A NEW *HİSPANOTHERIUM* SPECIES (MAMMALIA, RHINOCEROTIDAE): *HISPANOTHERIUM ALPANI* N. SP. FROM THE UPPER MIOCENE OF SOUTHWEST ANATOLIA

Gerçek SARAÇ

Mineral Research and Exploration Institute of Turkey

SUMMARY. — An upper premolar tooth (P^4) beionging to *Hispanotherium* genus has been found in 1974 in the lacustrine Sediments of Upper Miocene age,[1] near Yeni Eskihisar, Yatağan County, Muğla Province. This new species of the genus—of which up to date only one species is known from the Iberian Peninsula and one from Turkey—was named *Hispanotherium alpani* n. sp. by the author of the present paper.

İNTRODUCTİON

The lacustrine Sediments of Upper Miocene age, which occur southwest of Yeni Eskihisar village, Yatağan County, Muğla Province, contain vertebrate fossil beds (Fig. l, location map). These fossil beds were discovered by a team of German geologists (Becker-Platen, 1970) who worked in this area between 1965-1969 on a project called «Lignite Deposits Exploration in Turkey», and later (in 1969-1970) some excavations were carried out by a group of German paleontologists (Sickenberg &Tobien, 197l;Tobien, 1974; Sickenberg et *al.,* 1975).

During the summer of 1974, a group of paleontologists from the M.T.A. Institute, includingtheauthor of this paper — while working on a project named «Biostratigraphic surveys in the vicinity of Muğla-Yatağan-Milâs» — found in the same fossil bed, mentioned above, a right upper premolar (P^4) the description of which is given below.

Four fossiliferous layers containing vertebrate material were identified in this deposit. *Hispanotherium alpani* n. sp. was collected from the clayey-sandy marl Sediments, gray to gray-green in color, underlying the upper fossiliferous platy limestones within the Upper Miocene formation. From the point of view of bedding type and formation these Series can be included in the lacustrine Sediments described by Tobien in 1968; (Sickenberg et *al.,* 1975).

Because of its fossil content the Yeni Eskihisar fossil bed can be ascribed to the *Anchiterium* faunal group.

The following list of fossils compiled by Sickenberg and others (1975) is given below:

Lacertilia indet
Testudines indet
?Aves indet
Soricidae sp. (probably two small forms)
Desmanella n. sp.
Desmaninae sp.
Galarix cf. *moedlingensis* Rabeder

[1] According tocentral Paratethys classification, Badenian and Sarmatian stages (Sickenberg et *al.,* 1975).

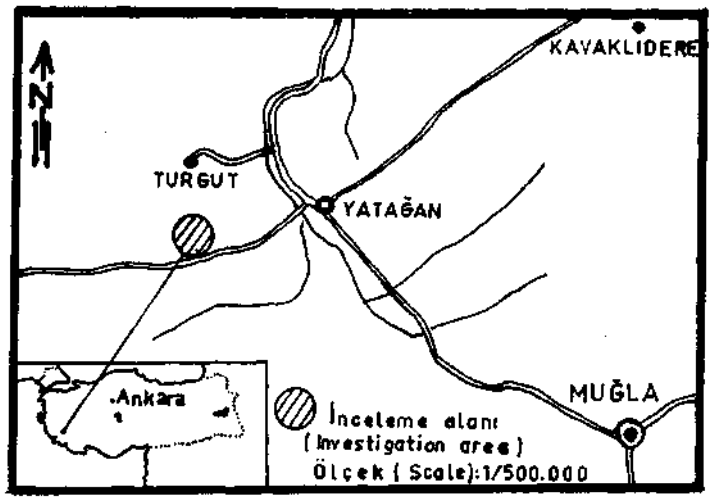

Fig. 1 - Location map.

Erinaceinae sp. I

Erinaceinae sp. 2

Chroptera sp. (small form)

Amphilagus fontannesi Deperet

Cricetodon (Palaeocricetus) n. sp. 3

Megocricetodon sp.

Dakkamys n. sp.

Atlontoxerus sp.

Sciuridae sp.

Gliridae sp.

Splacidae sp.

Castoridae sp. indet (large form)

Hystrix sp.

Protictitherium n. sp. 2

Miohyaena montadai (Villalta & Crusafont)

Machairodontinae n. gen. n. sp.

Percurocuta cf. *miocenica* Pavlovic & Thenius

Hisponotherium *grimmi* Heissig

Aceratherium off. tetrodoctylum Lartet

Giraffidae sp. indet (large form)

Ruminantia indet

Tossunnoria sp.

Bovidae sp. (at least two forms)

Though this fauna includes *Hispanotherium grimmi* Heissig (1974), Heissig himself— in one of his articles published later— does not mention the presence of this species in the Yeni Eskihisar fossil deposit, because the metacarpal (MC III) he described might belong to *Hispanotherium alpani* n. sp.

The present paper gives odontologic and biometric comparisons between the P^4 of this new species and those of the other, previously known, two species (Table I; Fig. I). The tooth is described using the names given by Hessing (1972) and Hamilton (1973).

Table - I

Comparison of measurements (in mm) of the upper right P^4 in different *Hispanotherium* species

Upper right P4	*H. alpani* n. sp.	*H. matritense*	*H. grimmi*
Length	31.10	30.30	27.10
Width	29.20	48.20	28.80
Height	32.20	—	35.40

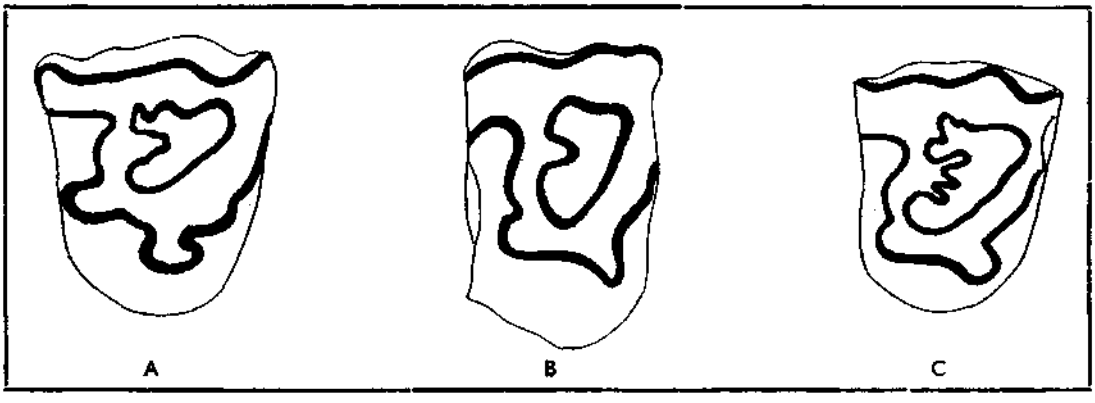

Fig. 2 - Comparison between the chewing surfaces of the upper right P^4 of different *Hispanotherium* species (natural dimensions).

A - *H. alpani* n. sp. Holotype

B - *H. matritense* (from Antunes et *al.*, 1972)

C - *H. grimmi* Holotype

Genus: *HISPANOTHERIUM* CRUSAFONT & VILLALTA, 1947

Hispanotherium alpani n. sp.

(Pl. I, photo 1-3)

Holotype. — Right P^4 (MYYE. 3). Natural History Museum, M.T.A. Institute, Ankara.

Type locality.— Yeni Eskihisar, Yatağan, Muğla.

Type horizon.— Upper part of the Upper Miocene (Sickenberg et *al,* 1975).

Derivation of the name.— The name is in honor of Dr. Sadrettin ALPAN, General Director of the M.T.A. Institute.

Diagnosis.— Right P^4 hypsodont. There is a second groove in front of the anterior groove of the protocone. Anterior groove of the hypocone is deep. Crista is well developed and cristella is rather prominent. Crochet is slightly wrinkled. Base of the paracone is large. There is no cingulum and cementing is weak.

Description of the holotype:

Measurements (in mm):

	Upper part	Lower part
Length	31.10	28.80
Width	29.20	35.60
Height	32.20	

The prism-shaped upper premolar (P^4) is subhypsodont. The upper part of the parastyle is broken. The fold of the metacone is weak. The paracone fold does not reach the base. The outer wall is flattened because the mesostyle rib is not developed, and it is slightly convex. The parastyle is short. The parastyle groove is prominent in the upper part; it becomes shallovver downward and disappears at the base. The outer posterior edge of the outer wall deviates towards the frontal-lower part of the tooth.

The chewing surface is eroded horizontally. The median valley is covered by a small wall which joins protoloph with metaloph. Numerous folds on the enamel bordering the median valley areinvisible. One fold defines the crista.The cristella in front of this crista is well pronounced. The croched is also well developed and covered by simple wrinkles. Metaloph is narrower than the protoloph. Because of the anterior and posterior grooves, the protocone is very prominent. Thisgivesit a peninsula-like outline. Hypocone became also prominent due to the sinking of the frontal valley and the postfossette lying at the back of the tooth. The metaloph is thinner and smaller when compared with the other lophs.

The postfossette is limited by a crest lying at the back of the tooth. This crest joins the metacone to the hypocone at the posterior part of the tooth. The postfossette dividing the metacone from hypocone is filled with cement and its frontal end is very near to the curve between the crista and the crochet.

The median valley is covered by a small inner wall which joins the protoloph to the metaloph. This wall disappears at the inner basal part of the tooth, where the posterior groove of the protocone joins the groove of the hypocone. The inner wall bears traces of cementing.

There is a second groove in front of the anterior groove of the protocone. This groove is shallow at the upper part of the tooth, but it narrows towards the base. Both grooves in front of the protocone show also traces of cement.

The neck is not visible. The protocone gets larger towards the base. There is a difference in dimensions between the width and the height at the apex of the crown. There is no cingulum.

Discussion.— Based on the above characteristics — such as odontologic properties and biometric dimensions — this tooth is attributed to the genus of *Hispanotherium,* the vertical distribution of which is between the Helvetian and Upper Miocene ages. In general, the fauna collected from the fossil deposits of Yeni Eskihisar suggests an Upper Miocene age (Sickenberg & Tobien, 1971; Sickenberg et *al.,* 1975).

Crusafont and Villalta (1947) described *Hispanotherium,* for the first time, as belonging to the subfamily of Elasmotherinae, but Viret (1955), Antunes et *al.* (1972), Aguirre and Guerin (1974) included this genus in the subfamily of Iranotherinae, while Hessig (1974) attributed it to the Elasmotherini tribe.

The only species of *Hispanotherium* from the Iberian Peninsula is H. *matritense* (Prado, 1863) of Helvetian age. Data available on the Spanish and Portugese species — which is restricted to the substages of Helvetian age — indicate also certain differences in shape (Antunes et. *al,* 1972). The P^4 of this species approach *Hispanotherium alpani* by such features as their general shape, constriction of protocone forming a peninsula-like outline, flatness of the outer wall, absence of metastyle, and the hypsodonty of the tooth. However, the inner-outer length in the P^4 of H. *matritense* is greater than in our specimen. Furthermore, the shape of the postfossette, the formation of the hypocone, the properties of the inner wall between the protocone and the hypocone, as well as their roots are also different.

The second species, *Hispanotherium grimmi* Heissig, is known from the Upper Miocene of Anatolia, Turkey. The P^4 of this species[2] (Fig. 2-C) differs essentially from that of the *Hispanotherium alpani* n. sp. by such features as a crochet with three folds, direction of crista, presence of a protocone, a postfossette, and roots, as well as by the erosion of the anterior and posterior parts of the chewing surface.

Conclusion.— *Hispanotherium alpani* n. sp., collected in Yeni Eskihisar (Yatağan County, Province of Muğla), differs from the other two previously known species of Middle and Upper Miocene age by some odontologic properties and biometric dimensions. The inner wall of the tooth suggests the possibility of its adaptation to hard foods. The smoothness of the outer wall in our specimen, when compared to the undulated surface of the outer wall in other specimens, is due to this adaptation to harder foods. Thus, *Hispanotherium alpani* n. sp. can be considered as a species which fed on grasses and similar vegetation of the steppes.

The presence of castors among the general fauna of the Yeni Eskihisar locality indicates that during the Upper Miocene age forests existed along the shores of the lake, while the discovery *of Hispanotherium alpani* n. sp. suggests that large portions of this area consisted of barren lands (grasslands, steppes).

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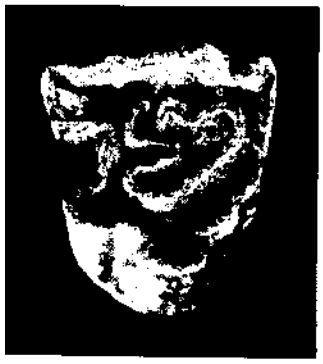

Photo 1 - *Hispanotherium alpani* n. sp. Right P^4, holotype. View of chewing surface, natural dimensions.

Photo 2 - *Hispanotherium alpani* n. sp. Right p^4, holotype. View of inner side, natural dimensions.

Photo 3 - *Hispanotherium alpani* n. sp. Right P^4, holotype. View of outer side, natural dimensions.

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