MEDITERRANEAN SPECIES DISCOVERED AMONG THE ANIMAL REMAINS FROM DOBROGEA PROVINCE, NEOLITHIC- ENEOLITIHIC PERIOD

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Abstract. The paper deals with five Mediterranean species from Dobrogea Neo- eneolithic pre - history period. These species are: a sea shell *Spondylus gaederopus*, a sea fish – *Sparus auratus* found on the Black Sea coast and three terrestrial species: two of them better known, with a popular name – the lion and the fallow deer, and the third *Equus (Asinus) hydruntinus*, disappeared a few millenniums ago. All the species are nowadays considered Mediterranean. Their presence in Dobrogea in far away times was due to geographical events: the Bosfor Strait formation as a result of tectonic movements, this causing important changes in Black Sea`s characteristics and the post glacier optimum climate that extended to the north the Mediterranean climate.

Keywords: Archaeozoology, Dobrogea, Neo– eneolithic, Mediterranean animals.

Rezumat. Specii mediteraneene descoperite printre resturile animaliere din provincia Dobrogea, perioada neolitic-eneolitic. Lucrarea prezintă cinci specii mediteraneene din perioada preistorică a Neo-eneoliticului în Dobrogea. Aceste specii sunt: o scoică, *Spondylus gaederopus*, un peşte marin - *Sparus auratus*, descoperit pe litoralul Mării negre şi trei specii terestre: două mai bine cunoscute ce au şi denumire populară – leul şi cerbul lopătar, iar a treia specie *Equus (Asinus) hydruntinus*, dispărut în urmă cu câteva milenii. Toate speciile sunt astăzi considerate mediteraneene. Prezenţa lor în Dobrogea în timpuri îndepărtate se datorează unor evenimente să le numim geografice: formarea Strâmtorii Bosfor ca rezultat al mişcărilor tectonice, aceasta producând importante schimbări în caracteristicile Mării Negre şi optimumul climatic postglaciar care a împins spre nord climatul mediteranean.

Cuvinte cheie: Arheozoologie, Dobrogea, Neo–eneolitic, animale mediteraneene.

Introduction

Dobrogea is one of the smallest historical provinces of Romania. It is situated in the south-eastern part of Romania (Larousse, 2000) but from physical – geographical point of view, it extends to the north east of Bulgaria (Larousse, 2000). It is limited by the Black Sea to the east and to the west, with a turn to the north, by the last part of Danube inferior course, the so-called Low Danube, which flows through a big and beautiful delta. The part next to the sea coast is rather low, above 100m high. To the south there is a field under 200m high, with a lower part in the middle, crossed by the Danube – Black Sea Channel. There are hills over 300m high to north-west, perpendicular to the Danube to the east, with the so- called Măcin Mountains (over 400 meters high), a very old geological formation belonging to the Secondary era.

Historically, Dobrogea became famous before the middle of the Ist millennium before our era, when the antique Greek colonies are founded on Pontus Euxinus and where some ancient Greek authors, especially Herodot wrote about the fight of the Persian king Darius against the Scythes (512BC).The Greek historians and later the Roman ones wrote about the inhabitants of this province, the Gets, from the Thracians. To the Ist millennium our era, the emperor Augustus, annexes this province and sends to exile the well known poet Ovidius, there in the Greek fortress of Tomis, at the edge of the empire, where he actually dies. Later, the province is known under the name of Scytia minor, part of the East Roman Empire, later the Byzantine Empire, the Constantinople loosing and gaining repeatedly this province till the XIIIth century when small independent principates

develops; one of them it is said, fights against the Dobrotics, from which the name Dobrogea is originated. The region gets under the Mircea, sovereign of Valachia. Later, Dobrogea is annexed to the Ottoman Empire, on fully expansion by then. In 1877 it becomes partly of Romania, an independent state by then and partly of Bulgaria, its southern part.

This province land has been on the Black Sea influence on one side and on Danube's influence on the other side, this contributing to the prehistoric civilizations development and then to the evolution of the proto-history and history civilizations.

We mention that the present day climate of Dobrogea is rather sub-mediterranean. The north west and north part of the Black sea is not too deep, (- 130 meters maximum deep), almost 30% of the Black Sea surface of 420000 m^2 .

It is known that between the end of the Tertiary and the Quaternary, the Black Sea history was very wild (Panin, 2001). Between 7500 – 7000 BC, the sea that was known as a kind of interior lake, a little bit salmaster, in which the Palaeo Danube and the rivers Nistru, the South Bug and Nipper (rivers that may be considered affluents of the Danube) were flowing, had a much lower level (something above 100 meters) than the ocean, or the Mediterranean Sea of those days.

As a result of not too clear causes (telluric movements, strong earthquakes, the continents derive) the not too deep Bosfor Strait appeared. This caused the Mediterranean salt waters to flow in a very short time (a few years maybe) as a cascade, making equal the two sea levels and covering a huge territory in the north west and north until the 130m level.

At the same time the Black Sea developed a very special characteristic. As the salt waters were heavier, they went to the deep and eliminated the oxygen under the 200 ms level, an almost lifeless level where only some methanogen organisms could live. To the surface, as a result of the rivers flowing into, the water remained salmaster (salinity increasing to the south) with a common marine flora and fauna. Those said before are the result of researches started at the end of the XIX century and the beginning of the XX^{th} century, when first the Tsarist Russian fleet and then the boats of the British Admiralty made bat metrical maps of the north western and northern Black Sea floor (Năstase, 1936).

The Danube, especially in front of Sfântu Gheorghe branch has a rather long submerged valley to the Crimeea Peninsula. Such valleys were observed on the sea floor for Nistru, South Bug and Nipper rivers, oriented north – south. It was assumed that Cogălnic and some other small rivers from south of Basarabia (nowadays in Ukraine) Ialpug and Catalpug, which do not flow into the Danube but in some prolonged harbours, and especially Nistru, South Bug and even Nipper used to be Palaeo Danube's affluents. Fragments of sweet water shells as well as gravel from the Nistru and Nipper upper course have been brought to light. As the submerged valleys are at 25 fathoms deep, that being the equivalent of about 40m(some consider 100m) , the sea would have covered a huge surface and the rivers mentioned before ending with harbours would have been affluents of the Palaeo Danube.

In 1990 an American – Russian fleet mapped again the north western an northern Black Sea floor and then the French scientists did it again. At about 100 m deep sweet water shells were found, covered by sea water shells - Mytilus as well as plant roots dated with C14 in 7000 BC. More than that, in the area located at 29^0 50' - 30^0 Eastern longitude and 44^0 - 44^0 10' Northern latitude, at about 90 m underwater, terrestrial dunes, aeolian sculptured prior to become submerged were discovered, showing the land position 4-5 years ago. If that process had been lasted for hundreds of years, sediment traces would have been present on a large area by the waters going slowly against land on Black Sea floor, a sea without tides (Chairopoulos, 2000). We should notice the Black Sea surface

increasing in the first part of Holocene by flooding a large area from the north west and north part of a plain making the rivers Danube, Nistru, South Bug and Nipper to shorten their valley, and the Danube to create a rather new delta as well as the greatest part of what is nowadays called Dobrogea. Even earlier, the archaeologists ascertained that there were neither Mesolithic nor from the first part of the Neolithic cultures in Dobrogea. The Hamangia culture is the one and only culture from the final Neolithic belonging to this province. Previous cultures, like the well known Criş Culture (Koros) was present almost all the Romanian territory excepting Dobrogea. Why this happened we do not know The regretted archaezoologist Alexandra Bolomey tried to find an answer (Bolomey A, 1978).Based on some Romanian geographers and geologists she concludes that a Black Sea Neolithic transgression caused an about 10 meters raising of the water level flooding the land and that is no cultures, including the Criş one are missing in the Neolithic Dobrogea. As she had not this data at hand, only this 10 meters rising cannot prove the lack of the cultures in Dobrogea. These oscillatory movements of the planetary ocean, as well as of the Black Sea have a relatively small influence on sea coast characteristics; some gulfs can be changed into lemans or lagoons at small rivers mouths that flow into the Black Sea. We should not forget that there cliffs of over 100 meters high on Dobrogea's present day sea coast. The more than 100 meters water level raising might have destroyed almost everything in its way like a kind of flood, can be taken into consideration as an explanation for the lack of cultures from the first part of Neolithic in Dobrogea.

The archaeologists should start some studies of Black Sea underwater archaeology as the presence of some traces over the actual sea coast could be the answer to this problem. We ask ourselves if some members of this culture drowned and some others might have survived by taking shelter on high areas, why the last ones did not keep on practising the same cultural characteristics?

The described phenomenon had an influence on land flora and fauna which, although the migration on higher areas couldn't preserve them totally, most of them recovered during time with similar characteristics.

In Holocene the European climate and not only suffered some changes nowadays known under the name of climate periods.(Laszlo, 2005).Neolithic and Eneolithic is placed during the Atlantic period 7500 – 4500 BC, heater and more humid than nowadays, the higher point of this post – glacier "climate optimum " being between 6200 and 5800 BC, the yearly average temperature being higher, about $3^0 – 3.5^0$ C. The present average temperature in Dobrogea is 11^0 C (Encicl. geogr. a României, 1982), so it is obvious that the flora and fauna of those times were similar to the present Mediterranean ones.

Material

The animal remains that are to be discussed are represented by the archaeozoological material from settlements and necropolis in Dobrogea dated at the end of Neolithic and Eneolithic, around 5500 – 3500 BC, during two thousand years. Three cultures succeeded in Dobrogea during this period: the Hamangia culture, the first manifestation of the Neolithic life in Dobrogea (Ursulescu, 2001), developed mostly at the end of Neolithic (as the brass artefacts are rather few, we considered it as a Neolithic culture), then the Grumelniţa culture from Developed Eneolithic and followed by the Cernavodă I culture from the end of Eneolithic.

The archaeozoological remains belonging to these three cultures are very numerous, about some hundreds of thousand, determined by many specialists including me. I chose a few belonging to wild animals specific to Mediterranean area that used to live in Dobrogea by that time (both terrestrial and aquatic species – on Black Sea coast), at the north latitudinal limit of their habitat. The environment conditions used to be proper

for these species. Some of them extinct even from South East of Europe due to human action either intended or not, and not as a result of natural environmental changes.

The studied species are five belonging to different systematic groups: shells (Bivalvia), fish (Pisces) and mammals (Mammalia). We chose a shell belonging to *Spondylus* (European Thorny oyster) well known gender as the valves were used for some artefacts studied thoroughly by the archaeologists. In the eastern Mediterranean Sea, as well as the Aegean and Adriatic Sea, *Spondylus gaederopus L.* is still living, in some mediterranean areas being known under the name of donkey hoof as the superior valve has a similar size and form .As a fish we chose a teleostean species, Sparidae close to Percidae (including fresh water fish as perch and pike perch), *Sparus auratus L.* (the gill head) , a malacofag sea fish that crushed with their strong teeth and then eating the content of low water shells from the gulfs and lagoons, especially *Mytilus* (mussel). It is a well known species as it used to be fished for his tasty meet; nowadays can be seen along Dobrogean littoral brought by the warm southern streams. We studied three Mammalians: the lion, *Panthera leo* L., that can be seen only in zoological parks , the fallow deer – *Dama dama* L., that used to live in Dobrogea but after its so called domestication was grown for passionate hunters to hunt as well as in zoological parks due to its beautiful antlers and *Equus* (*Asinus*) *hydruntinus*, first described by the Regalia palaeontologist using the fossils found near the Roman cast rum *Hydruntis*, by Naples, Italy; As this species is extinct we do not know its popular name. The other four species are well known by the biologists and Linne gave their scientific binary denomination (Vasiliu & Şova, 1968).

Spondylus

Spondylus, a gender dated in Jurassic, is met in the so-called tropical sea waters all over the world and represented by over 10 species. For the bivalve group, an individual has two valves, the right and the left one, but for some, like the well known eatable oysters, as well as for *Spondylus*, the superior valve is bigger and thicker than the inferior one. *Spondylus*, a relatively big shell with thick valves was used even from the beginning of Neolithic for manufacturing artefacts as the valves are not breakable. These artifacts were not used for practical purposes excepting some fishing tools, being rather used as ornaments or for anthropomorphic idols. The ornaments, of quite a varied style were used by both male and female humans, either matures or children, such as bracelets, amulets, discs, drilled pearls for necklaces as proved by those discovered in settlements as well as in cemeteries. These were described by some archaeologists and classified in diverse types, without using statistics, a classification which in our opinion has no direct link with social and cultural purposes for which they had been used. Let us not forget that in the society of that time the artefacts were symbols for prestige or political/religious power as well as for ranking an individual even from the financial point of view. We quote a comprehensive paper of M.L. Seferiades (Seferiades, 2003).By reading some papers we find out about a XX^{th} century AC leader, from an island in Salamon Archipelagos, Oceania, who wore in addition to other jewels according to his rank three strings made of Spondylus pearls round his head and seven necklaces, on a religious celebration where he became sacerdotal. Artefacts made of *Spondylus* shells (different species with coral red to dark brown valves and spines of different sizes) were common in diverse historical or pre – historical periods except the west – central, central and south eastern Europe were *S gaederopus L.* was present. So, as we showed before *Spondylus* shells were used. The researches in the warm waters of the two American continents proved the intense usage of these shells by the pre- Hispanic civilizations. In Caribbean Sea, from Bermuda Strait to Guyana coast two species of *Spondylus* are living.

Maya civilization from Yucatan Peninsula as well as the later Aztecs from central Mexico used these shells, a great quantity of artefacts being discovered. In South America, *Spondylus* species are present on the Pacific coast by the bordering the actual Ecuador and Peru. The archaeologists concluded that around 2000 BC the shell was used by the local people. Then, for more than 1000 years there were no artefacts made of *Spondylus*. The shell was even more used inside the continent by the Inca civilization that used to live in Andes Alte Plana of nowadays Peru and Bolivia. Even more, there were about 10000 people who used to carry these shell from the ocean to the high Andes in order to be manufactured. We should mention that in the old Holocene as well as in the newer periods let us call them historical, *Spondylus* shells used to be manufactured in three areas: part of Europe through the Mediterranean Sea and the adjacent seas, west of Pacific and the Caribbean Sea (maybe Oceania too), without knowing or influencing each other.

So, *Spondylus* shells were used in different Neolithic and Eneolithic civilizations of Balkan Peninsula, from Romania, Hungary to Austria, Czech Republic, Slovakia, South and Central Germany even to Central France (see the map from Seferiades paper). *Spondylus* shells are relatively big shells specific to warm sea waters, between 5 – 25 meters deep; they are not too common, so the number of shells is not too big as they need a special substrate. That is why they appear relatively rare along the Black Sea coast in comparison with *Mytilus*, which is to be found in great number, hundreds and thousands of them, along the beach. Due to their substrate *Spondylus* shells are rarely seen at the surface and are polished by the waves, this diminishing their beauty. So, when they have started to be considered precious (priced in dollars), it is clear that they had to be picked from deep sea waters by experimented divers like sponges, corals, very used by the time (even at the beginning of XX^{th} century) for different house activities or as ornaments.

These rough shells could be easily manufactured to artefacts by some handicrafts man or transported to faraway, sometimes inhospitable places by the people who knew the roads, the merchants. Once they reached the destination, they were manufactured by the specialists – the handicraftsmen who manufactured artefacts according to the potential usage as well as to the people they were addressed to. These handicraftsmen used to have their original “patent”. We can draw too conclusions: first, even in Neolithic there were well specialised groups in society that could perform some special activities, different from those who practised agriculture, animal breeding, gathering and hunting and then we have to take care how we make the artefacts typology as each object has its own usage as well as its history and we also have to trace the patent. To make a typology without keeping these in mind is meaningless. Statistics will be defining for some cases. It is known that some Neolithic and Eneolithic cultures from Romania fully used artefacts made of *Spondylus guederopus*. We will study only the Hamangia and Gumelniţa cultures from settlements and necropolis in Dobrogea as we mentioned at the beginning of this paper. We should not mention all the sites in which *Spondylus* artifacts have been discovered. We mention that fragments of this shell were coming from all these Hamangian and Gumelniţa sites, either in great or little quantity; later they appeared in sites from Cernavodă I culture but then disappeared.

A relatively new paper of Cristian Schuster (Schuster, 2002) presents the spreading of S*pondylus* artefacts all over Romania (see the map with *Spondylus* spreading in Romania and the other two, one of Seferiades and the other of Muller with the spreading in Europe).Schuster makes a kind of catalogue with groups of artefacts belonging to the different Romanian sites as well as from adjacent countries. He proves that in some graves of matures or children used to be put *Spondylus* artefacts and he offers some statistic data. He observes that not everybody had the right to possess *Spondylus*

artefacts or maybe could not afford them. So, the society was well structured also from the economic point of view.

The shell is not present in Precucuteni and Cucuteni culture although they are dated similarly to Gumelnița. For three of them, Shuster mentions it as belonging to a Cucuteni site. The archaeologist Magda Mantu said that, in Scânteia, as well as in all the excavated Cucutenian sites there were no *Spondylus* artefacts but only of some sweet water shells like *Unio*. The archaeologists should be more careful when identify *Spondylus* shells as they are dark brown but as a result of polishing they become white, so small shell fragments can belong to other species either of sweets or sea waters. *Spondylus* shells are stratified, the yearly layers being visible like for trunk trees.

Another issue is why *Spondylus* was not appreciated by Precucuteni and Cucuteni cultures. The fact these cultures are situated in the north, in Moldova, so farer from the sea coast is not enough as long as these shells reached the Central France, much farer from the Adriatic Sea. Why they do not appear in our country during the end of Eneolithic and the beginning of the Cooper epoch. Could their lack being explained as a result of external causes such as climate changing or a change in the ocean and sea waters? Maybe these shells were gathered so intensive, so there were no more similarly to what happened with the red coral in the Mediterranean Sea. We believe that no geographical or geophysical factors caused this, but a human intervention. The newer cultures, even the Cucutenian culture simply did not agreed these shells as the cooper was easier to be processed for making artefacts.

There is another problem. Was *Spondylus* present along Dobrogea littoral or it was carried from Mediterranean sea, more precisely from Aegean or Adriatic sea like in Western Europe?

Seferiades, the archaeologist who lives in France and does not know neither the past or the present of the Black Sea affirms in his two works (Seferiades, 2000; Seferiades, 2003) that *Spondylus* did not lived in Black Sea and all the shells, even in Balkan Peninsula had been brought from the Aegean Sea.

Todorova, a Bulgarian archaeologist, well known for her diggings in South Dobrogea (Todorova, 1979; 2000) considers that in Neo- Eneolithic, after the "flood" the bivalve *Spondylus gaederopus L.* was living in the Black Sea.

As we found the other four typical Mediterranean species we are to discuss about it is clear we agree with Todorova.

It is obvious that Seferiades was not familiar with the importance of the post glacier optimum climate on the whole European continent and the flora and fauna changes in the Black Sea area, when its water was warmer an almost certain, salted. After the "flood" a low current from the Mediterranean Sea through Bosfor Strait to the north west of the Black Sea coast appeared bringing warmer and salted water. There is a Pre – Bosforic area rather extended were there are many Mediterranean species, so the dominant character of the Pontic fauna is more Mediterranean than Sarmatic (Skolka & Gomoiu, 2004).

Of course, only after the end of the optimum climate, during newer epochs, some Mediterranean species disappeared or became sporadic in the Black Sea, in front of Dobrogea littoral, being brought by the warm south stream. *Spondylus* being specific to benthos disappeared.

In the following lines we shall consider the four vertebrate species. For *Spondylus*, we dealt only with artifacts made of it, the rough shell not being found by the archaeologists during excavations. That is why we discussed some morphologic characteristics as well as some problems concerning its importance for human society. Vertebrates are represented by skeleton parts, which preserved in time and could be studied. Usually the bones are not integer but broken and the teeth are not inside the

alveoli but detached. That is why we will not describe too much the material characteristics but we shall present the site and sometimes the species frequency in the site in order to better circumscribe its presence in Dobrogea during Neolithic and Eneolithic.

***Sparus auratus* L.**

As we showed before *Sparus* (it has not a Romanian popular denomination) written "aurata", is a sea fish specific for the Pre – Bosforic area of the Black Sea, only young exemplars being sometimes seen (it may reach 1 meter long and weights 6 - 7 Kilos) in the north, in front of Dobrogea littoral, brought by the warm stream and the south winds. It is a typical malacofag fish with seasonal migration; the youth comes to the salmaster, or hyper salted lagoons during spring and they live there all the summer feeding with shells, there come back to the ocean in autumn after they have grown and matured in order to lay roes, the larvae being planktonic. When they come out of lagoons they can be easily fished. Nowadays is very important fish quite common for the Mediterranean and adjacent seas. Some fish remains have been found in two settlements on the Black Sea cost, Dobrogea area, both in lakes that used to be lagoons. To the Techirghiol lake, nowadays a hyper salted lake, there was a Hamangia settlement where fragments of jaw bones and big teeth, very specific, belonging to six individuals of *Sparus auratus* were found (Necrasov & Haimovici, 1959).

In Năvodari site, Gumelniţa culture, on an island of Taşaul lake, 18 bone fragments of *aurata* mature individuals were found (Radu, 2001). We must consider that the presence of bone fragments from *Sparus auratus* is due to the fact that on Dobrogea littoral, at the end of Neolithic and most part of the Eneolithic, when the two cultures developed, the climate was much warmer as a result of the "post glacier optimum climate". Later, when the sea water becomes colder, this fish disappeared from the sea along Dobrogea littoral.

The present lakes along the Dobrogea littoral used to be gulfs or lagoons (Haimovici, 1988).The circular stream in the Black Sea constructed some sand bars named in Romanian "grinduri" that cut the link between the gulfs or lagoons with the sea (nowadays there is Sinoie lagoon system in north Dobrogea littoral with its sand bars).In most of these lakes, coming from gulfs or lagoons, small rivers used to flow into, bringing sweet water. For some of the lakes, these sweet waters lacked and because evaporation of part of the water they became hyper- salted. The most typical is Techirghiol whose waters had 100‰ salinity about 1950's. We believe that happened quicker for some lakes and slowly for some others. For example the well known antique Greek fortress of Histria used to have a sea opening in VI century AC- we found some dolphin fragments in the fortress archaeozoological material.

Next we will deal with three mammal species, all of big size; two of them, the lion and fallow deer, both well known species, one living today in warmer areas and the other still living in Romania, but somehow domesticated not native. The third one, let us call it *hydruntinus*, disappears even before *Eneolithic*, only some bony fragments coming from it being studied by the specialists. We should add that the three species although they are not migratory like some other big mammals, they can move daily around thirty kilometres.

***Panthera leo* L.**

The lion is a big carnivorous let us call it a beast, who attacks bigger and bigger mammals. In Elton pyramid the lion has a high position; that is why it has a low frequency in comparison with the other two herbivore species with a higher frequency. Usually it is traced where there is a big quantity of material but it may also appear in small quantity material. In Romanian Central Dobrogea, it was discovered in Cernavodă I level culture,

at the end of Eneolithic in a site near Hârşova, a town on the right bank of Danube river. It's about a fragment of an axis vertebra that was preserved as Dragoş Moise, the one who found it assumes, as a hunting trophy together with the animal fur (Bălăşescu *et al*., 2005).

In Bulgarian Dobrogea, so to the south, in Durankulac, a Hamangian settlement on Black Sea coast, a relatively big quantity of bone fragments coming from lion have been found: 7 fragments of which a left inferior jaw (Ninov, 1989).

In Neolithic and Eneolithic archaeological sites around 45 degrees northern latitude, bony fragments coming from lion were discovered by Dobrogea both to the east and west. In nowadays Hungary sites containing lion bony fragments have been discovered (Voros, 1983; Bartosiewicz, 1999), in south of Basarabia, nowadays Ukraine, Bibikova (Bibikova, 1973) discovers lion fragments in Bolgrad, east of river Prut and in Maiaki, west of river Nistru (Tripolie culture).

In time, the lion disappeared in south of Danube and in the Balkan Peninsula, north of Stara Zagora Mountains, maybe as a result of hunting. It continued to live in the south of Balkan Peninsula for a long time and from the South Greece it seemed to have disappeared at the end of I century AC. (Becker, 1986; Haimovici, 1992).

So, for the first part of the Holocene, the lion's habitat was spreading to the north, in south Eastern Europe. The climate changing may have caused the species retreat to the south, but is evident men contribution to its total elimination from south Eastern Europe.

***Dama dama* L.**

The fallow deer, a name that indicates its colour, is called in Romanian "cerb lopătar" suggesting the form of its antlers. It became somehow ubicvist, domesticated, being bred like the pheasants for the beauty of its antlers. As a native species he lived for a long time in south eastern Europe, being eliminated from the continental Greece in the last centuries of our era; nowadays it is met just in Iran as an oriental subspecies, *Dama dama mesopotamicus.* The Phenicians were the first who domesticated the fallow deer by bringing it to Maghreb and then the Romans who brought it from Italy to Gallia and then Britannia. It came to Central Europe by 1000 A.C crossing the Alps. It was brought from Germany to Denmark and Sweden. Nowadays is common in Great Britain, Ireland, the English bringing it to the ex- colonies Australia and New Zeeland. In Romania, the Hungarian nobles brought it on their properties in Transylvania around 1850, being bred today in parks and hunting areas.

In Dobrogea Neo-eneolithic period was evidentiated in two sites, only antler fragments being found (these fragments could be brought from the south in order to make artifacts but we do not believe it). The first site is a Hamangian settlement called Ceamurlia de jos, in Central Dobrogea. It is the basal part of an antler with the somehow large upper surface (Necrasov & Haimovici, 1963). The second one is in North West of Dobrogea, Carcaliu, next to the toen of Măcin, a Gumelnița settlement; here a part of the antler with two edges was found (Haimovici, 1996). Having as reference 45 degrees latitude, two more sites with fallow deer fragments have been found in Romania; one is the Gumelnița settlement- Însurăței – Popina I, Brăila County (Moise, 1999) and the other in Banat, Vinca culture, Liubcova – Orniţa (El Susi, 1991).

In south of Danube, on Bulgaria territory but not in Durankulak, especially in south of Stara Planina Mountains, many sites with *Dama dama* fragments were found (Manhart, 1998). It seems that at the northern limit was not too well represented. It is important to mention that simultaneously with the north limit of *Dama dama* in Romania the south limit of another important cervid, the elk (*Alces alces* L.).

If for the 45 degrees latitude, the fallow deer was barely known, in South of Balkan peninsula and Asia Minor and to the East, this species was very important for all

the facets of human society being more numerous than *Cervus elaphus* – the noble deer (Becker, 1986; Brentjes, 1965). Artemis, the hunting goddess was represented by the antique Greeks accompanied by a fallow deer. It is also mentioned in the Bible – Deutronomium – 14, 4-5 (van der Velden, 1992).

***Equus* (*Asinus*) *hydruntinus*/Reg. (Wild European Donkey)**

This species was rather spread at the end of Neolithic in south Eastern Europe different from the mammals described earlier. As we shown before, it was named by Regalia in 1907, on the basis of some bone fragments excavated by him in south of Italy. Like every other species discovered by archaeologists there were no whole skeletons but fragments, some teeth and methapodal bones and phalanxes. In time, the number of bony fragments from Palaeolithic increased, so Vera Gromova studied them in her paper about extinct horse species (Gromova, 1949). It was stated the *hydruntinus* lived in Mezolithic on the territory of Crimeea and Caucaz and later in Romania, in a Mezolithic settlement by Danube Cazane (Haimovici, 1987). Even from 1954 Bokonyi Sandor determined it on the basis of a tooth and a phalanx III, in the first part of the Neolithic in south of Hungary, a Koros (Criş) culture site (Bokonyi, 1954); soon after, it was discovered in Dobrogea in two Hamangian sites: the Cernavodă necropolis and Techirghiol settlement, represented by many fragments amply described in two reference papers (Necrasov & Haimovici, 1959; Necrasov & Haimovici, 1960). I do not want to get into details on bone morphology problems but it was clearly stated that *hydruntinus* was quite a primitive *ecvid* with some inherited characteristics, morphologically similar to Stenon horse *(Equus stenonis)* from Villafranchian; it had three toes like the old *ecvids* but also shared characters with *asinus* (nowadays common domesticated donkey), more primitive than nowadays horses and still had some characters of its own. We will show that *hydruntinus* from Cernavodă was used as food and parts of it were used as offerings in graves for both sexes no matter of what age. The one from Techirghiol was also hunted but the youth were not preserved, a fact proved by the discovered teeth and bones belonging to individuals younger than 2 years. At Durankulac (Bulgarian Dobrogea) numerous fragments of *hydruntinus* were discovered as it was used as offering for death (Manhard, 1998) (Spasov & Iliev, 2002).

Hydruntinus, sized as nowadays common domesticated donkey whose characters might have partly borrowed, was adapted to a dry and warm steppe, so we can consider it a Mediterranean species, (like the common donkey who reached Romanian territory in proto-historic periods), and was a sort of common species in many sites south of 45 degrees latitude except Dobrogea, where it seemed to be very frequent. It appears in Banat (El Susi, 1985), but also in South Hungary, Serbia and Bulgaria (Bălăşescu, 2005) but with little fragments. In a site from the beginning of Neolithic, placed in the South of Bulgaria, of 2200 studied fragments only one was a *hydruntinus* tooth (Benecke, 2005).

The Wild European Donkey disappears as a species at the end of Neolithic after the ending of Hamangia culture. The climate changes might have had a role but it was in the middle of "optimum climate"; the humans might have had their part. Maybe some internal causes, unknown by now, played a role: species are born at a certain geological point, live for some time, usually for millions of years and then they grow old and die, as they become incapable of procreation so, another species follows.

Conclusions

This paper evidentiates the five species spreading in Neo-Eneolithic Dobrogea showing the location of the sites were they were discovered, in Dobrogea as well as in the adjacent areas having as a reference axis the 45^0 parallel, that seems to be the northern limit for these species Neo-eneolithic. This limit has been pushed to the south, the species

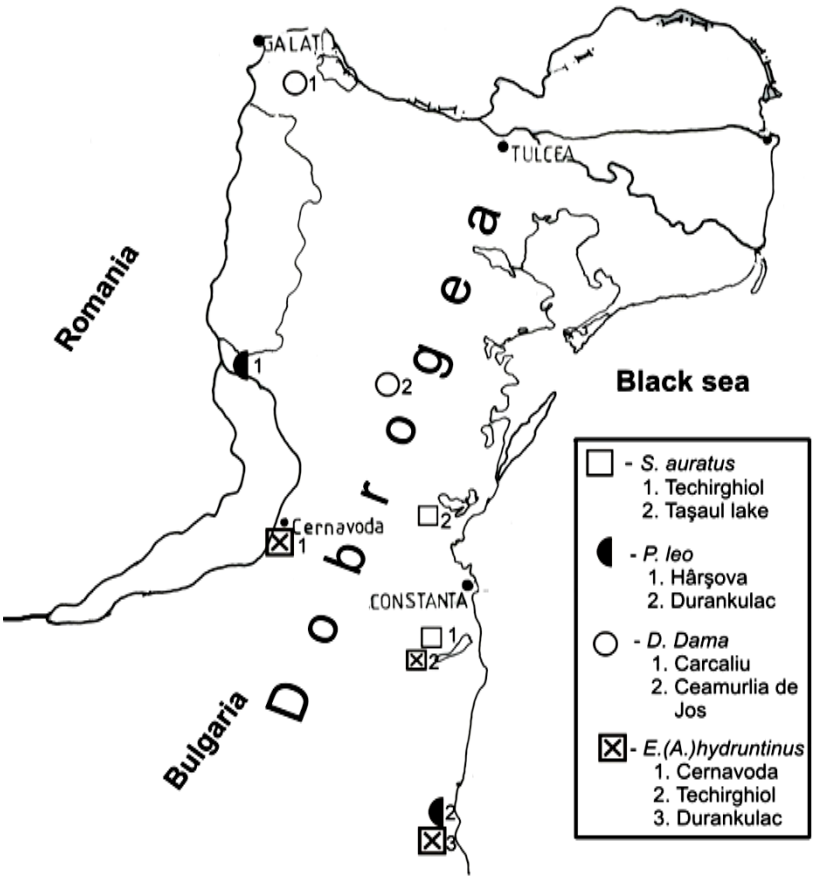
being now considered for South Eastern Europe as well as for other regions, strictly Mediterranean as zoo- geographers classifies them.

Some characteristics of these five species have been better circumscribed, as they were not familiar and for some archaeologists were quite unknown, being considered casual species for the Neo-eneolithic. It was stressed on the economic importance of these species as well as for other facets of civilization they belonged to.

The presence of the studied Neo-eneolithic species up to the north was fully influenced by two geographical events: the presence of the optimum climate which influenced almost certain the whole Eurasia and the Bosfor Strait appearance, an aspect treated thoroughly in the text, that changed a lot the Black Sea characteristics as well as of the adjacent areas.

We presented *Equus* (*Asinus*) *hydruntinus*, disappeared at the end of Neolithic and not at the end of Pleistocene as it was believed, for it had a well circumscribed importance in the animal economy but not only of human civilization .The cause of its disappearance is still unknown. Maybe men plaid some part in this species extinction.

Translated by Monica Popa



Map showing the distribution of four vertebrates in Dobrogea

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