

Forming the quotient of these two values, the following formula is received:

$$\eta = \sqrt{R^2 + h^2} \quad \text{where} \quad \eta = \frac{\frac{\partial U}{\partial z}}{\frac{\partial^2 U}{\partial z^2}} \quad \text{and thus} \quad h = \sqrt{\eta^2 - R^2};$$

a form, where the density, which makes the most difficulties, is absent. From the derivatives and the knowledge of R , the value of h can be calculated, independent of the density differences between the two masses. The value of R may be obtained generally from the gradient values, because these indicate the edge of the structure with a good approximation.

UJ BALANIDÁK A HAZAI HARMADKORBÓL

Irta: KOLOSVÁRY GÁBOR

7 ábrával

Hazai fosszilis faunánkból eddig a korallokban lakó kacs lábú rákok közül csak a VADÁSZ ELEMÉR által először megtalált „*Pyrgoma multicoatum* SEGUENZA” volt ismeretes. (Lásd utalást: „Földt. Közl.” Centennáris kötet p. 102—112.) E faj helyes neve: *Creusia Rangii* (DESMOUL.), synonymái: *Pyrgoma Rangii* DES MOULINS, *Pyrgoma multicoatum* SEGUENZA, *Pyrgoma costatum* GORJANOVIC-KRAMBERGER és *Creusia Funchi* PROCHASKA (lásd utalást: T. H. WITHERS: The phylogeny of the Cirripeds in „Ann. Mag. Nat. Hist.” 10, Vol. IV. 1929 p 559—566.). Ez a faj azonban nem azonos az ABEL által leírt *Paracreusia Trolli* nevű fajjal (lásd: O. ABEL: Vorzeitliche Lebensspuren, Verl. Fischer, Jena, 1935.) — A *Creusia Rangii* (DESMOUL.) eddig előkerült francia, olasz, osztrák, horvát, erdélyi és magyarországi miocén rétegekből *Orbicella* (*Heliostroea*) és *Isastroea* korallokban.

A Creusiák abban különböznek a Pyrgomáktól, hogy héjuk négy lemezből áll, a Pyrgómáké ellenben egységes lemezzé olvad össze. Az összetévesztés ennek a bélyegnek félreismeréséből ered. — Élő *Creusia*-faj a: *Creusia spinulosa* LEACH 1824, mely 13 formára bomlik, s valamennyi ma is kizárólagosan korallokban él.

VADÁSZ ELEMÉR felfedezése óta a következő új adatokról számolhatok be:

a) *Creusia spinulosa* forma *cladangiæ* n. f. foss. Sámsonháza, a Halastó-hegy nyugati öble. Miocénkorú alaprétegek andezittufa felett. Osztrigás agyagpadból gyűjtötte LEGÁNYI FERENC. A példányok egy *Cladangia conferta* REUSS nevű korall törzstörődékéből valók. Leírása az angolnyelvű szövegben (1. ábra).

b) *Creusia spinulosa* forma *praespinulosa* n. f. foss. Pécsbudafa, temető alatti régi mély út rétegeiből *Ostrea gingensis*-padból. Középső miocén torton-elemt. Lajtamészköben ostreás kavicspad. A példányok korallon kívül kavicsos homokkőben vannak, a kőzet vasas oldattal és erős kalcitosodással. Két példány az *Ostrea gingensis* héjára megtelepült (lásd 5. ábrát). A kőzetben különben még *Pholas* s egyéb molluszkamok is vannak.

Szükséges e helyen megemlítenünk azt, hogy ezek a Cirripediák korallon kívül találtattak, ami azt igazolta, hogy a korall utólag pusztult el s a Creusiák szabadon maradtak fenn. Leírása az angolnyelvű részben (2. és 3. ábra).

c) *Andromacheia Noszkyi n. gen. n. sp. foss.* Magyarország, Baranya m. Vasúti állomástól északra az épület mögötti feltárás szarmatakorú agyagos rétegsorából! Iszapoláskor, az iszapolási maradékból került elő. Egyetlen piciny példány, átmérője 1—0.¼ mm, magassága 1.¼ mm. Korall nem volt a közelben, már az anyag összetétele miatt sem. Valószínű, hogy a szarmata elegyes vízben degenerálódott *Creusia*-példány. A szarmatából az első világirodalmi adat. Leírása az angolnyelvű részben (4. ábra).

Ezek szerint a hazai eddig ismert *Creusiák* a következők:

1. *Creusia Rangii* (DESMOULINS). Ribice, Mátraverebély, Sopron-Rákos, Mánestető a Mátrában; torton-emelet. Gyűjtők: VADÁSZ ELEMÉR és ID. NOSZKY JENŐ. Gazdaállat: *Orbicella (Heliastrea)*-korall.

2. *Creusia spinulosa forma cladangiae n. f. foss.* Sámsonháza, II. mediterrán, gyűjtötte LEGÁNYI FERENC Gazdaállat: *Cladangia conferta* REUSS.

3. *Creusia spinulosa forma praespunulosa n. f. foss.* Pécsbudafa, középső miocén, gyűjtötte IFJ. NOSZKY JENŐ. Gazdaállat nincs, illetve: *Ostrea gingensis*.

4. *Andromacheia Noszkyi n. gen. n. sp.* Magyarország, Baranya m., szarmata agyagból Gyűjtötte IFJ. NOSZKY JENŐ. Gazdaállat nincs.

A *Creusiák*on kívül előkerült még két újdontság és pedig:

Balanus amphitrite Helenae n. ssp. foss. a budafoki Paesirtahegy alsó miocénkorú bányájából *Ostreae*-héjról. Gyűjtötték: KOLOSVÁRY GÁBOR és felesége. 1948.

Balanus Vadászi n. sp. a felsőtárkányi alsó miocén rétegekből, gyűjtötte LEGÁNYI FERENC.

NEW BALANIDS FROM THE HUNGARIAN TARTIARY AGE

BY GABRIEL KOLOSVÁRY.

(Budapest, Hungarian National-Museum.)

(With 7 figures in the text.)

In the collections of the Palaeontological Department of the Hungarian National-Museum there are some new fossil species of miocene Cirripedes they are as follows: 3 new forms of *Creusias* and two new forms of *Balanids*.

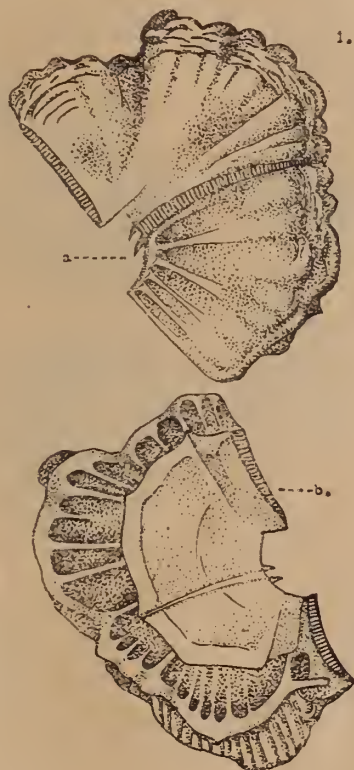
Creusia spinulosa forma cladangiae n. f. foss.

The four compartments (shell) is circular and flat, with weak ridges radiating from the orifice. The orifice is oval, or diamond-shaped. The four compartments are quite distinct, the radii with transverse striae, by the orifice with two spines. The colour is white. The portion of circumference of shell is lobular. Height of shell 2 mm, diameter 6 mm. The margin of the orifice is rather prominent. — The walls are internally ribbed. The interspaces between these internal ribs have not

laminae deposited. Basis (pseudomorphosa) cup-shaped, short and externally longitudinally ribbed. Not permeated by pores.

Our new form differ from the recent *Creusia spinulosa* LEACH and from the fossil *Creusia Rangii* (DES MOULINS) in the circular form of the shell, in the irregular radial-ribs, Compartments with 10—12 ridges. Pseudomorphosa internally weakly longitudinally ribbed (Fig. 1.).

Locality: Sámsonháza, mount Halastó in Hungary; time: upper horizon of the middle-miocene (torton-age, Leitha-limestone). Attached to *Cladungia conferta* REUSS in a *Ostrea*-bank. Collector FERENC LEGÁNYI.



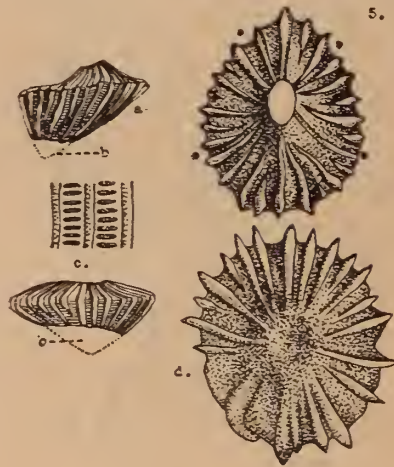
Creusia spinulosa forma *praespinnulosa* n. f. foss.

Shell flat and consisting of four compartments. Shell oval, or circular with ridges radiating from the orifice. The ridges are sometimes distant from each other (fig. 5 and 2. e.) and considerably prominent, projecting round the basal border (fig. 5.). The four compartments are quite distinct, or not (fig. 5. d.). Radii present. The colour is brown, the specimens are secondary coloured from the ferrihydroxyd. The margin of the orifice is prominent, orifice oval, or diamond-shaped. Shell 1—2,5 mm high, the largest specimen has a diameter 9×11 mm. The walls are

internally ribbed. Basis (pseudomorphosa) long, cylindrical-cup-shaped with longitudinal ribs, the interspaces with transverse striae (fig. 5.c.). Height of the pseudomorphosa 4—13 mm.

Scutum and tergum separate. The scutum is marked externally with transverse striae. On the internal surface is the adductor ridge well developed, better than in the recent form of this species (fig. 3.).

Our fossil form „attached not to corals”. Just because the coral is not preserved it does not mean that *Creusia* did not grow embedded in a coral originally, for the shape of the shell (Fig. 4.b.) is sufficient proof of this. Our specimens are imbedded into the sandstones on a *Ostrea*-bank (Leitha-kalk). In the sandstones are also found *Pholas* and other Lamellibranchs, Bryozoas. Two specimen are attached to the shell of *Ostrea gingensis* (Fig. 5.), they are little and their pseudomorphosa



are only 4—5 mm. But this only means that in some instances the coral originally surrounding them had become powdery and had fallen away, or had been otherwise decomposed. for the same species *Paracreusia Trolli* ABEL, is generally found in coral, or isolated.

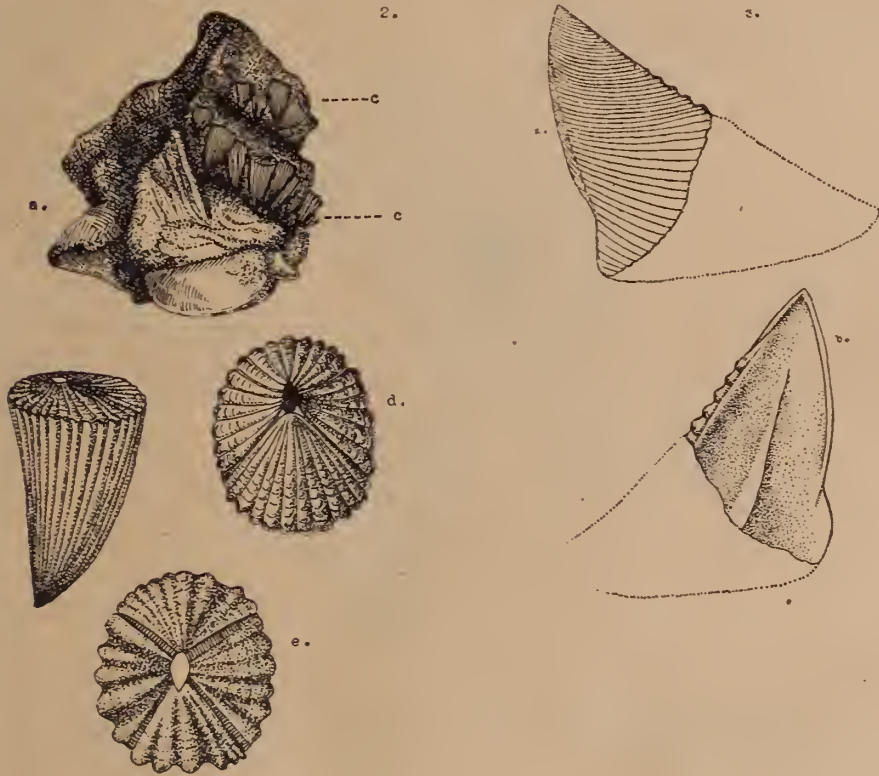
Our new form differ from the recent *Creusia spinulosa*, and from the fossil *Creusia Rangii* and *Creusia spinulosa forma clidangiæ*.

Locality: Pécsbudafa in Mount Mecsek in South Hungary; time: upper horizon of the middle miocene, collector: EUGEN NOSZKY junior, year: 1948.

Andromacheia Noszkyi n. gen. n. sp. foss.

Height of the pseudomorphosa 1.1/4 mm. Surface longitudinally ribbed. The interspaces of these ribs are transversally striated. The form of the pseudomorphosa like the genus *Creusia*. The end of the basis is broken. Basis not porous. The inner surface with irregular (secondary calcified?) ribs, but the internal surface of this pseudomorphosa is uncertain.

Shell flat. The four compartments are very uncertain, but are visible and irregular developed. Radii and alae I can not observe. The margin of the orifice is broken, $\frac{1}{4}$ of the diameter of the shell. The diameter of the shell is 1×0.5 mm. The surface is furnished with scales (squamulae) like the periphery (circumference) of the shell of the *Creusia spinulosa forma cludangiae mihl*. The scales are in three rows disposed, but not so as in the *Catophragnus*! The surface has 5—6 dimples or secondary perforations. The form of the scales is variable, angular or irregular. The colour of the shell and basis is white and polished.



The singular specimen of this provisional form (n. gen. n. sp.?) is probably a reduced or obsoleted Cirripede, like to the *Creusia*, they have in the brakish water of the hungarian sarmatic age in the sarmatic sea to live. — Corals are not found in the vicinity of this „Cirripede”. — They were to be found in sarmatic clay-bed.

Locality: Magyarszék in comitat Baranya in south Hungary, collector EUGEN NOSZKY junior, year: 1948, Oktober.

I name this Cirripede to honour of the collector Mr. Dr. EUGEN NOSZKY JUNIOR and his father: Dr. EUGEN NOSZKY AD. for they were so kind to send me this specimen.

ÁBRÁK — FIGURES:

1. *Creusia spinulosa* f. *cladangiae*.

- a. = Két héjlemez felülnézetben Two compartments.
 b. = Két héjlemez belső felülete The internal surface of the two compartments.

2. *Creusia spinulosa* f. *praespinulosa*.

- a. = Néhány példány korallon kívül a kőzetben (c) Some specimens embeddet in the sandstones (c).
 b. = Izolált példány A isolated specimen.
 c. = Példányok elhelyezkedése a kőzetben Specimens in the sandstones.
 d. = Szűk rádiusú példány Specimen with narrow radii.
 e. = Szélesebb rádiusú példány Specimen with largest radii.



- b. = Izolált példány A isolated specimen.
 c. = Példányok elhelyezkedése a kőzetben Specimens in the sandstones.
 d. = Szűk rádiusú példány Specimen with narrow radii.
 e. = Szélesebb rádiusú példány Specimen with largest radii.

3. *Scutum* (*Creusia* spn. f. *praespin.*)

- a. = Külső felület External surface.
 b. = Belső felület Internal surface.

4. *Andromacheia* Noszkyi.

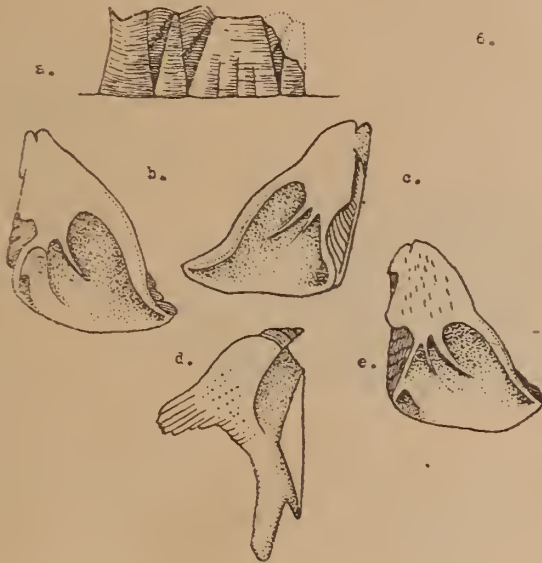
- a. = Héj felül nézetben Shell.
 x-y, x-xx, xx-yy, y-yy, = A négy lemez határai Limits of four compartments.
 b. = Basis vagy pseudomorphosa Basis or pseudomorphosa. (Pn).
 y-xx = A héj The shell.

5. *Creusia spinulosa* f. *praespinalosa*.

- a. = Példány egy *Ostrea* héjról. b. = Bázis *Specimen from a Ostrea. b. = Basis.*
 ** = A lemezek határai *Limits of compartments.*
 c. = A *pseudomorphosa* bordák és közti
 területük harántárai *Interspaces of costae and the transverse striae.*
 d. = Második példány az *Ostreáról* . . . *The another specimen from Ostrea.*

Balanus amphitrite Helenae n. ssp. foss.

Balanus amphitrite DARWIN has been found as a fossil in France, Italy, Hungary, Haiti and New-Zealand (tertiary age). Probably also in England, Germany (tertiary) and Sicily (tertiary and quaternary) under



the names *Balanus dolosus*, *balanoides* RANZANI, *stellaris*, *miser*, *pustularis*(?), *compressus*, *Plancianus* and *virgatus* (Synonyms).

Shell of the new subspecies short, cylindrical: 3 mm high, diameter 6 mm. Colour grey-blue, without ribs! Orifice large. Upper margin of the radii sloping and serrulate, with transversae striae. Alae large. Carina a little concave (Fig. 6. a.). Two scuta and 1 tergum are found. Scuta equally large and high; adductor ridge short and strong; articular-furrow broad (Fig. 6. b, c, e). Tergum with a long spur, articular-furrow also broad. (Fig. 6. d.)

The fossil subspecies has no longitudinal ribs in the compartments!

Locality: Budafok (Cap Buda), Mount Paesirta (Hungary); time: lower miocene (I. mediterranean) in *Ostrea* and Molluscs-bank. The specimens are attached to *Ostrea*-shell. Collectors: G. KOLOSVÁRY and his wife HELENE VEREB 1948.

Balanus Vadászi n. sp. foss.

Shell of the new species cylindro-conic (Fig. 7. a.); 20 mm. high, diameter 18 mm. Colour grey-white. Compartments with coarse white ridges. The ridges are straight. Orifice and radii narrow, the upper margin of the radii not parallel with the basis, but sloping. The scutum triangular, 1 cm high, length of the basis 8 mm; external surface without longitudinal striae for only transverse striae are present. Internal side (Fig. 7. b.) with characters like to the *Balanus concavus* BRONN. The basal margin of the scutum is peculiarly shaped and is quite different to the regularly convex basal margin of any form of *Balanus concavus* that has so far been described.



The present species has a shell very like *Balanus concavus proteus* CONRAD (1916, p. 103), but it cannot be identified with that form since the scutum has no longitudinal striae.

Locality: Felsőtárkány (Hungary) in balanid-bank, time: lower miocene (I. mediterranean), Collector FERENC LEGÁNYI.

I name this Cirripede to honour of the Professor Dr. ELEMÉR VADÁSZ in Budapest.

ÁBRÁK — FIGURES:

6. *Balanus amphitrite Helenae* n. ssp. foss.

- a. Héj — Shell
- b-c-e. Scutum
- d. Tergum.

7. *Balanus Vadászi* n. sp. foss.

- a. Héj — Shell
- b. Scutum.