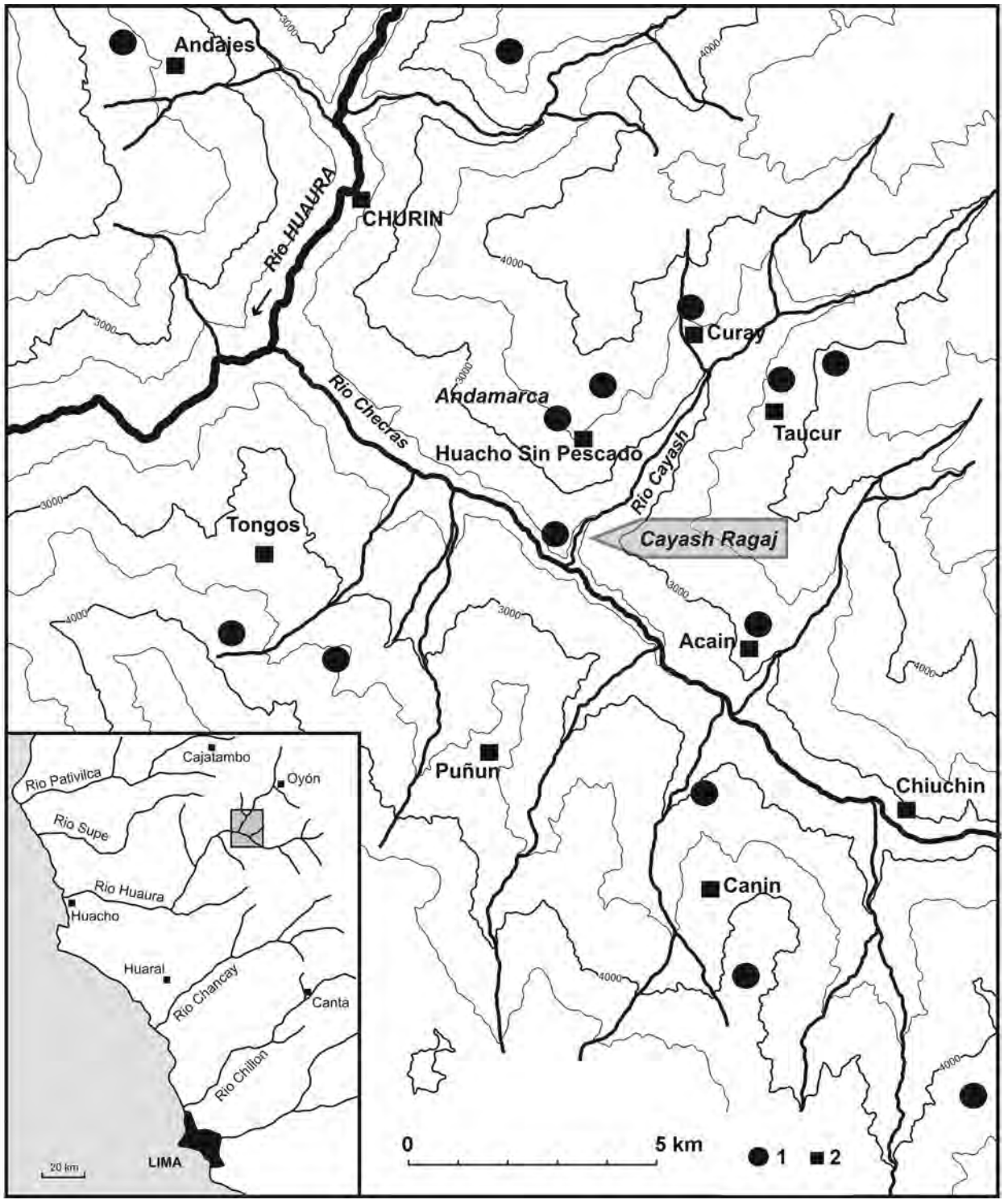

Fig. 1. Checras River area and Cayash Ragaj (E/L-4) site location: 1 – fortified settlements of the Cayash culture, 2 – contemporary villages

Ragaj (E/L-4), Oyón province, which functioned during the Late Intermediate Period (10th–15th century AD) and Late Horizon (15th–16th century AD).

Research at the site was carried out during an interdisciplinary research project called 'Huaura-Checras', conducted by the Polish Scientific Expedition in the Andes, led by Andrzej Krzanowski (Krzanowski 1980, 1986). The research was conducted in three stages – in the years 1978, 1985 and 1987 (Tunia 2010, 2013). The aim of the project was to reconstruct the Pre-Hispanic settlement processes in the high mountainous region of

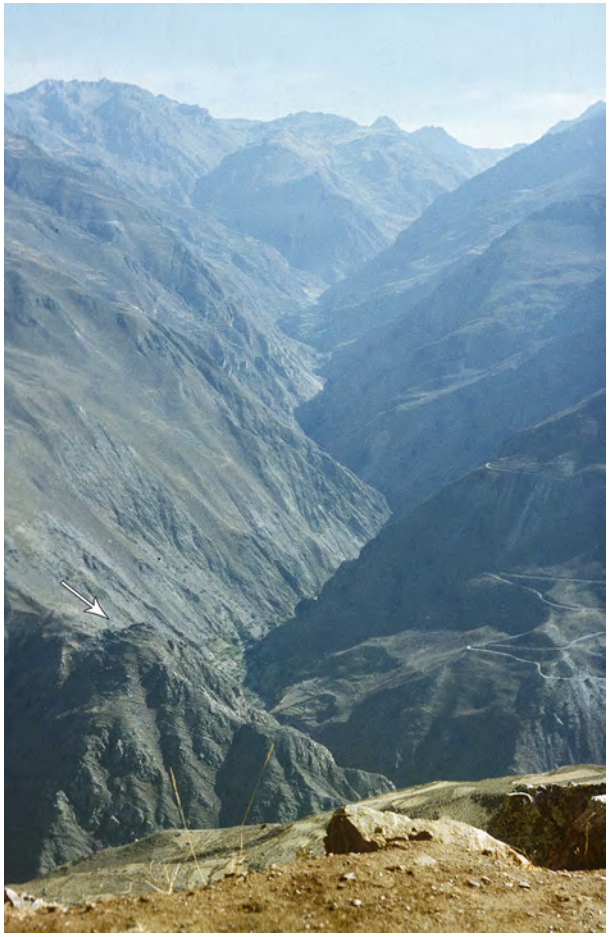

Fig. 2. Cayash Ragaj location. In the background, the Cayash River valley. Photo: K. Tunia.

the Central Andes. The research area covered the river basin of the Río Checras, the left-bank tributary of the upper Río Huaura. This terrain lies in the department of Lima, in the provinces of Oyón and Huaura (Fig. 1). It is a region of great geological complexity, which makes it also very morphologically diverse. A description of geological formations was first presented by John Cobbing (1973), and later developed by Marek Doktor in the course of his research under the Polish project in 1979 (Doktor and Drobniewicz 2000: 69–76). The largest part of the area is built of the sandstone, mudstone and shale of the Carhuaz formation. They are covered with a thin layer of rock rubble and humus used for arable fields and cattle grazing. Quartzite of Chimú formation, from the Lower Cretaceous, comprize a small proportion of its landmass, but play a key role in stone tool manufacturing. These formations consist of quartzites, ortho-quartzites and quartzite sandstones with a high degree of firmness and hardness. The study area is a high mountainous region (2000–5300m a.s.l.), where the remains of intense Pre-Hispanic settlement had previously been identified (Krzanowski 1977, 1978). Field research conducted under the 'Huaura-Checras'

Fig. 3. Cayash Ragaj as seen from the east. Photo: K. Tunia.

project showed that the settlement flourished in the Late Intermediate Period (10th–15th centuries AD) and the Late Horizon (15th–16th centuries AD), when the local community was conquered by the Incas, and the area was incorporated into the Inca empire. Nearly all settlements were fortified – stone buildings were erected in inaccessible places and surrounded by walls and ditches. They were accompanied by well-developed farming infrastructure in the form of terraces and irrigating systems. The majority of sites yielded distinctive local pottery, decorated with imprinted rings, as well as Inca pottery. Such assemblages were classified as the Cayash culture. The name was derived from the river by which the first large settlements were discovered (Krzanowski and Tunia 1986). Among other artefacts were those made of stone, which were discovered on almost all of the sites. The first description of the Cayash stone industry, based on the results of the first phase of the project in 1978, was proposed by Drobniewicz (1986: 187–248). Subsequent stages of field research provided new data, correcting and adding to the initial findings.

The settlement of Cayash Ragaj is located in the area belonging to the contemporary community of San Francisco de Huacho (Sin Pescado), Oyón province. The site occupies part of a slope on an exposed rock-and-earth promontory lying at the confluence of the Río Checras and its right-bank tributary, Río Cayash (Fig. 2). The slopes of the promontory that lead towards the river valleys are very steep (Fig. 3, 4), and it is only to the north that the slope gently rises toward the present-day village of Huacho Sin Pescado, Oyón province. The site is located at about 200–250m above the valley floor, at an altitude of 2600–2650m a.s.l.[1] The remains of the settlement occupy the top, as well as the northern and western slopes of the local culmination rising within the aforementioned promontory, composed mainly of light-coloured quartz sandstones (Fig. 5).

[1] Geographical coordinates: 10°52'41.73'S; 76°50'21.92'W

Fig. 4. Checras River valley as seen from Cayash Ragaj. Photo: K. Tunia.

Cayash Ragaj was a defensive settlement, typical of the Cayash culture. It consists of about 30 stone buildings, erected on several terraces, situated between the rock outcrops. The walls of the terraces are 2–3m high. In several places, the surfaces between the buildings are paved. Also, passages and stairs between different levels can be seen. The shape of the settlement is irregular, adapted to a very steep and rocky terrain. To the north, the site is surrounded with a ditch and a thick stone wall. The ditch is about 50–100cm deep, and approximately 80m in length. Its sides were reinforced by – partly preserved – stone walls (Fig. 6). About 60m north of this, there are traces of another ditch, roughly parallel to the first one (Fig. 7). The entire architectural construction is 150 x 90 meters, and occupies about 1.3 hectares (Fig. 8–11).

In the course of the project, the site of Cayash Ragaj was visited three times: in 1978, 1985, and 1987. During the last season of the investigations, three

Fig. 5. Cayash Ragaj as seen from the north: 1 – 'southern' ditch, 2 – 'northern' ditch, 3 – workshop area. Photo: K. Tunia.

Fig. 6. Plan of the Cayash Ragaj site: 1 – walls of the terraces, 2 – walls of the buildings, 3 – passages, 4 - 'southern' ditch, 5 – stone pavements, 6 – rock outcrops, 7 – cliff.
Measurements and drawing: A. Krzanowski.

stone-tool workshops were found to the west of the settlement, lying at short distances one from another. Concentrations of quartzite sandstone artefacts were found where these tools had once been produced. The concentration designated as 'A' was located about 5m to the south of the ditch separating the settlement from the slope rising above it. It was approximately 5m in diameter. Concentration 'B' was located on a level part of the slope, about 50m to the west of the houses belonging to the settlement. It was approximately 7m in diameter. Concentration 'C' – the largest one – was about 80 m to the west of the houses, on a small terrace occupying several dozen square meters near a steep slope descending rapidly towards the Río Checras. A narrow path cuts across this concentration, leading from the Cayash estuary to Checras to the village of

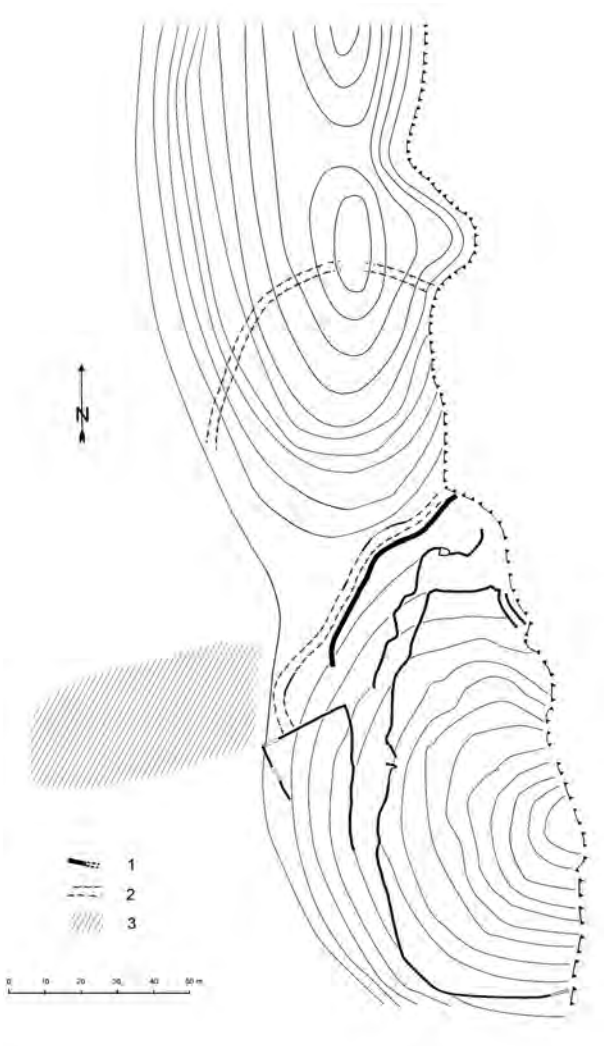

Fig. 7. Sketch of the Cayash Ragaj site: 1 – external walls of the site, 2 – ditches, 3 – workshop area. Drawn: K. Tunia

Fig. 8. Cayash Ragaj as seen from the north. In the background, the Checras River valley. Photo: K. Tunia.

Fig. 9. Cayash Ragaj. The wall surrounding the settlement. Photo: K. Tunia.

Fig. 10. Cayash Ragaj. Small niche in the wall surrounding the settlement. Photo: K. Tunia.

Huacho Sin Pescado, Oyón province, situated above the Cayash Ragaj site. The outline of the concentrations was irregular, with a diameter of a few meters. It was partly destroyed by erosion processes and some part of the artefacts had slid towards the river down the steep slope. There was an enormous amount of artefacts in this concentration: in some places, they formed a layer of about 20cm in thickness.

Fig. 11. Cayash Ragaj. Entrance to the burial chamber in the terrace wall. Photo: K. Tunia.

Among all the sites discovered during field work in the area under study, Cayash Ragaj is the only site where not only stone tools, but also workshops – the places where tools were made – have been found. Raw material constituting the basis of tool production – ortho-quartzites, quartzite sandstones and quartzites of the Chimú formation – was obtained from the rocky outcrops of the local bedrock (Doktor and Drobniewicz 2000: 78). Typically, this material is ashen or light grey and sometimes banded. It was the dominant raw material for the Cayash culture, due to its widespread occurrence in this part of the Andes as well as the useful properties of the rock – workability and hardness. The Cayash Ragaj settlement was built on an outcrop of the Chimú formation, which also provided building material for the walls of the houses and terraces.

Most of the artefacts associated with the workshops are variously shaped flakes, approximately 1–5cm in diameter. On the ventral faces of the flakes, in the case of specimens made of raw material whose workability was of a better quality, there are often visible butts. The use of a heavy hammerstone to separate flakes from cores often resulted in a highly visible percussion mark on a flake (e. g. Fig. 14:a). Such a hammerstone, made from a river pebble, was found in the Cayash Ragaj settlement (Fig. 16:a). On their dorsal faces, most of the flakes have removal scars from earlier chipping. The nature of the raw material often results in difficulties in determining the direction of percussion. Where it is possible to determine the direction, it can be said that in many cases, the axes of the scars converge in the middle part of a flake, suggesting that these flakes were made from a discoidal core, and proving the use of the so-called Levallois technique (e.g. Fig. 14:a). On other flakes, the removal scars have irregular patterns, and in a few cases, their axes were found to be more or less parallel to one another. A relatively large number of flakes were retouched to a greater or lesser degree. Some of these specimens may correspond to endscrapers or sidescrapers with irregular scraping edges. In most cases, this retouch is directed towards the upper, dorsal face, and therefore it blunts, rather than sharpens the cutting edge. The nature of the raw material results in retouch which is irregular, and often very fine; on many specimens, it makes the impression of the edge having been crushed. Other times, it forms a serrated edge. Retouch occurs on flakes of all different sizes.

Workshop 'A'. For the analysis, almost all of the specimens were collected (101 specimens, total), leaving only the smallest ones, not exceeding 1cm, and those showing no traces of having been worked intentionally. All of the artefacts were flakes, of which 24 have been partly retouched (Fig. 17:a, b).

Workshop 'B'. One hundred forty-eight specimens were obtained from this workshop. As in the case of workshop 'A', most of the specimens were collected, apart from those that did not have any traces of intentional modification. Almost all of them were flakes. Among them, 23 had traces of retouch on the edges (Fig. 17:c; 18:a, c). One of the artefacts was a tool in the form of a perforator, made from a flake. The sides of this artefact were finely retouched. On the working edge, abrupt retouching can be seen towards the upper, ventral part. The butt part was not retouched (Fig. 18:d). There were also partly preserved leaf point (Fig. 18:b) and endscraper (Fig. 19:a).

Workshop 'C'. For the analysis, 51 specimens were collected from the surface of this workshop. Among the flakes, specimens with unretouched (Fig. 26:a-d) and retouched (Fig. 23:a, b, e; 24:a, c) edges were identified. Two of the tools were perforators made of flakes (Fig. 19:b, 25:d), two were scrapers (Fig. 25:b, c). In the assemblage, there were also three so-called serrated tools with notches retouched on the edges of elongated flakes (Fig. 24:b, d, e). Of great interest is a find consisting of several leaf points with bifacial retouch. Eleven of them – fragmentarily preserved – were broken while being worked and were left unfinished (Fig. 21:d-f; 22:a-e; 23:c, d; 25:a). Five, preserved intact, were left unfinished because of some fault in the raw material or other problems with finishing them (Fig. 20:a, b; 21:a-c). On the basis of those which were completely preserved, it can stated that these points were almond-shaped and approximately 8cm in maximum length and 4cm in width. Noteworthy is a bifacially worked specimen of

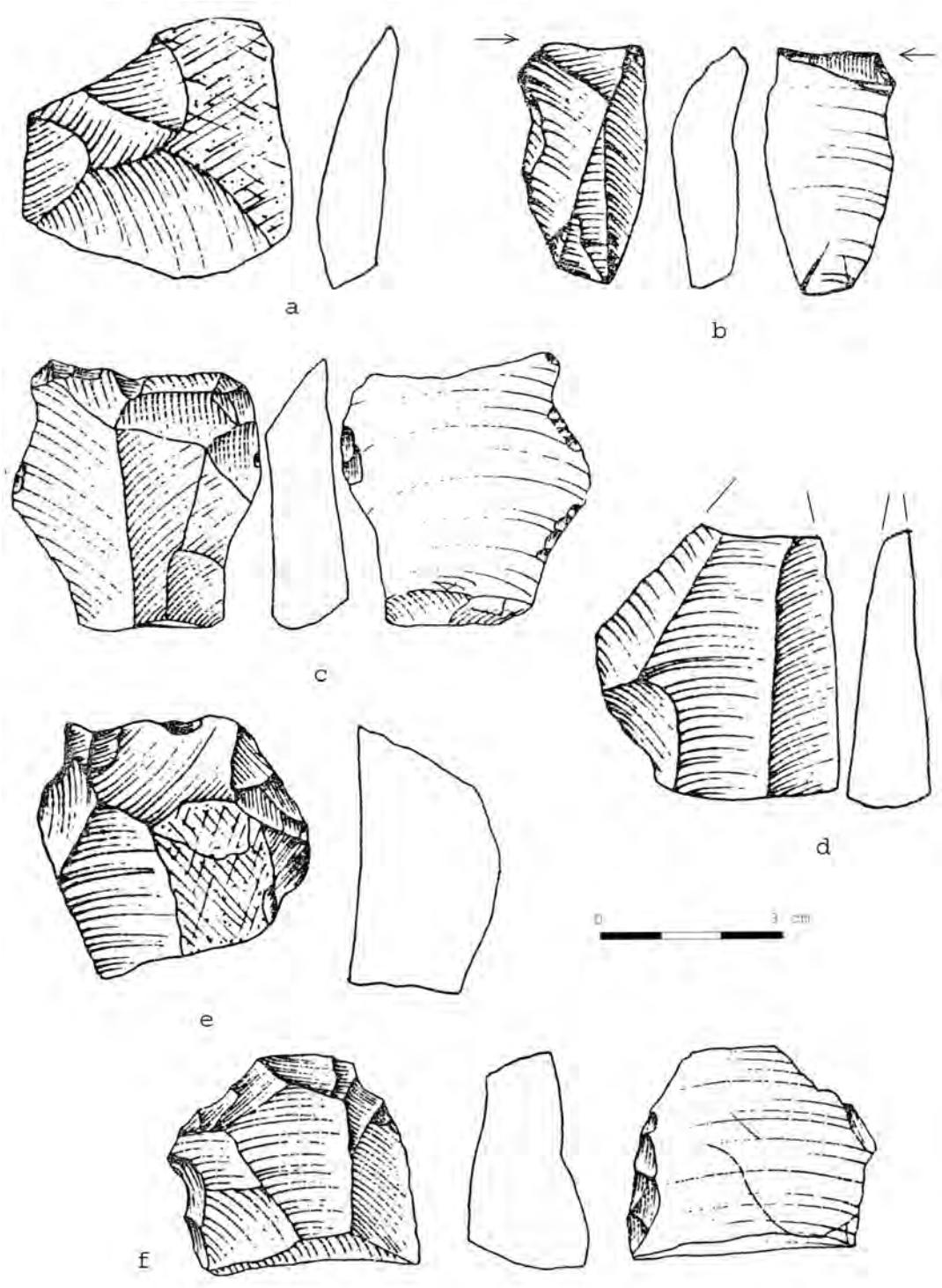

Fig. 12. Cayash Ragaj. Stone artefacts from the settlement. According to B. Drobniewicz 1986.

a smaller size with a rounded tip, 4.5cm in length and 2.5cm in width (Fig. 21:b).

In the middle part of workshop 'C' – due to practical considerations – a sample of material from a small excavation unit was collected. The sample was taken from a 50cm square, to a depth of 20cm (ground level). From there, all leaf points (43 damaged and unfinished specimens) and a sample of flakes of all sizes (0.25 - 70cm^2), were collected: three hundred fifty items, total. There were also lumps of row material of several centimeters to 15cm in diameter, not collected.

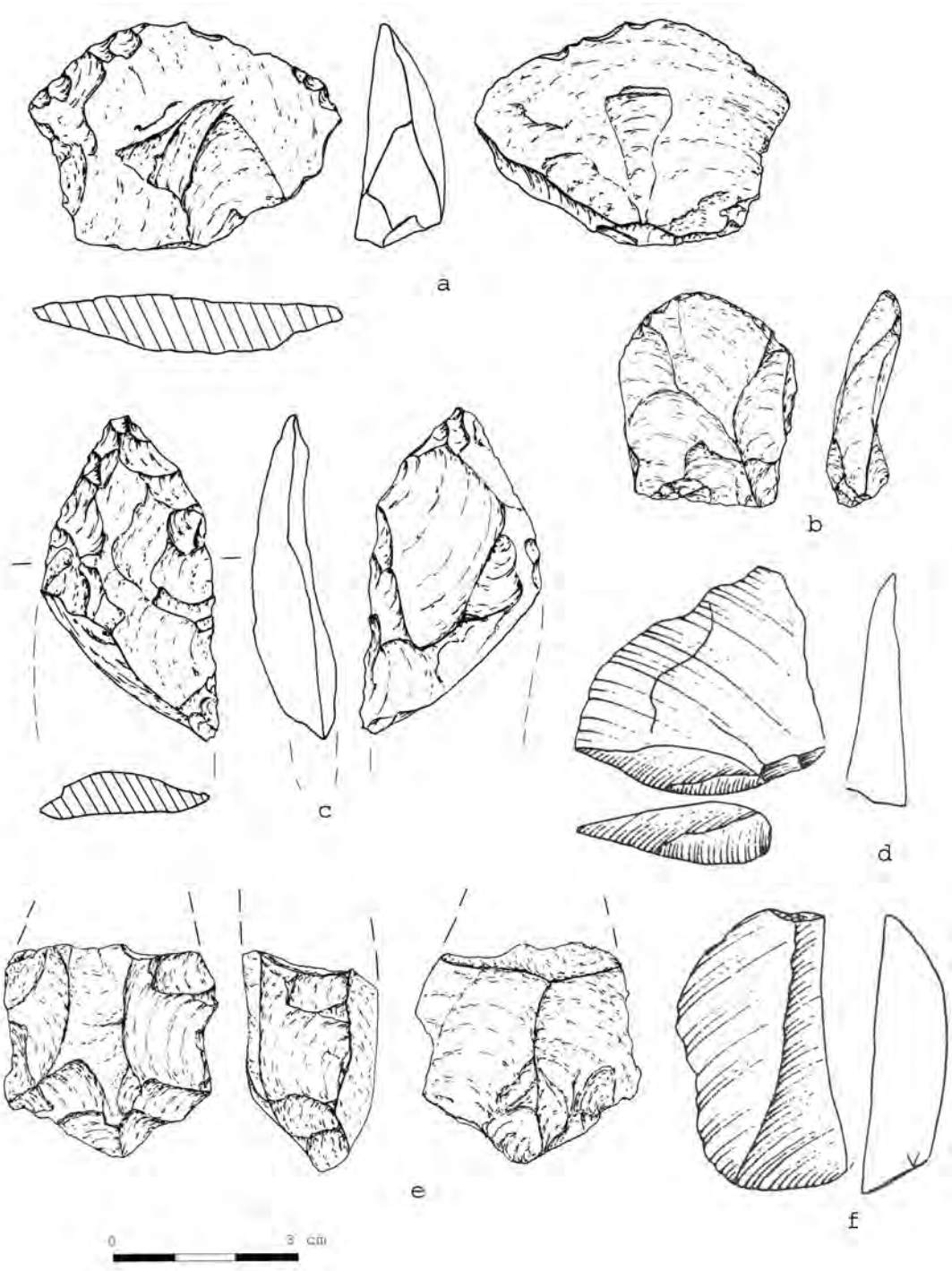

Fig. 13. Cayash Ragaj. Stone artefacts from the settlement.
Drawn: A. Dziedzic (a-c, e); d, f - according to B. Drobniewicz 1986.

It is also worth mentioning that a number of artefacts made from quartzite sandstones were found during the surface surveys at the Cayash Ragaj settlement. Eleven such artefacts, discovered in 1978, were mentioned by Drobniewicz (1986: 217–218, Fig. IV.12: c, e-i and Fig. IV.13: a, b; Fig. 12:a-f; 13:d, f). Twenty-two artefacts were found in 1985 and 1987. This assemblage includes – among others – two perforators made of flakes (Fig. 13:a; 16:b), a scraper with a rounded working edge, formed with very fine retouch and made out of pink quartzite sandstone (Fig. 13:b), a macro sidescraper (Fig. 15:a), a flake made from a discoidal core (Fig. 14:a),

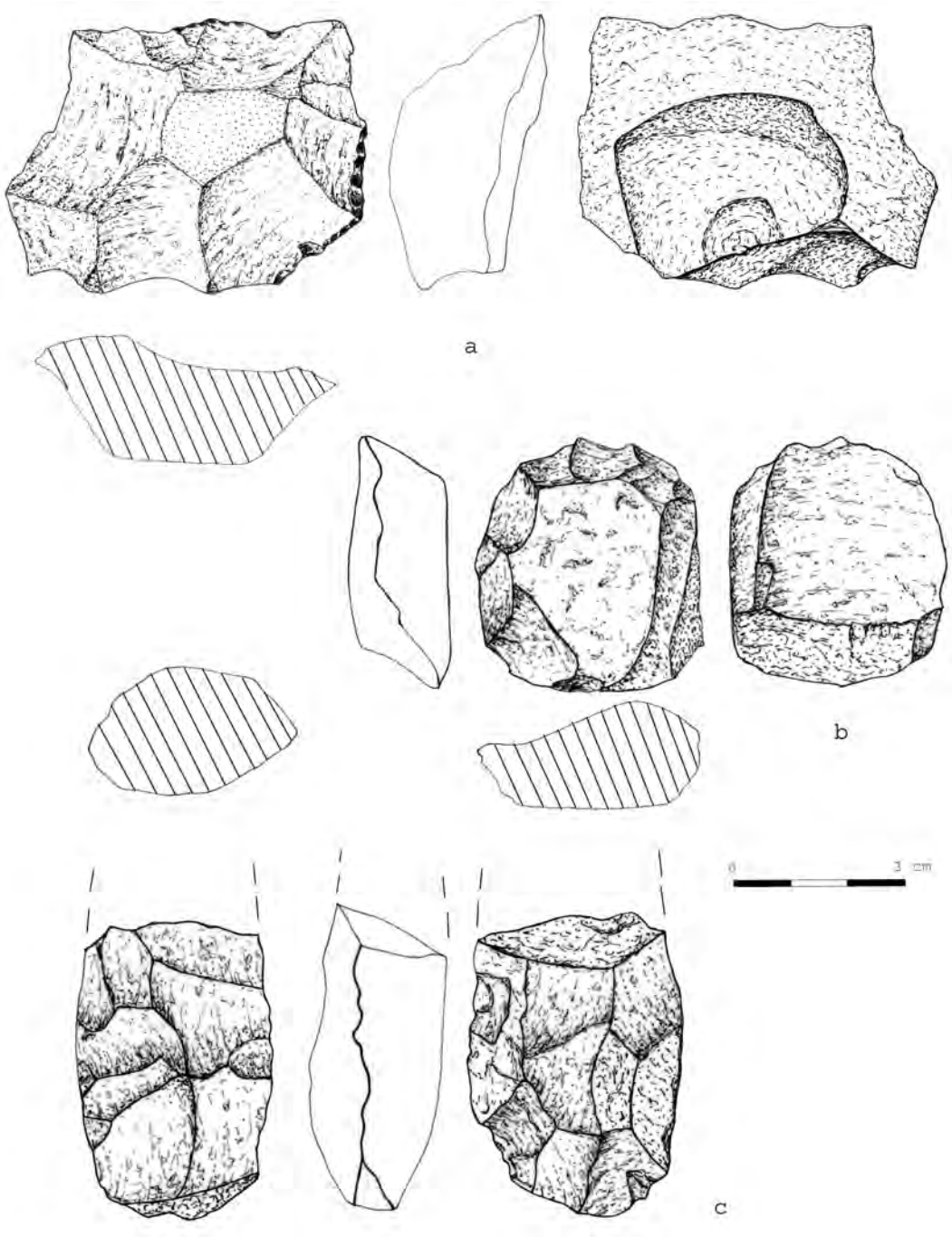

Fig. 14. Cayash Ragaj. Stone artefacts from the settlement. Drawn: A. Bułdys.

a fragment of a bifacially retouched leaf point (Fig. 13:c), two fragments of unfinished points (Fig. 13:e; 14:c), the above-mentioned hammerstone made of a river pebble (Fig. 16:a) and flakes with unretouched (Fig. 15:b) and retouched (Fig. 14:a) edges.

As Drobniewicz importantly observed, the 'Cayash industry', found at various sites in the studied region, was homogenous. According to her, this was due to the consistent use of flaking technique, in order to obtain the half-product for tool production. Flakes were made using a heavy hammerstone, which produced only wide, massive specimens. Such specimens were obtained from discoidal cores, cores with unprepared flaking surfaces, cores with prepared flaking surfaces and Levallois cores. Preferred tool types included sidescrapers, notched tools, endscrapers and perforators, all made on flakes with retouched egdes which often covered a large part of their perimeter. A significant part of the inventory also consisted of amorphous, retouched

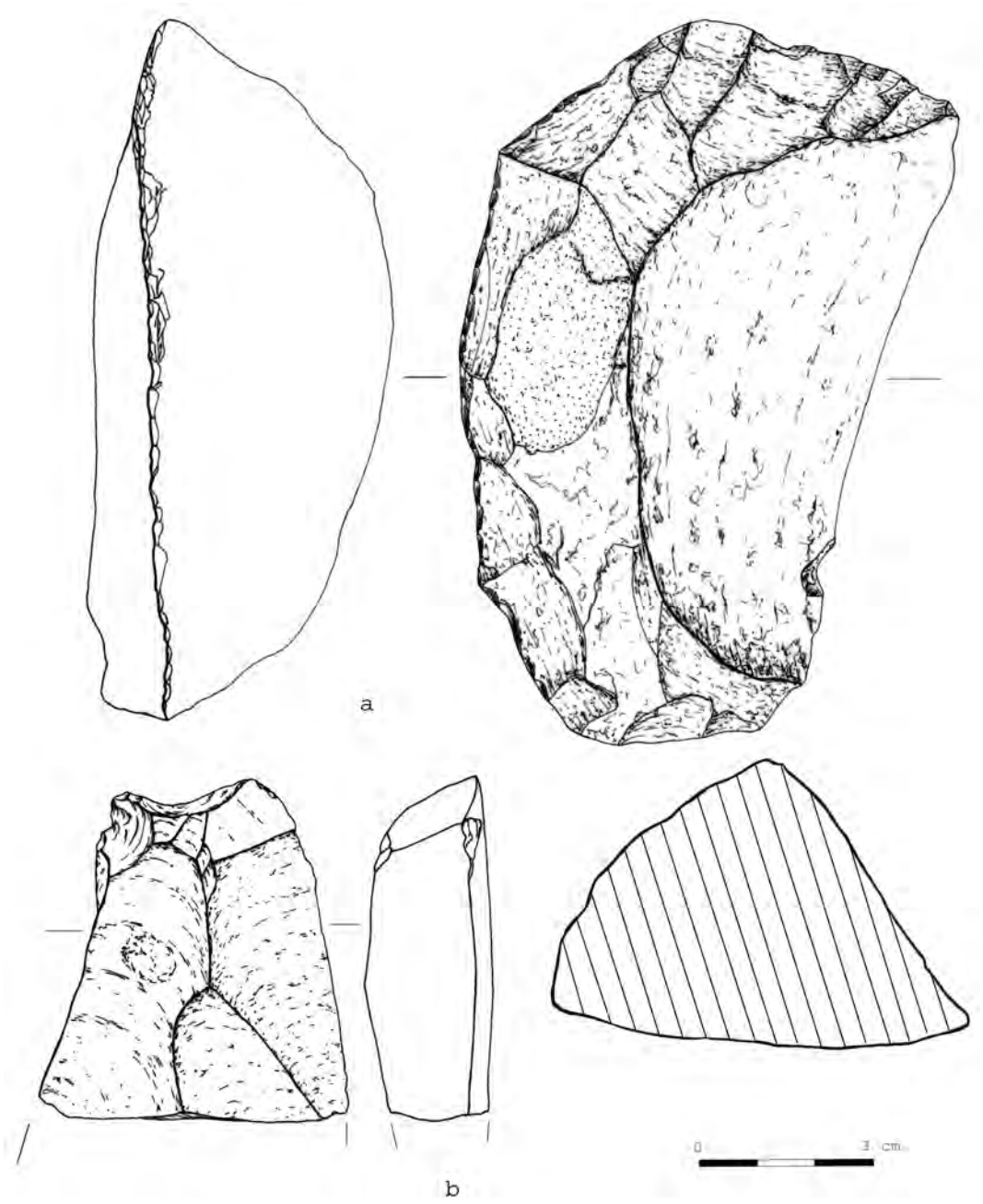

Fig. 15. Cayash Ragaj. Stone artefacts from the settlement. Drawn: A. Bułdys (a) and A. Dziedzic (b).

flakes. According to Drobniewicz (1986: 247) there were no bifacial points in the Cayash industry.

The results of the research conducted at the site of Cayash Ragaj in 1987, and particularly the discovery of workshop 'C', have significantly expanded the previous findings. The discovery of a workshop where a relatively large series of bifacially retouched leaf points were produced, leads to the conclusion that the Cayash tool industry, in addition to the aforementioned group of flake tools, also included leaf points. This thesis is supported by the fact that several single specimens of this type have been found in different locations in the studied region: Sacapampa (G/K-3; Drobniewicz 1986: 222, Fig. IV.16:b), Curcuycancha (H/I-1; Drobniewicz 1986: 223, Fig. IV.16:h), Jinicancha (E/N-2) and Cayash Ragaj (E/L-4).

Finding such a large number of stone artifacts at the outskirts of the Cayash Ragaj settlement may be an indication that stone-tool making constituted a significant part of the activity of the inhabitants of this settlement. The careful construction of the walls and the elements of fortification (defensive wall and

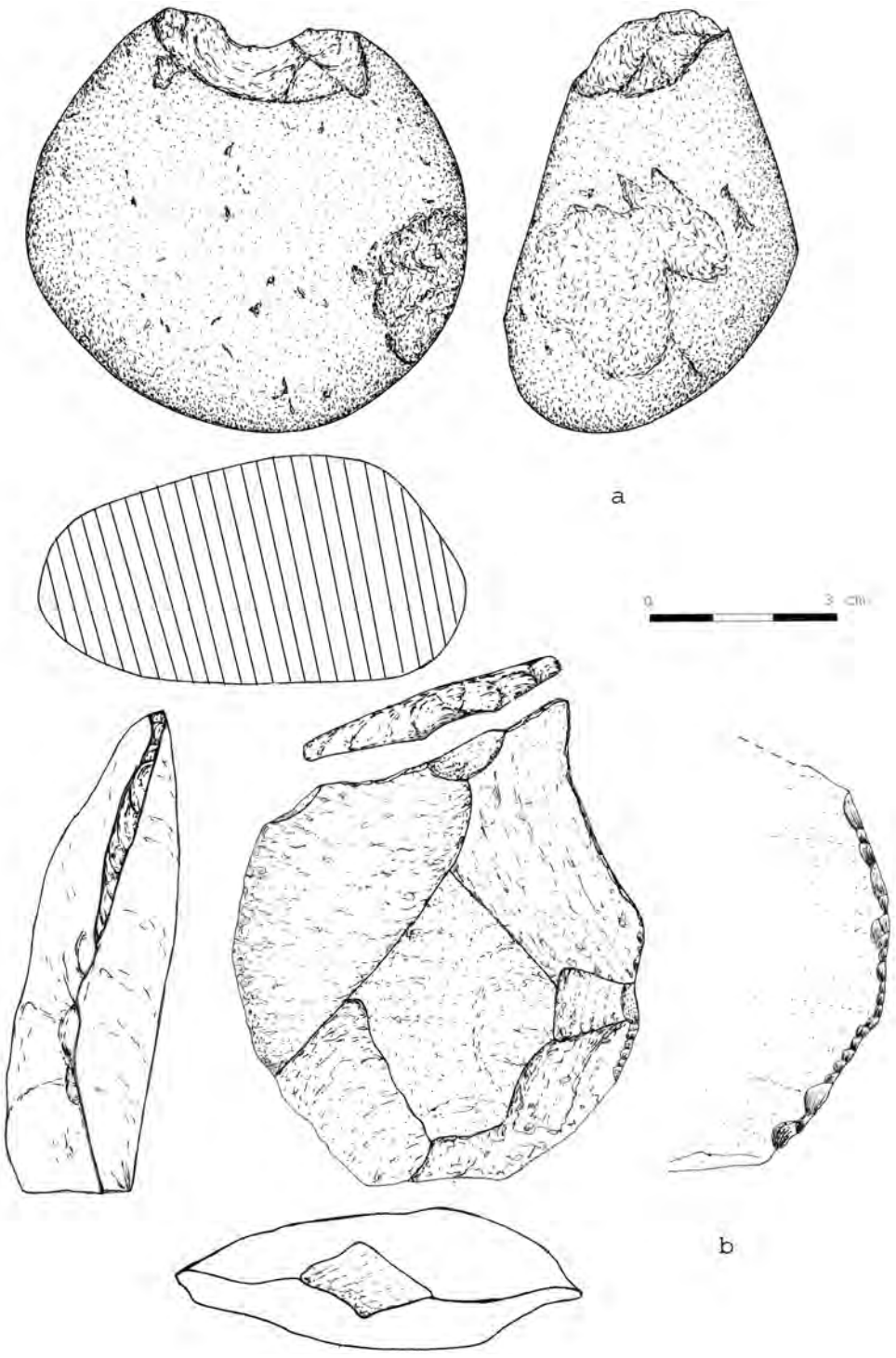

Fig. 16. Cayash Ragaj. Stone artefacts from the settlement. Drawn: A. Bułdys (a) and A. Dziedzic (b).

the ditches) appear to indicate that the settlement was a permanent, and not only an occasional, place of residence and tool manufacture by the inhabitants of nearby settlements, such as the great fortified settlement of Andamarca (E/L-1), situated about 2km to the north, and about 1000m above Cayash Ragaj. It seems that the settlement was founded at this location mainly due to the availability of raw material in form of the quartzite sandstone found in thick layers, uncontaminated by slate. Cayash Ragaj is located at an altitude of 2600–2650m a.s.l., which is well below the altitudes at which settlements of the Cayash culture are usually found. To date, all of the identified settlements of this culture are located above 3000m a.s.l. These settlements were located near cultivated fields and/or in defensive locations. In the vicinity of Cayash Ragaj,

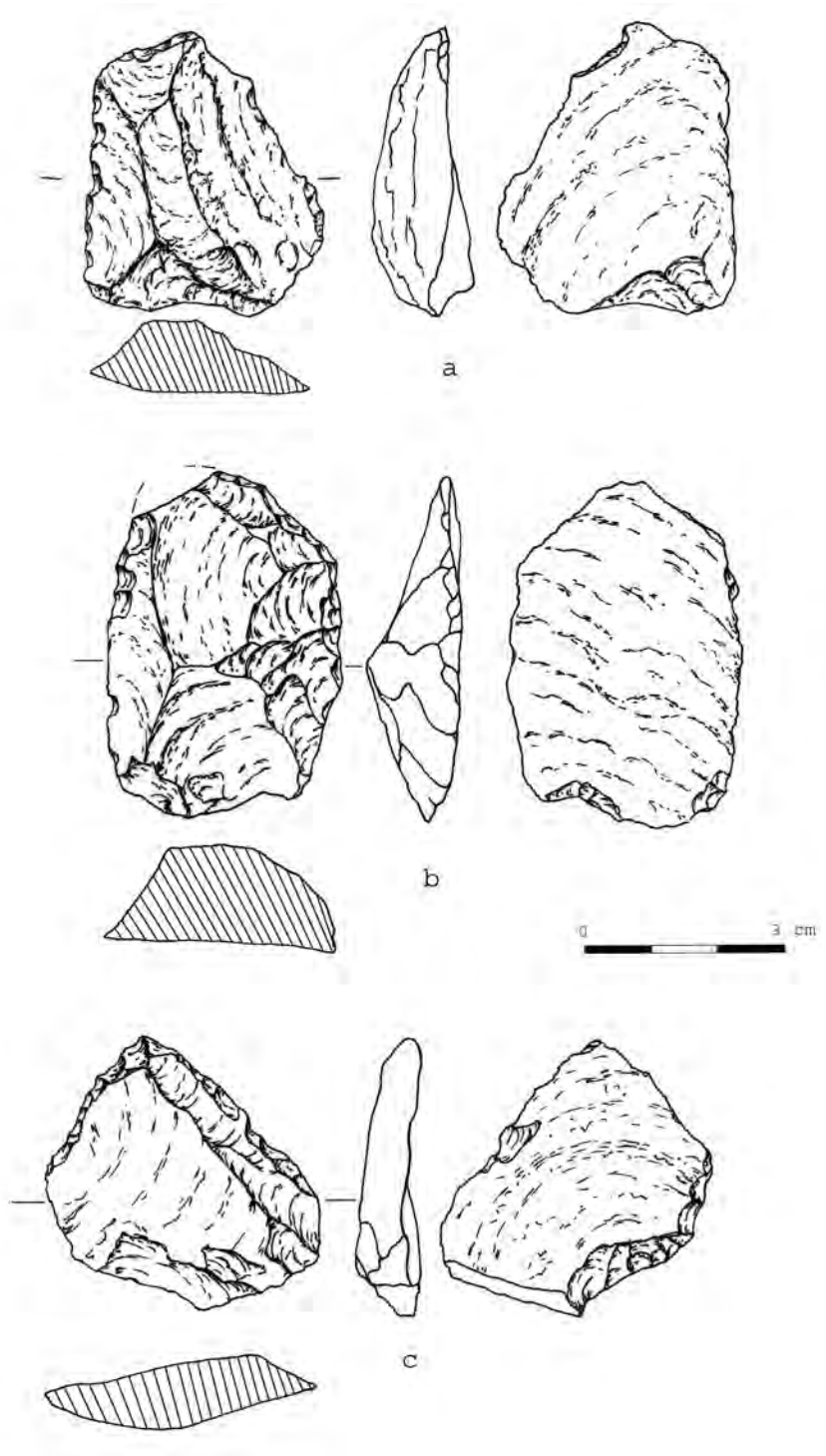

Fig. 17. Cayash Ragaj. a, b - stone artefacts from the workshop 'A', c - stone artefact from the workshop 'B'. Drawn: A. Dziedzic.

no traces of fields have been found; only to the east of the site, in the lower part of the slope descending towards the Río Cayash, exist a few terraces once used for farming (E/L-8 site). It can also be assumed that the settlement of Cayash Ragaj may have served as a watchtower or observation point due to its extensive view of the valley and the slopes descending towards Río Checras – an important local communication route (Fig. 2, 4). Thus, in light of the above, it appears that Cayash Ragaj was most likely a settlement whose inhabitants were largely engaged in the production of quartzite sandstone tools for other settlements.

Translatedy by Monika Sobejko and Mark Toussaint

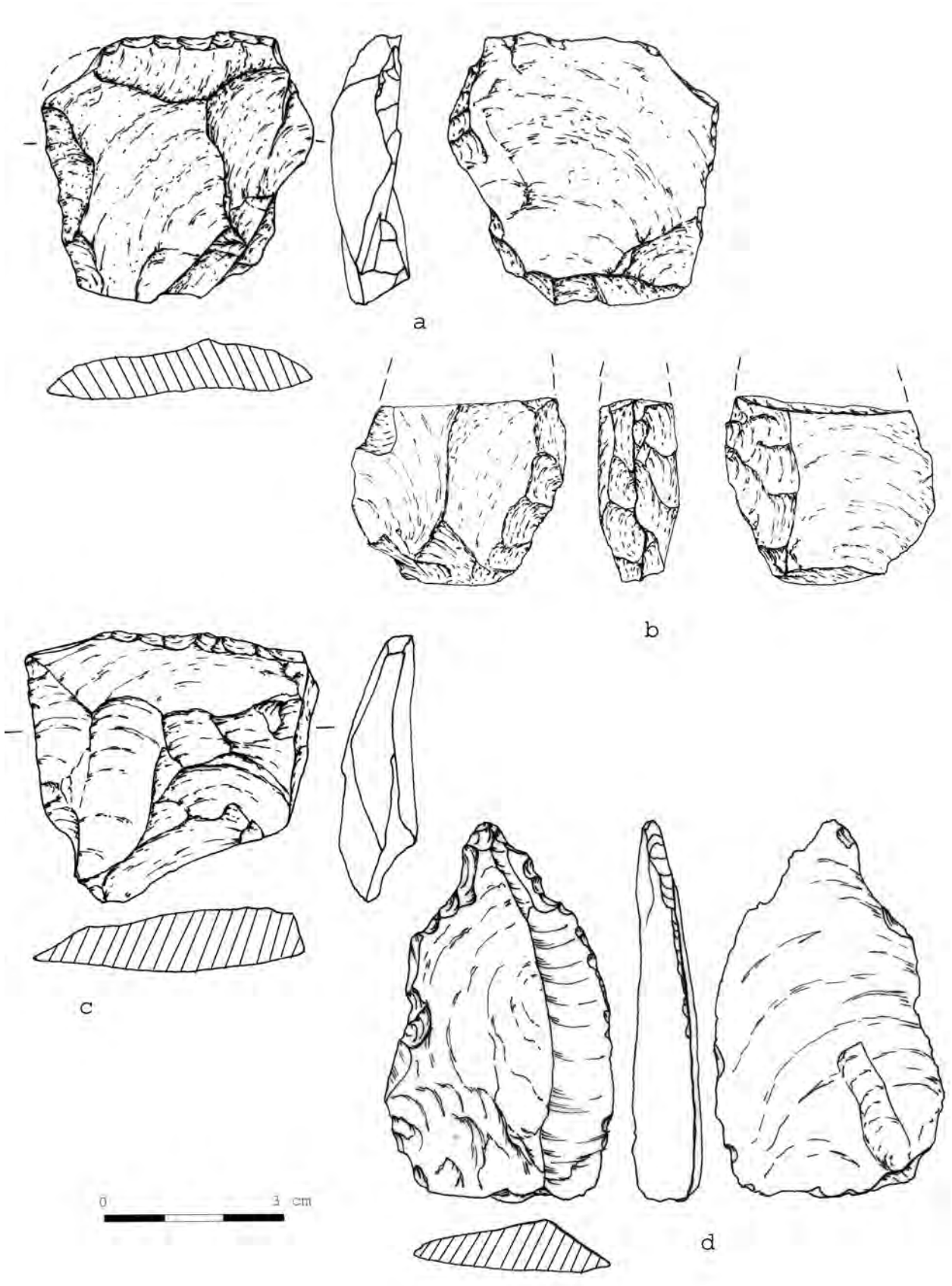

Fig. 18. Cayash Ragaj. Stone artefacts from the workshop 'B'. Drawn: A. Dziedzic.

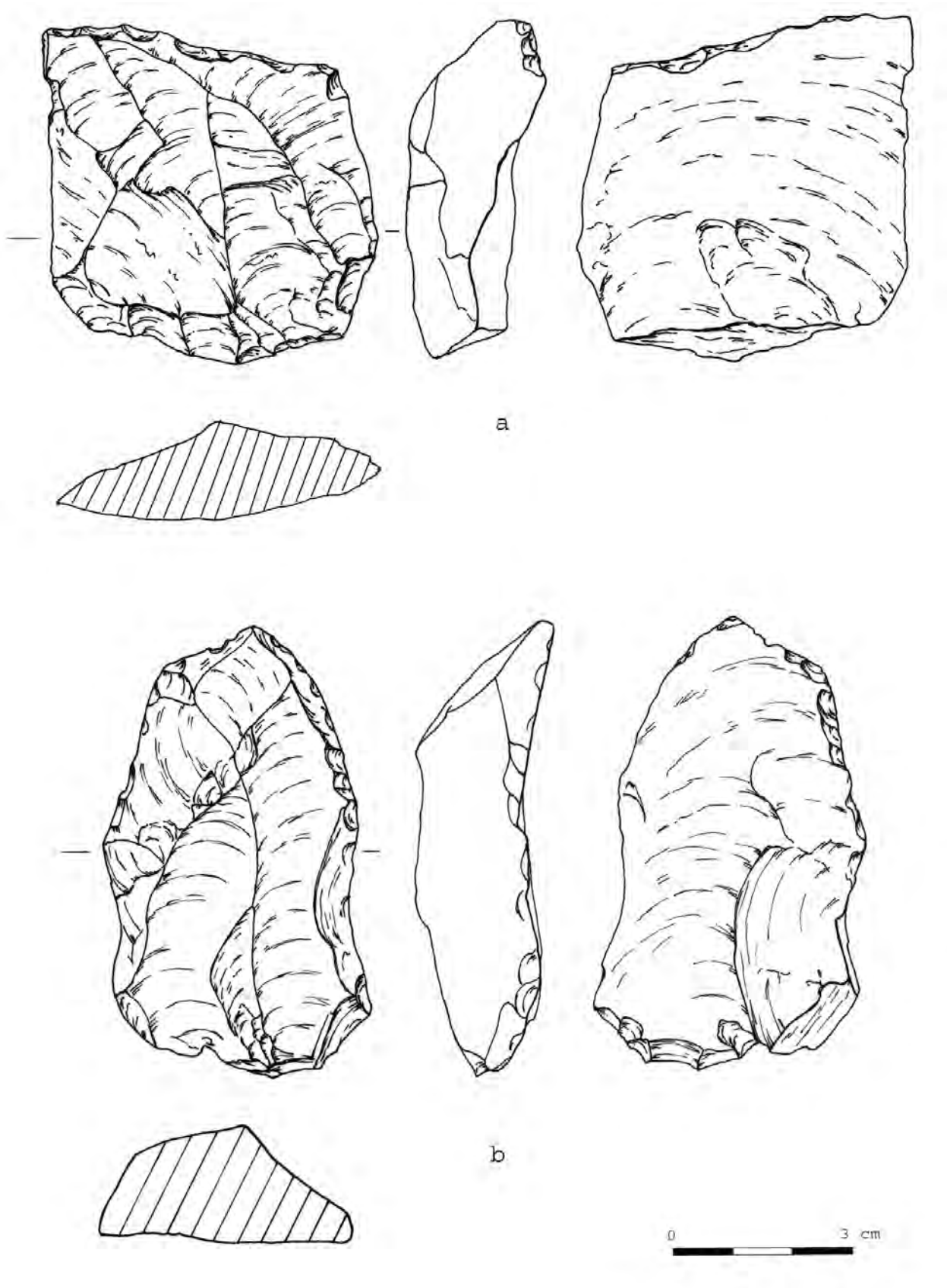

Fig. 19. Cayash Ragaj. a - stone artefact from the workshop 'B', b - stone artefact from the workshop 'C'. Drawn: A. Dziedzic.

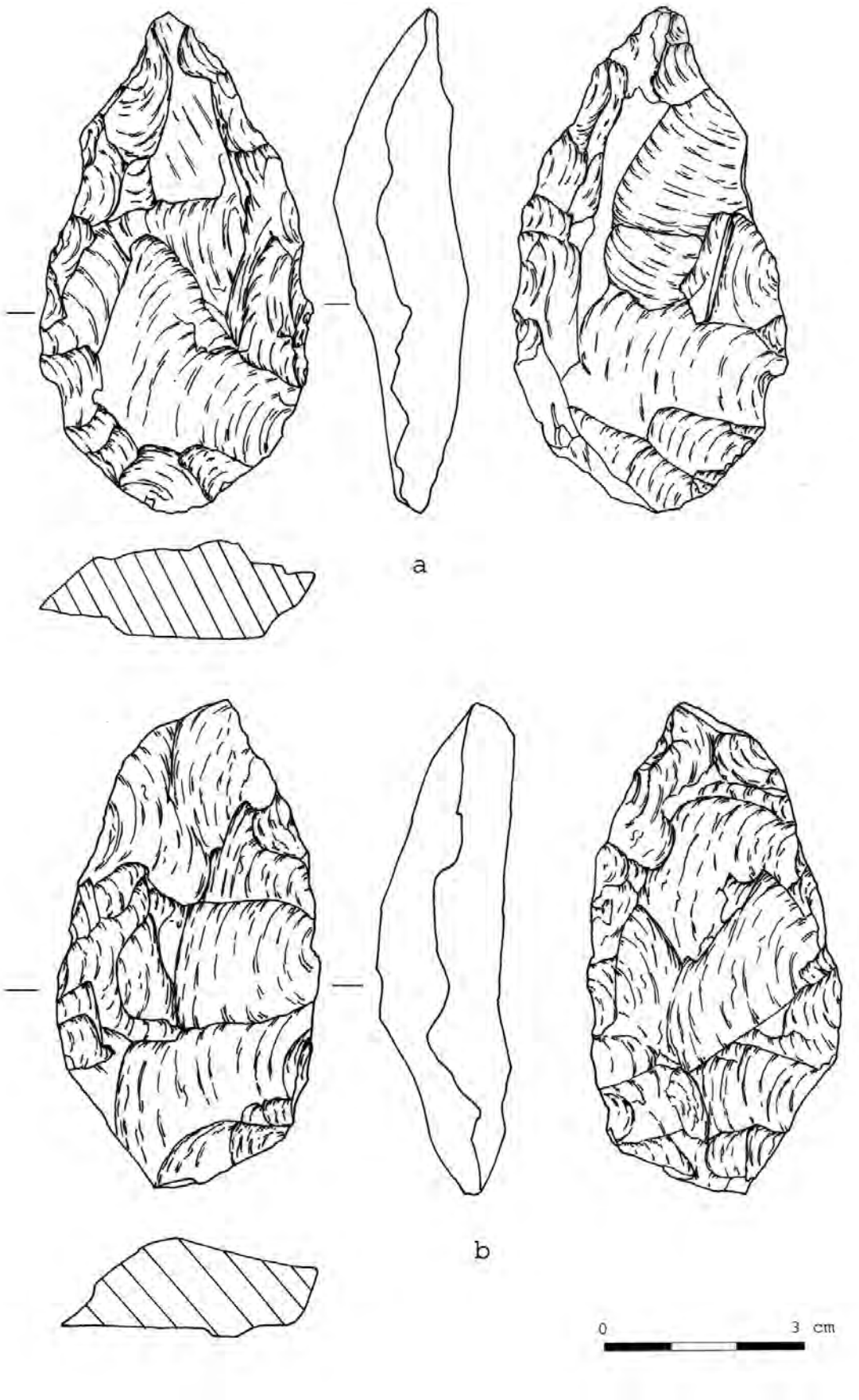

Fig. 20. Cayash Ragaj. Stone artefacts from the workshop 'C'. Drawn: A. Dziedzic.

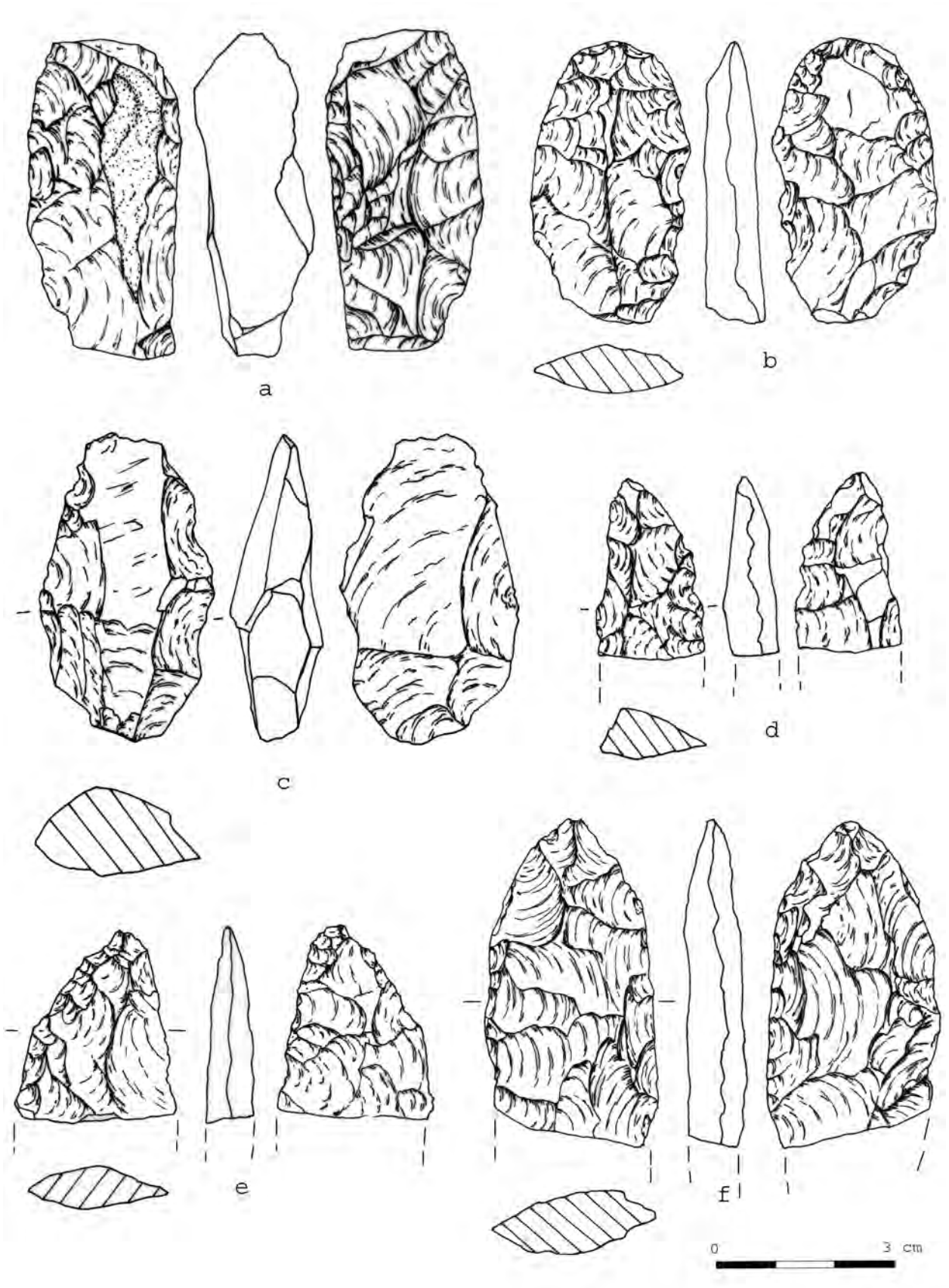

Fig. 21. Cayash Ragaj. Stone artefacts from the workshop 'C'. Drawn: A. Dziedzic.

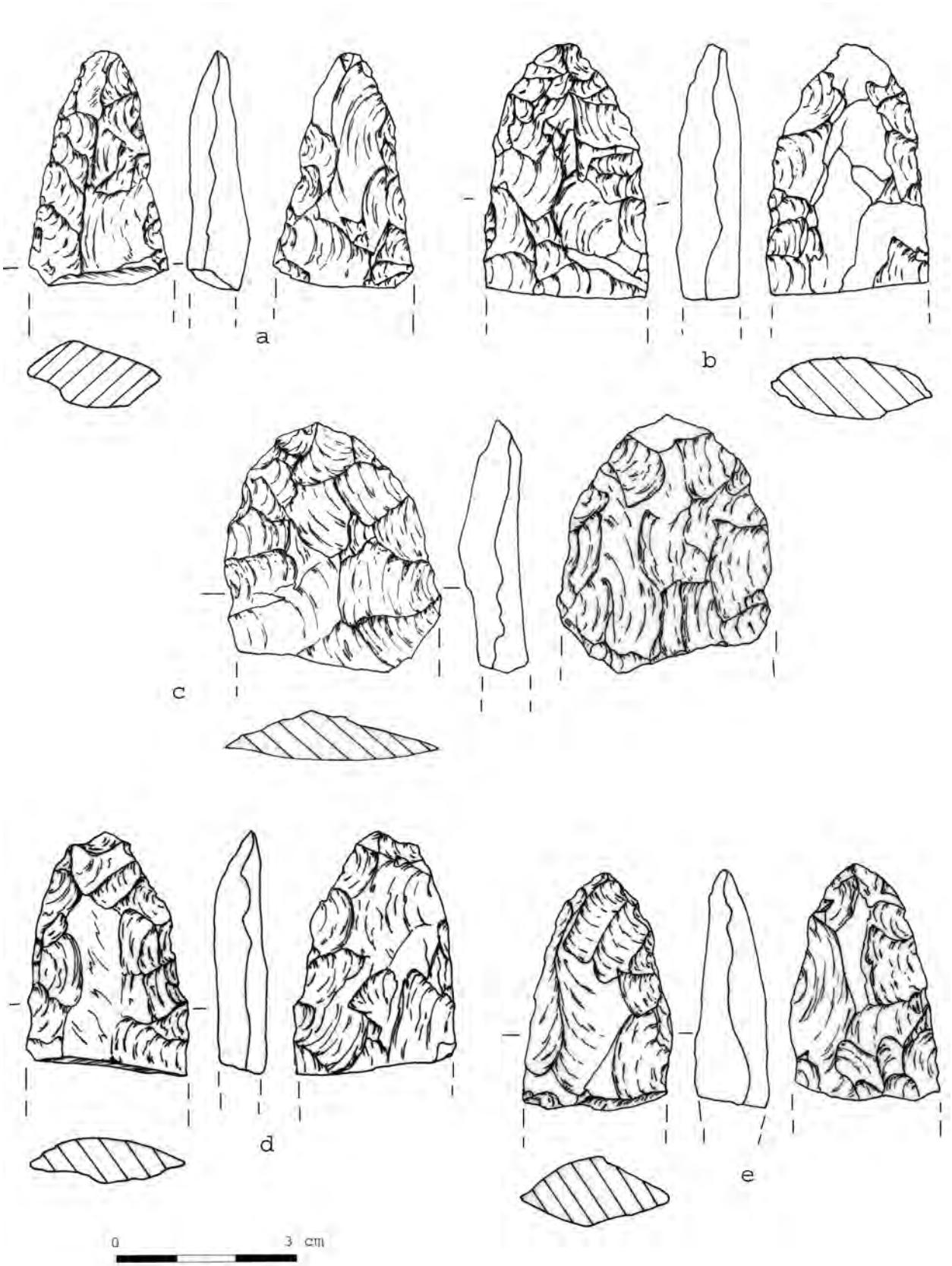

Fig. 22. Cayash Ragaj. Stone artefacts from the workshop 'C'. Drawn: A. Dziedzic.

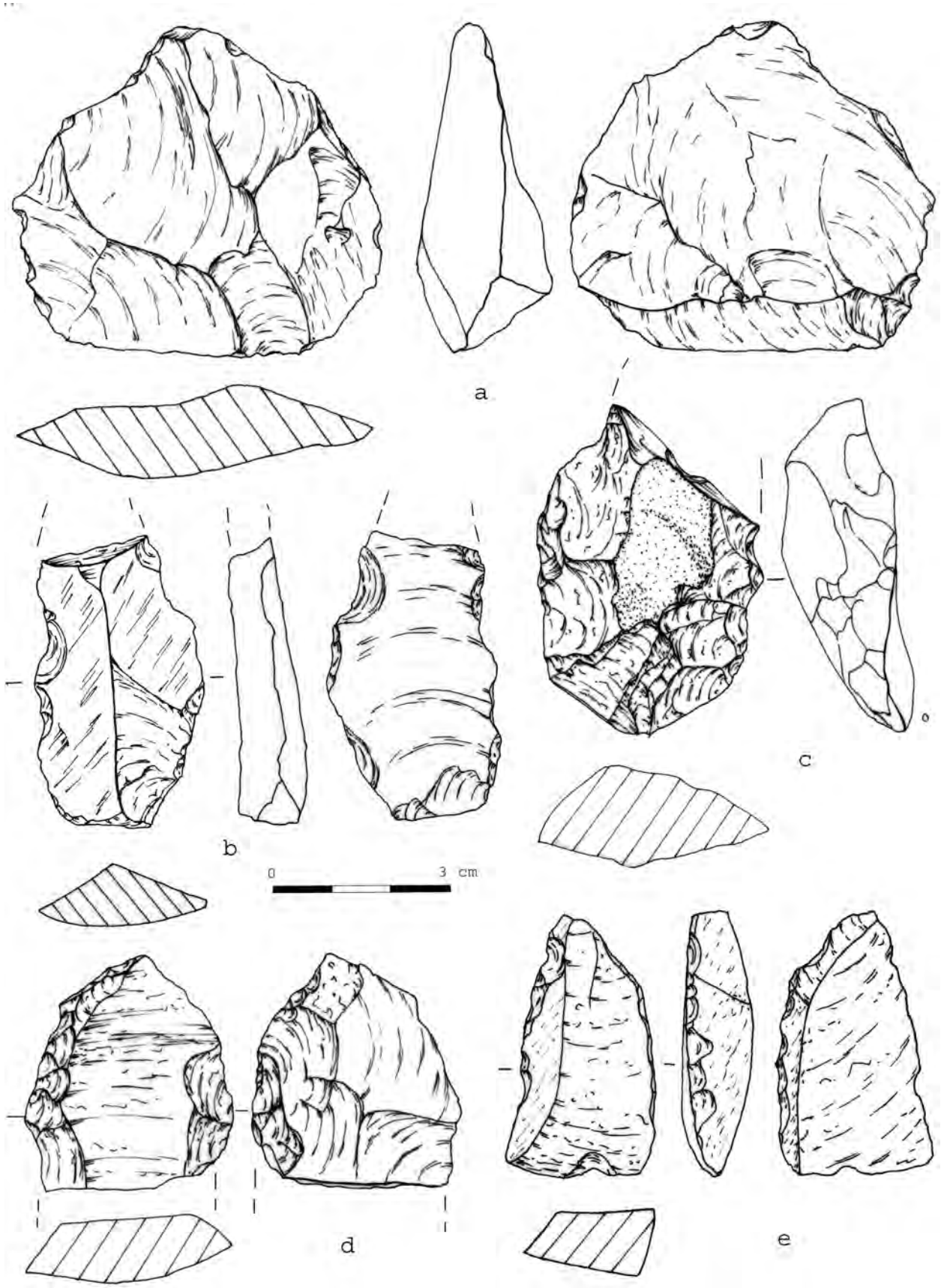

Fig. 23. Cayash Ragaj. Stone artefacts from the workshop 'C'. Drawn: A. Dziedzic.

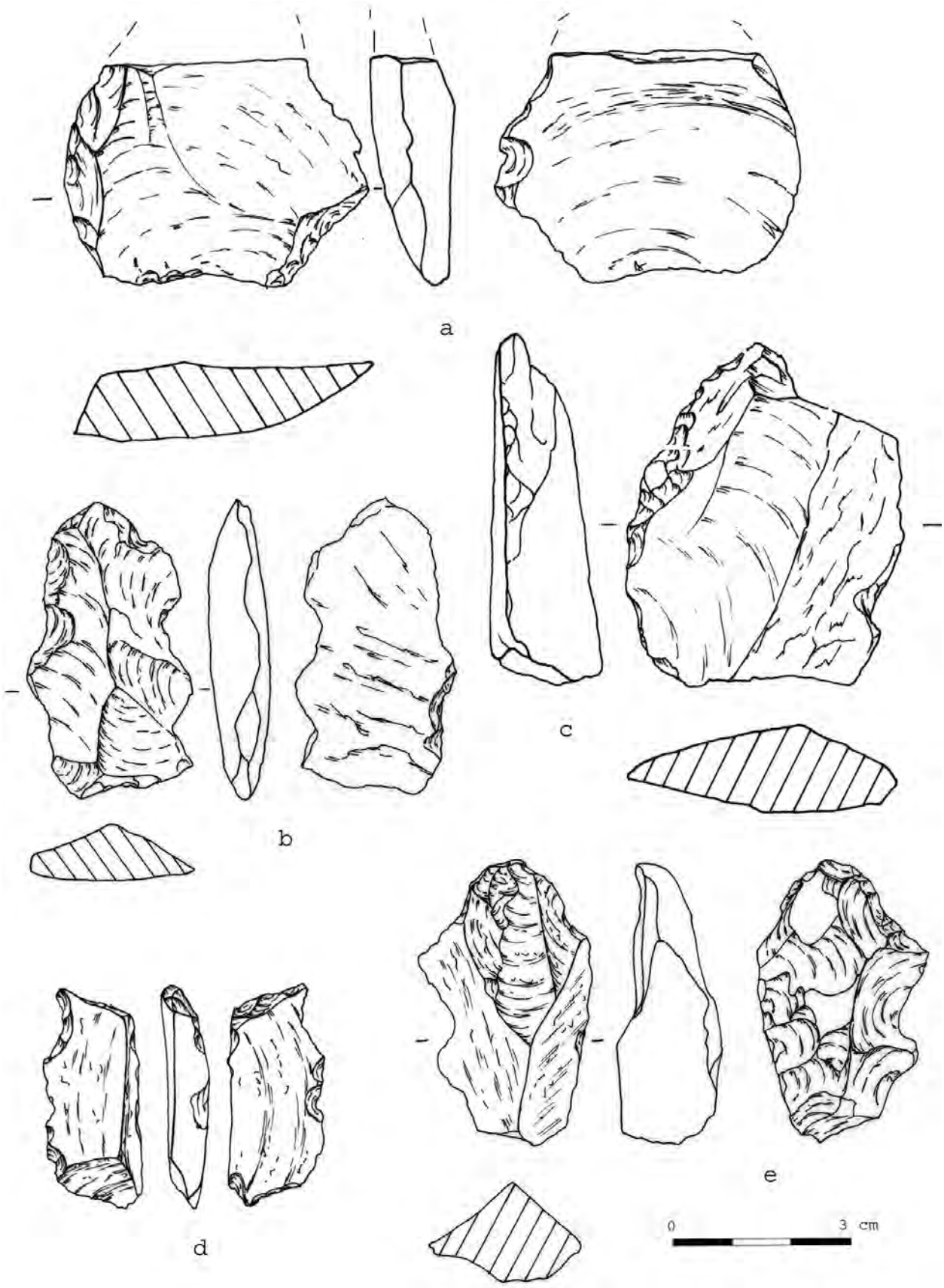

Fig. 24. Cayash Ragaj. Stone artefacts from the workshop 'C'. Drawn: A. Dziedzic.

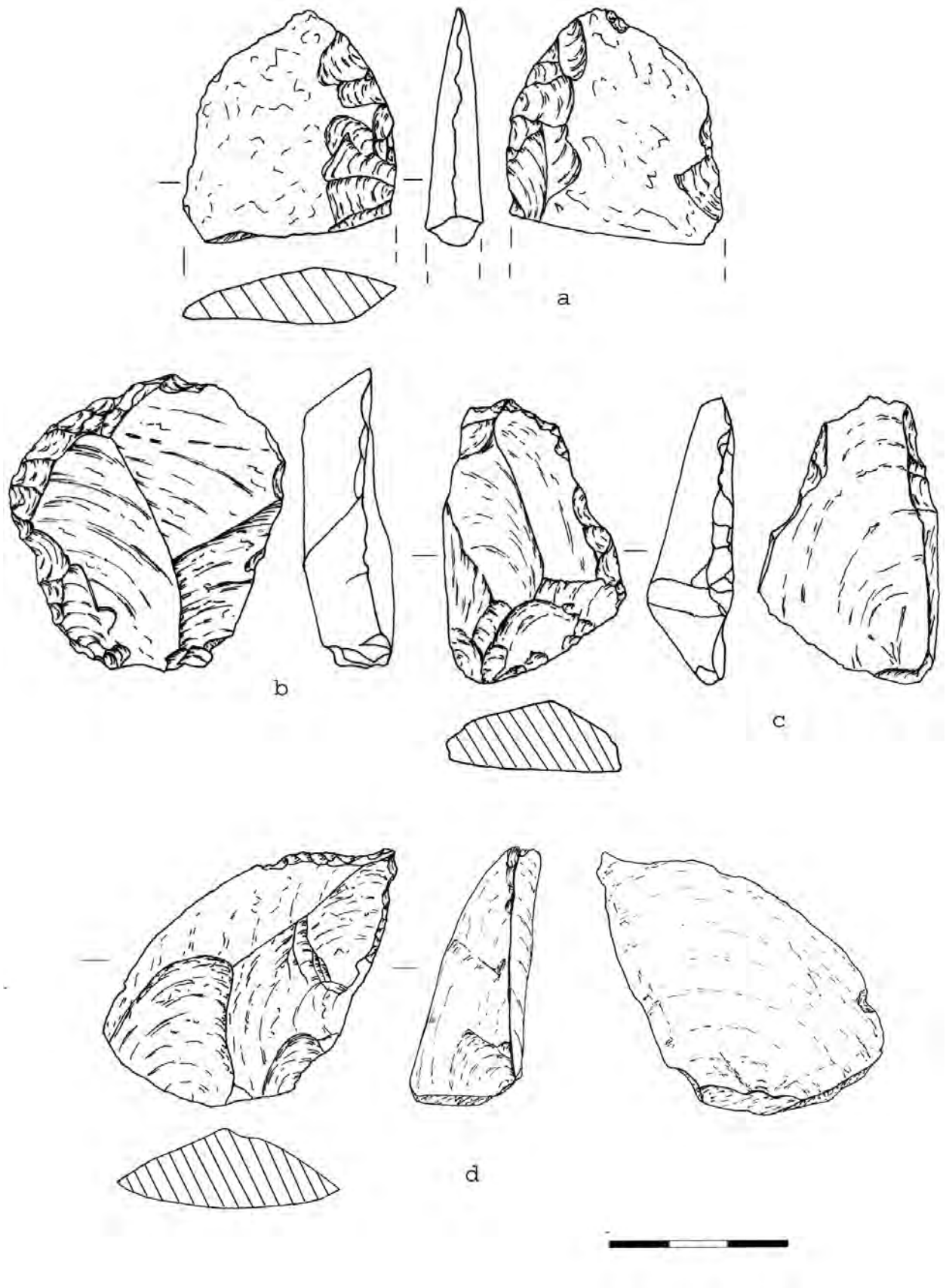

Fig. 25. Cayash Ragaj. Stone artefacts from the workshop 'C'. Drawn: A. Dziedzic.

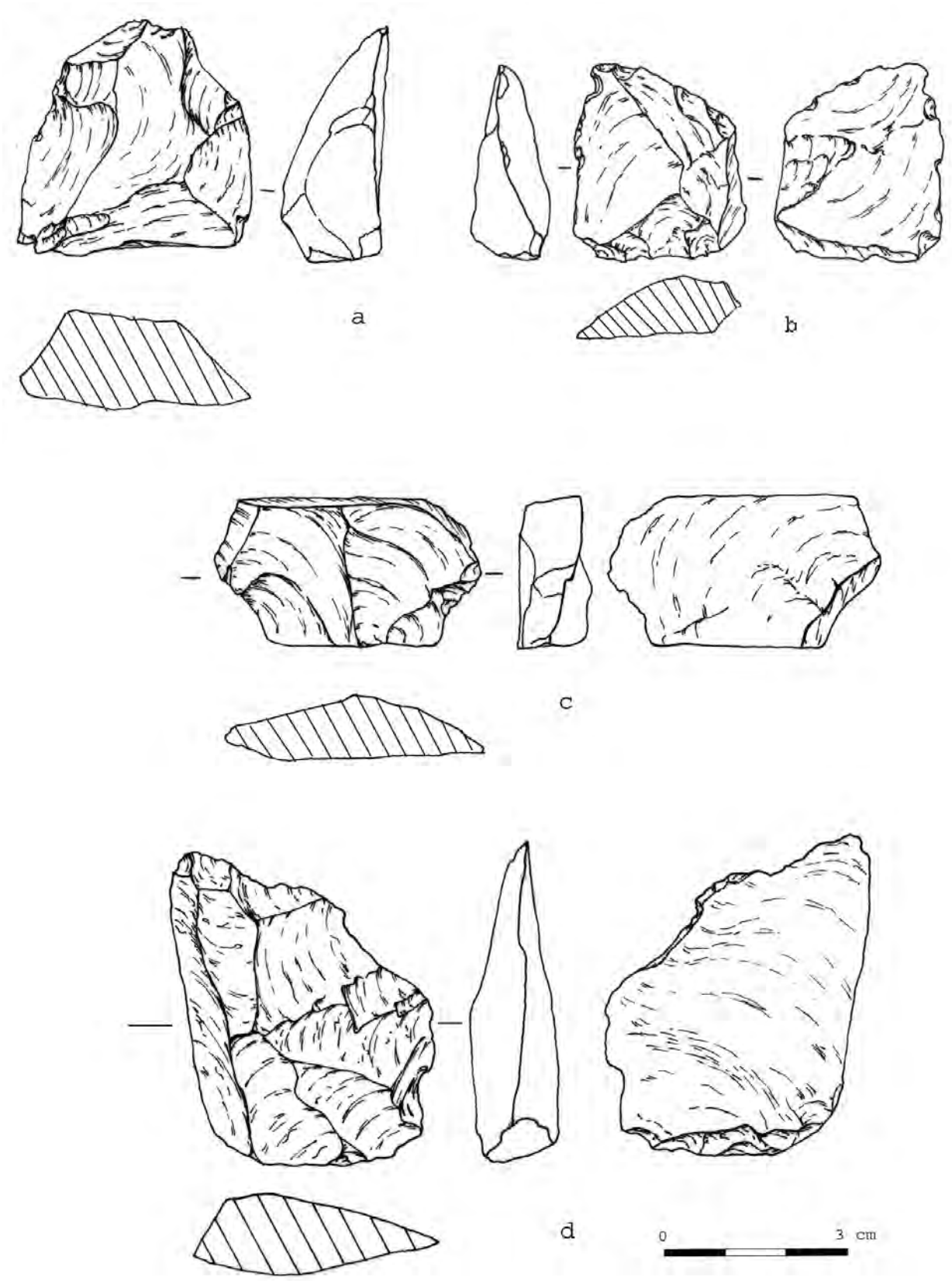

Fig. 26. Cayash Ragaj. Stone artefacts from the workshop 'C'. Drawn: A. Dziedzic.

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