

Spondylus and Long-Distance Trade in Prehistoric Europe

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Long-distance trade routes have always been an object of fascination for geographers and historians, exciting the imagination and stimulating inquiries, for the simple reason that trade routes combine universal concepts of space and time—thus making sense of the human condition in an indelible way. Linking diverse cultures and civilizations, these routes depended upon economic, social, political, cultural, and religious conditions, and reflected the entire array of institutions and ideologies embraced by the individuals who interacted along the way. As a microcosm of the essential problems of the social sciences, trade routes can help to frame the questions we ask in seeking to understand the meaning of social life in the ancient world, as well as the possible answers that we might expect.

I have been interested for a long time in ancient shells, and particularly in the *Spondylus gaederopus*. I discovered a *Spondylus* shell during my first excavation at the archaeological site of Dikili-Tash in Greek eastern Macedonia, not far from the Aegean Sea. The site was occupied from the Neolithic through the Early Bronze

Age, about 5500–3000 BC. Researching books and archaeological reports,¹ I realized that this shell, which grows only in Mediterranean waters, was exported far into Europe and in fact represented the oldest long-distance trade of a specific, identifiable resource on the continent. I also perceived an analogy to much-later trade in other precious natural resources, characterized by a complicated mixture of economic, social, and religious associations, such as the lapis lazuli trade that brought this brilliant blue stone from Afghanistan to Mesopotamia (actually Iraq),² or the well-known jade trade that crossed central and east Asia.³ Similar socioeconomic and religious implications perhaps held for other historically attested exchange systems, such as the circulation of Cowrie shells (*Cypraeidae*) from India to Africa⁴ and, at a smaller scale, that of the *Dentalium* shell in North America.⁵ I asked why a shell that is, in simple terms, just an oyster would have been traded from the Mediterranean almost to the British Channel, but I was dissatisfied with the answer repeatedly offered, that it was for “prestige.” What happened across Europe with the *Spondylus* shell seems to me a much more complicated affair and one that, we shall see, remains surrounded by many mysteries.

Two large bracelets. *Spondylus*, Hamangia, Cernavodă, 5000–4600 BC, MINAC and MNIR.



The Origin and Distribution of *Spondylus gaederopus* Shells

Bivalves of the genus *Spondylus* (Latin *spondylus*, Greek *sphondulos*, *spondulos*, vertebra) are mollusks (phylum *mollusca*) of the class Bivalvia (bivalves). The animal lacks filaments (*byssus*) with which to attach itself to the sea floor, but instead cements itself to rocks like the true oyster. The shell is more or less round but with two unequal valves, and on the outside it is brightly colored and furnished with spines and foliaceous blades (fig. 8-1). The two valves are connected with a ball-and-socket type hinge, thick enough to provide the raw material for beads and other ornaments, while the shell itself is a highly colored, very attractive purplish crimson.

There are many species of *Spondylus* around the globe, but all live only in warm seas, at depths from two to thirty meters. The shells are found relatively isolated and strongly attached to rock. As beautiful curiosities they are relatively rare: They lose some of their color if exposed on a beach, so the best specimens for ornaments must be obtained by diving, but they are difficult to find and detach. In ancient Europe the shells were valued both on the Mediterranean coasts and far inland, where they were worked, venerated, and exchanged in many different periods. In Pre-Columbian America they nourished the gods,⁶ and in the western islands of the Pacific Ocean they were until recently symbols of institutional power.⁷

The species *S. gaederopus* lives in the waters of the Mediterranean Sea and extends down the northwestern African coast, but does not occur in the Black Sea, primarily due to the temperature and the salinity of its water. Analyses of the oxygen and strontium isotopes in ancient *Spondylus* shells found in Neolithic archaeological sites in Europe have shown that they came from the Mediterranean, and not from old fossil deposits on land or from the Black Sea.⁸ As the microstructure of the shell is formed from calcite and aragonite,⁹ the large valves of *S. gaederopus* offer an ideal material for working, sculpting, and fine polishing, to produce objects for the adornment of clothing and the body (fig. 8-2). Neolithic ornaments made from *Spondylus* are superbly executed and include pendants made of the whole shell with single or multiple perforations, and the whole shell cut by a

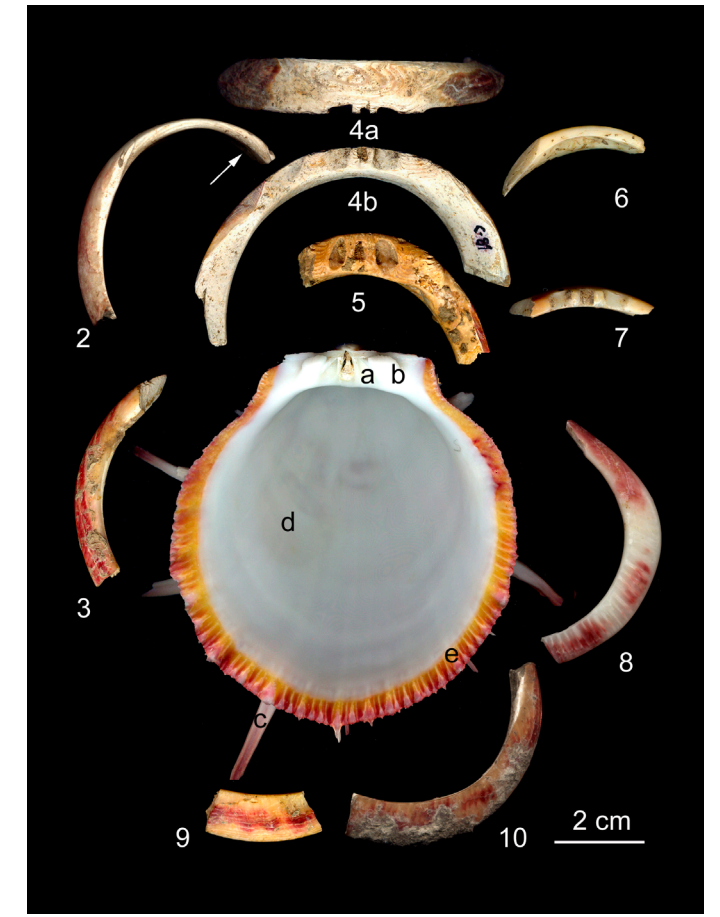
8-1. *Spondylus gaederopus* (source: Chenu, 1842).

deep notch or V-shaped incision; thin as well as very large bracelets that are round or flattened in section, made from the outer circumference of the shell; beads in the shape of discs and ovoid or rhomboidal cylinders; and occasionally pendants sculpted in the form of anthropomorphic or zoomorphic figures.

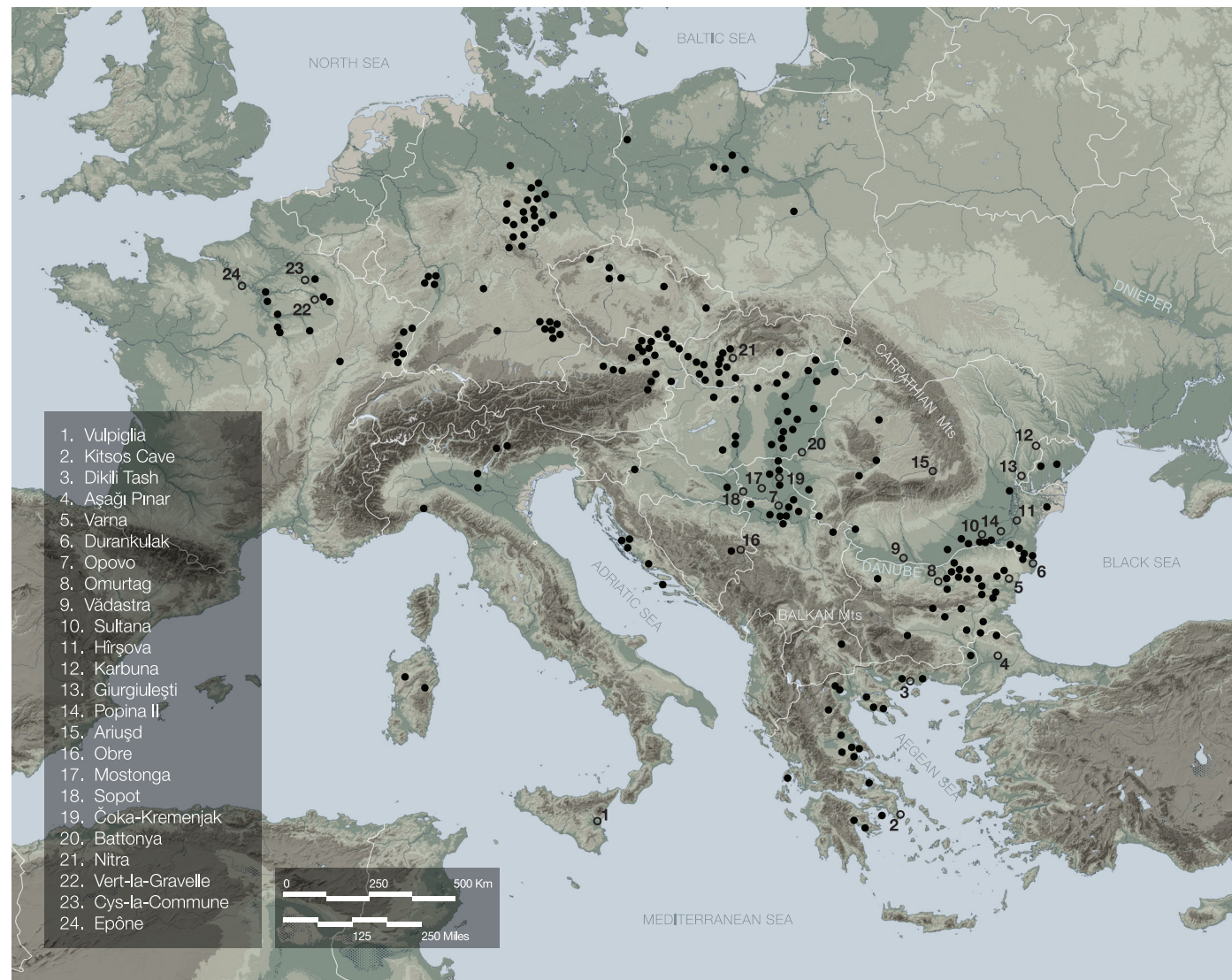
In Europe the appearance of *Spondylus* as a valuable item in long-distance trade coincided with the creation of new regional exchange networks that accompanied the introduction of farming economies, precipitating the new economic order that began the Neolithic era. The earliest farming economies in Europe evolved, I believe, as the result of a largely independent process, which took place first in the modern territory of Greece about 7500–6500 BC, whereby local foragers adopted domesticated plants and animals from the Near East.¹⁰ Within this Aegean environment the *Spondylus* was a native shell. In spite of the absence of texts and oral traditions, we can follow the *Spondylus* trade archaeologically over nearly three thousand kilometers—mirroring the trajectory of the spread of domesticated wheat, barley, legumes, cattle, and sheep northward out of Greece extending from the Aegean and the Adriatic Seas, where the shells were harvested, to France, Germany, and Poland, where they are found in the archaeological remains of settlements and cemeteries, in graves, and as isolated finds (fig. 8-3).¹¹

In the Mediterranean, the southernmost *Spondylus* beads are found in the Neolithic of Sicily and the archipelago of Malta.¹² In the Aegean region during the Neolithic, as during the Copper Age, worked *Spondylus* ornaments are commonly found in Greece and Thessaly and in Greek Macedonia and Thrace.¹³ They also occur south to the Peloponnese in Greece, in contexts related to sites of worship or sacred places such as caves. A small cut-out and contour-perforated pendant representing a bear, possibly pregnant, was found in the cave of Kitsos (Attica) and may be related to neighboring Braurôn, the site of a sanctuary of Artemis and a bear cult (fig. 8-4).

To the north, in Bulgaria, the large Neolithic and Copper Age cemeteries (dated about 4500–4200 BC) of Varna and Durankulak on the edge of the Black Sea have produced many objects fabricated from *Spondylus* with other



8-2. *Spondylus* shell and representative bracelet fragments. 1. *Spondylus*, inner side of the left valve, a. socket, b. cardinal tooth, c. spine, d. adductor scar, e. ventral margin; 2–10. bracelet fragments; the arrow points to the preserved bottom of the umbonal cavity (source: Dimitrijevic and Tripkovic, 2006, fig. 2).



8-3. The pattern of Neolithic diffusion of *Spondylus* artifacts from the Aegean and Adriatic seas to the English Channel.

shells, including *Glycymeris*,¹⁴ as well as with various objects of cut and polished stone and bone, copper, and gold (figs. 8-5, 8-6). In northeastern Bulgaria the “treasure” of the tell of Omurtag, preserved in a vase from the Copper Age culture of Karanovo VI, includes fragments of *Spondylus* bracelets, cut and polished stone tools, bone artifacts, the incisors of a pig, and a grindstone.¹⁵

North of Bulgaria, *Spondylus* artifacts are found in great numbers in Romania, the territory of the former Yugoslavia,¹⁶ Hungary, Slovakia, and the Czech Republic (Bohemia and Moravia). The tombs of old men—the richest graves—have yielded *Spondylus* artifacts in Slovakia and the necropolis of Nitra (Bandkeramik Neolithic culture, about 5500–5000 BC), and in southern Poland, where artifacts are found that combine *Spondylus* with cut and polished stone.¹⁷ During the Neolithic and Copper Age periods in Romania, *Spondylus* artifacts are present not only in the south of the country—in the Danubian areas corresponding with the cultures of Criş, Dudeşti, Hamangia, Boian, Gumelnitsa, Cernavoda I, and Cernavoda II—but also in the Carpathian Basin, Transylvania, and Banat (figs. 8-7–8-10).

In northeastern Romania, however, in the region of the Cucuteni-Tripol’ye culture, *Spondylus* artifacts appear absent, with no obvious explanation. The single known exception is the unique hoard of Karbuna, found in Moldova, south of Chisinau.¹⁸ The Karbuna hoard contained 444 copper objects as well as 270 ornaments and unfinished pieces of *Spondylus* shell hidden in a Tripol’ye A pot probably dated about 4500 BC—an exceptional indication that *Spondylus* was traded into Cucuteni-Tripol’ye societies.

Even farther north, in Austria, Bavaria, the Rhenish regions, and northwestern France, *Spondylus* artifacts also are found, usually in Neolithic graves. The farthest northwestern find was a large cylindrical *Spondylus* bead serendipitously discovered at Epône, northwest of Paris. Further west the acid nature of the soil probably did not favor the preservation of the shells, but one may wonder whether *Spondylus* artifacts could have reached Brittany and consequently the Atlantic coast. Curiously, the farther one moves away from the Adriatic-Aegean,



8-4. Small *Spondylus* pendant representative of a bear from the cave of Kitsos, Attica, Greece (after D. Vialou, Musée Nationale d’Histoire Naturelle).

8-5. Necklace and bead bracelets made from *Spondylus*, and other objects made from the canine teeth of deer, from the cemetery of the later Hamangia culture at Durankulak, Bulgaria (after H. Todorova and M. Avramova, National Museum of History, Sofia).

8-6. Diadem and bead bracelet made from *Spondylus*, and other objects made of copper, from the cemetery at Durankulak, Bulgaria (after H. Todorova and M. Avramova, National Museum of History, Sofia).

the native habitat of the *Spondylus*, the more frequently *Spondylus* artifacts appear to abound! This apparent paradox stimulates a number of questions concerning the underlying reasons for the astonishing diffusion.

The Organization and Meaning of the *Spondylus* Trade

Most of the *Spondylus* artifacts found in Europe were initially processed and then finished on the Aegean and Adriatic coasts or in farming communities not far from the sea, principally in modern Greece, Albania, Montenegro, and Croatia. *Spondylus* shells usually were not traded in a fresh or growth state or as separate unworked valves. Nevertheless, abraded valves apparently collected on beaches are found in some of the areas farthest away from the Aegean, as illustrated by discoveries at Vadastra in Romania. In fact there is more evidence for the circulation of unworked or minimally worked shells in a natural state than has been realized. Evidence of the circulation and exchange of these shells in a natural state is of two types: first, from the limited excavations of settlements, and second, from workshops often located far from their native marine habitat. In the latter category are sites like Asagi Pinar (Turkish Thrace), Orlovo (southeast Bulgaria), Obre (Bosnia), Sopot (the Middle Danube), Battonya (southeastern Hungary), and Hirsova (Romania; fig. 8-11), all dated about 5500–4000 BC. Unfinished objects occur to a small extent almost everywhere from the Carpathians to Bavaria. In addition, the typology of *Spondylus* objects reveals a great variety of forms, subtypes, and alternatives that vary from place to place, and often are specific to particular cultures and “facies” of the Neolithic and Copper Age over nearly three thousand years, 6500–3500 BC.¹⁹ This local variability in time and space suggests that the shells often were modified and reworked locally as they followed trade routes.

The pattern of diffusion of *Spondylus* artifacts through much of Europe along a southeastern to northwestern axis probably reflects distribution at the most densely inhabited places during the Neolithic and Copper Ages. The trade among these places presupposes a network of access routes and a social framework of elaborate exchange systems—including bartering, gift exchange,

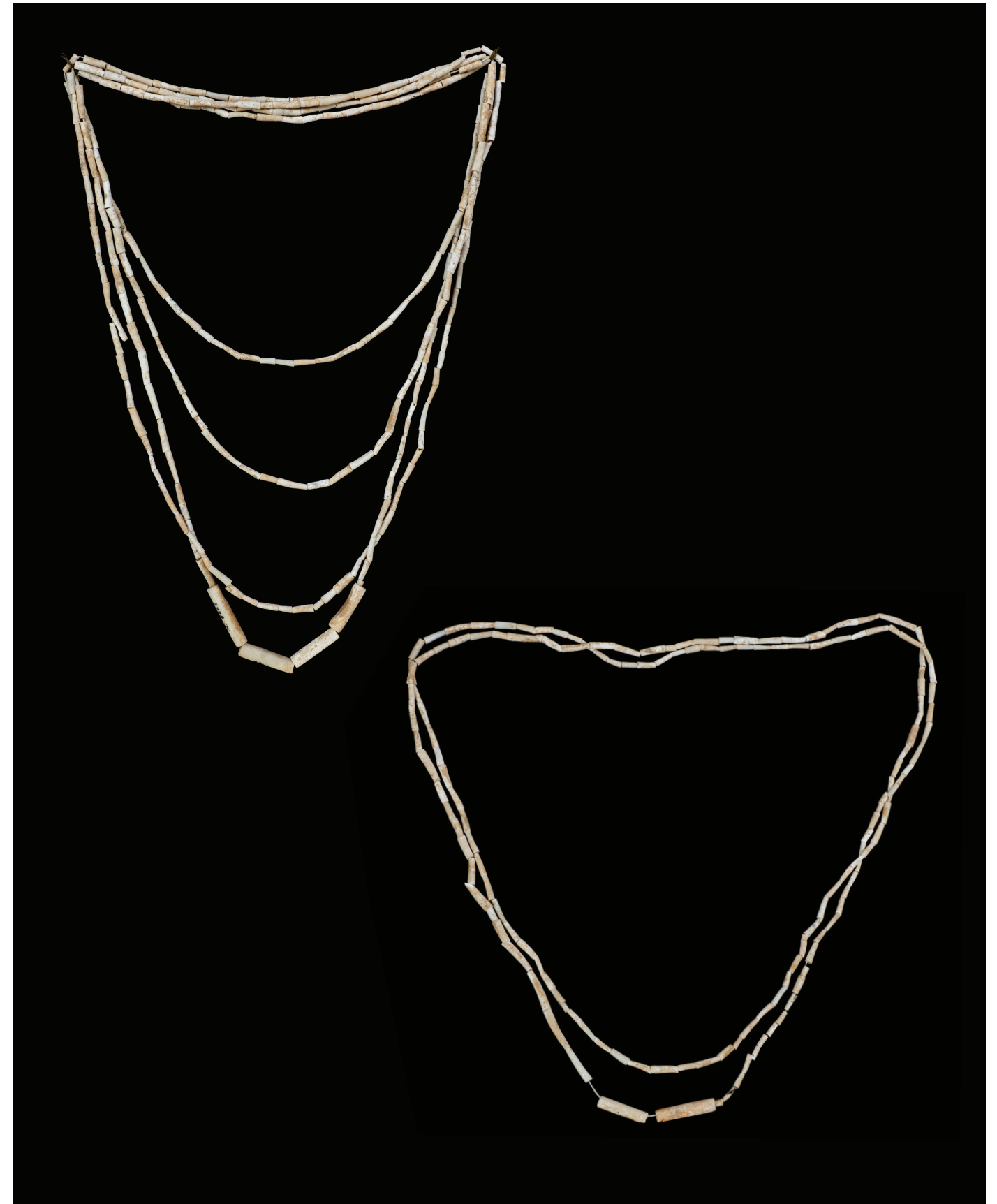


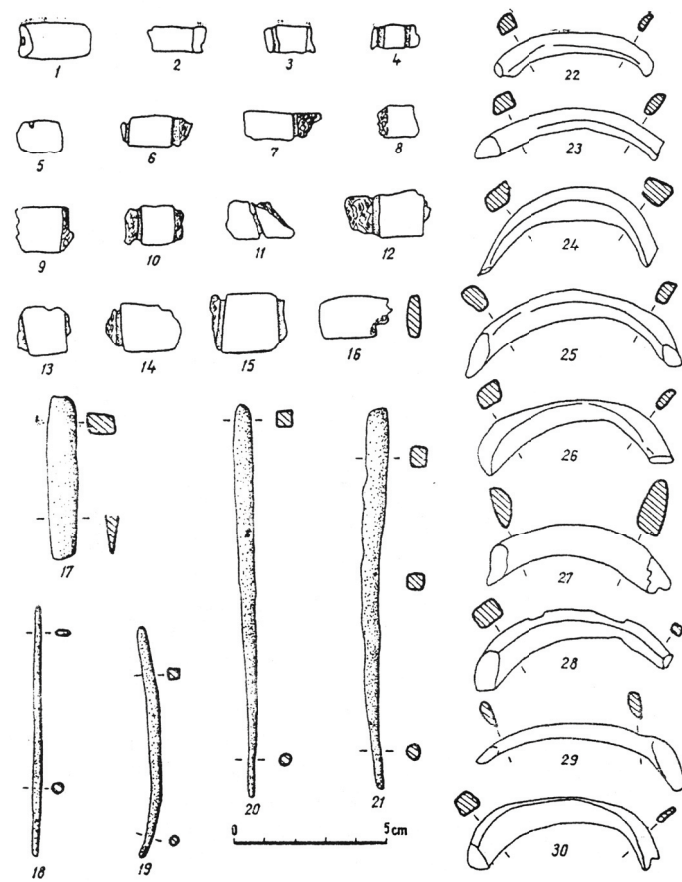
8-7 (top). Necklace. *Spondylus* and copper, Gumelnița, Brăilița, 4600–3900 BC, MBR.

8-8 (bottom). Necklace. *Spondylus* and copper, Foltesti, Vadul Catagatei, 4000–3900 BC, MBR.

8-9 (opposite: top). Necklace. *Spondylus*, Hamangia, Limanu, 5000–4600 BC, MINAC.

8-10 (opposite: bottom). Necklace. *Spondylus*, Hamangia, Limanu, 5000–4600 BC, MINAC.





8-11. Fragments of *Spondylus* bracelets, beads in the course of manufacture, and copper tools from the workshop of Hîrsova, Romania (after Comsa, 1973).

and reciprocity—such that these shells even reached somewhat isolated places, including high mountain valleys in the Carpathians. In the absence of any texts or oral histories and in spite of a growing number of extensive excavations, it still is not possible to identify particular localities as centers of concentration or redistribution.

Why was there such a desire for these shells that, once deeply transformed (the red color seldom being preserved) and after having traveled, must have lost much of their original beauty? *Spondylus* artifacts are associated in most archaeological reports with concepts of wealth and prestige.²⁰ The creation of chiefs, figures of authority, small potentates, “princes,” and revered elders at the top of the social hierarchy (depending upon the form of social stratification), and their accumulation of these shells, reinforced the capacity to aggregate possessions of a variety of objects ranging from rare raw materials (honey-colored flint from Madara in Dobrogea, obsidian from the Carpathians and perhaps the Aegean Islands, marble, malachite, jadeite, rock crystal, and carnelian) to valuable artifacts (polished stone axes, adzes, and mace heads) and metal (copper and gold).²¹ When *Spondylus* shells are found in graves, they are often together with these kinds of valuables in accumulations that suggest they were regarded as a kind of wealth or a sign of prestige.

However, these simple concepts of wealth and prestige appear inadequate to explain the deep interest in *Spondylus* artifacts exhibited by Neolithic and Copper Age Europeans. More-fundamental reasons for such a passion cannot be understood without recourse to the comparative ethnographic literature. For example, in a similar manner and until relatively recently, the Yurok Indians and the Salish of western North America were unaware of the maritime source of shells such as *Dentalium*, which they obtained via the Chilcotin Indians of the Pacific coast. Likewise, in the European Neolithic and Copper Age, people living far from the Mediterranean coastline also may have been unaware of the maritime source of *Spondylus* artifacts;²² perhaps the objects were part of a halo of mysteries, an ensemble of beliefs and myths aimed mainly at providing an account of the supernatural origins of the shells.

Such beliefs also might help explain the omnipresence of objects made from *Spondylus* across Europe beginning in the oldest Neolithic (seventh–sixth millennia BC). Trade and interest in these objects was still growing in the Copper Age, only to disappear suddenly at the beginning of the Bronze Age, when in the middle of the fourth millennium BC there was apparently a total social discontinuity with the preceding millennia as other cultures appeared—the new civilizations originating mainly in the Pontic steppes. *Spondylus* shells were linked to the traditions and customs of the European Neolithic and Copper Age in such a strong way that, after the end of Neolithic traditions and the inception of the Bronze Age, *Spondylus* was no longer desired or valuable.

The great archaeologist V. Gordon Childe noted, “The Danubians seem to have brought with them from the south a superstitious attachment to the shells of a Mediterranean mussel, *Spondylus gaederopus*, which they imported even into central Germany and the Rhineland for ornaments and amulets.”²³ Childe here referred to the fact, borne out by recent archaeological research, that the first farming cultures of southeastern Europe (“the Danubians”) came originally from Greece and the Aegean, so that the desire for *Spondylus* was in one sense “brought with them” from their Aegean homeland. But *Spondylus* artifacts were much more important in interior Europe than they ever were in Greece, so there must have been another element that made *Spondylus* attractive, which Childe labeled a “superstitious attachment.”

In connection with possible beliefs of the prehistoric European people discussed here, it is difficult not to evoke shamanism, “one of the great systems imagined by the human spirit, in various areas of the world, to give a direction to events and to act on them,” a concept to be understood as “a social fact that relates to the totality of society and its institutions, a fact that at the same time can mark the symbolic system, the economic, the political, and the aesthetic.”²⁴

Prehistory is endowed with representations of shamans²⁵—at least we attribute this interpretation to rare silhouettes of characters with their arms raised to the sky, dancing or masked, painted or carved onto the walls of vases. The

varied miscellany of objects often associated with *Spondylus* artifacts—recovered from sites such as Dikili Tash in Greece, Omurtag in Bulgaria, Sultana “Malu Rosu” in Romania, Giurgiulesti and Karbuna in Moldavia, and Csoka-Kremenjak in Hungary—are variously called by archaeologists “treasures,” “deposits,” “magic-kits,” and even “tool-kits” (!) and are probably the many accoutrements or ritual accessories of shamans.²⁶ The “treasure” of Ariusd in Romania is composed of *Spondylus* artifacts, bone, objects made from copper and gold, and canine teeth of red deer (cervids),²⁷ which were used as beads and ornaments at the close of the Paleolithic period and during the Mesolithic. These hunting and gathering cultures form a cultural subcontext of the European processes of Neolithization, to which in the Neolithic are added *Spondylus* artifacts that represent a new reality layered on top of old myths.

The *Spondylus*-decorated plate of Popina II (southeastern Romania), the multiperforated valves of Battonya (Tisza culture, Hungary; fig. 8-12), and the complex pectoral pendant reconstructed from the Vert-la-Gravelle tomb (Marne, France; fig. 8-13) can be regarded as elements of the costume of the shaman. However, the V-shaped notched *Spondylus* shells present only in Central Europe (fig. 8-14) and in the Paris Basin could be interpreted as representations of vulva, as has been postulated for some motifs of the Paleolithic period in both parietal and mobiliary art in Russia and in France.²⁸

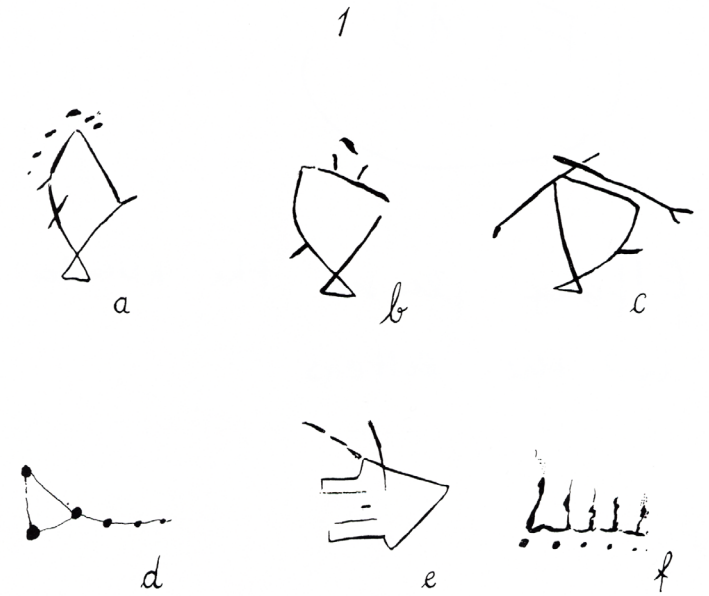
Shamanism remains the best explanation for why certain objects made of *Spondylus* were transmitted from generation to generation while others, including anthropomorphic and zoomorphic figurines, were intentionally broken and/or burned.²⁹ The multiperforated pendant of the Gumelnitsa at Popina II (Bralia, Romania) is deeply worn, as are the pendants and beads found in the tomb of Cys-la-Commune (Aisne, France), which also are associated with the bone of a crane—a migratory bird that may symbolize the concept of eternal return.³⁰ In contrast to these worn and used examples, a broken bracelet sized for a child in the richest burial of the necropolis of Varna was repaired by means of two gold fasteners. Thus we have “the inversion of the two Worlds,” a component of ancient beliefs, behaviors, and religious rites characteristic



of shamanic thought and, consequently, of the Neolithic and Chalcolithic people, who were engaged in an eternal dialectic between man and nature: What is good here is bad up there, and vice versa. Perhaps if the bracelet had remained intact, the individual buried at Varna, whether a child or an adult, could not have carried it to the other World.³¹

Patterns incised on a valve of a *Spondylus* pendant found in the Neolithic burial of a woman in Mostanga in Voivodine (Serbia; fig. 8-15),³² although difficult to interpret, appear to represent a boat and stars—expressions of the symbolic system encompassing this shell. They reflect the synergy that related this woman to both the Earth and the universe through the ever present dialogue between nature and culture that is an eternal expression of life's joys and anguishes.

Translated by A.G. Brown, PhD



8-12 (opposite: top, left). Multiperforated *Spondylus* shell from Battonya, Tisza culture, Hungary (after Kalicz, 1989).

8-13 (opposite: right). Reconstruction of a necklace and pectoral made of *Spondylus* and an open-weave shawl based upon discoveries at Vert-la-Gravelle burial, Marne, France (after Chertier, 1988).

8-14 (opposite: bottom, left). Notched *Spondylus* shell from the cemetery of Nitra, Slovakia (after Pavuk, 1972).

8-15. Mythical forms engraved onto a *Spondylus* pendant found in the burial of the woman of Mostanga IV, Voivodine, Serbia (after Karmanski, 1977).