THE FAMILY ACMAEIDAE - FIRST ADDENDUM -

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The revision of the family ACMAEIDAE we have given recently (Gloria Maris,1976,15(3):49-64) was a preliminary one. As our study is going on, we wish to give here a first addendum with a few corrections and some new identifications.

1) Acmaea bombayana Smith,1911, was identified as Collisella (Notoacmea) araneosa Gld. POWELL (1973,Indopacific Mollusca, 3(15):149) considers it as synonym of Cellana radiata, but the examination of the former type in the British Museum, permits us to say that it is certainly not. Having now received a typical bombayana with animal from Ceylon (leg Dr.ROLAN), we can affirm that it belongs to the genus Patelloida. The var.ceylanica Smith, 1911, is probably a real variety of P.bombayana and not Patelloida profunda subspec. as we stated and as WINCKWORTH (1928,Proc.malac. Soc.London,18:135) suggested.
Patella araneosa Gld. from the Indopacific is a variable species whose synonyms and subspecies are not well established. The shell seems to be a Notoacmea but the species belongs perhaps to the genus Patelloida instead of Collisella (Notoacmea), with possibly bombayana and pygmaea signatoides Koroda & Habe,1971, as subspecies. To permit a later comparison with araneosa, of which we have no radula, we figure at plate 1 the radula of Patelloida bombayana.

As synonym of Collisella araneosa we mentionned further Patelloida orbicularis Q.G. in pars (Info.Soc.belge malac.,1975, 4(4):102). Subsequently (Gloria Maris,1976,15(3):62) we identified the type-species in the Museum of Paris as Patelloida striata. This is still correct, but to avoid every misunderstanding, it is noteworthy, though we didn't treat the subspecific taxa, to mention that the types are small, little worn, typical P.borneensis Rve. As the shell-characters differ rather well from typical

striata and as all authors consider borneensis as synonym of P.striata, we can consider P.orbicularis (=borneensis) as a good subspecies of striata.

2) From Singapore we also received a Patelloida spec. (leg Dr.ROLAN) whose name is not quiet clear for us. The transparent shell is between P.biradiata Rve. from the China Seas (not sensu KEEN and McLEAN,1971,Tropical West America:327) and Patelloida cryptalirata Macpherson from Australia. It reinforces our opinion (Info.Soc.belge malac.,1975,4(4):104) that it is wise to keep the name Collisella vernicosa (Carp.,1865) for the panamic limpet instead of using the name biradiata Rve. From the same locality, besides C.gallensis, a species only known from Ceylon, we received at the same time another small Collisella spec., a little ally to C.versicolor. Neither of these species are mentionned by CHUANG (1961,On Malayan Shores,Publ.Muwu Shosa, Singapore). We figure the radula and shells of these Patelloida biradiata (?) and Collisella spec. and hope to be able to give correct identifications in the near future.

3) The radula of a japanese limpet received , under the name Patelloida pygmaea from the Suma Coast near Kobe, having only one marginal tooth (= unicuspis) but showing other lateral teeth than the radula of Collisella heroldi as figured by THIELE,1891, HABE,1944 and MOSKALEV,1970, induced us to state that our specimen was Collisella pygmaea (Gloria Maris,15(3):62). The shell of our specimen was an exterior pattern like P.pygmaea figured by the authors of "the Shells ofSagami Bay,1971", has an interior brown colour with black rays and is a little akin to Patelloida mimula from Australia. Some other specimens in our collection from Pusan, south Coast of Korea, a country given by the latter authors for P. pygmaea but not for C.heroldi, certainly belongs to the same species.
Having now before us a greater number of these japanese Collisella's, and admitting further that P.pygmaea and C.heroldi have been much admixed by many authors and collectors and

that P.luchuana has been wrongly identified with C.heroldi by all the recent japanese authors, we now have to admit that our studied limpet was badly identified and that it is probably Collisella luchuana instead of C.pygmaea. The radula with his broad, unpointed, inner cusp is near to the figure given by MOSKALEV (1970,Trudy Inst.Okeanol.,AN.CCCP,88:197) for C.luchuana but different from that given by HABE (1957,Proc.malac.Soc.London, 32(5):207) for the same species.

The real P.pygmaea from Japan is ally to some limpets from Australia, especially to the types of P.flammea Q.G. in the Museum of Paris. They may prove to be one and the same species and in that case Guam, mentionned by QUOY and GAIMARD for Patelloida flammea, might be a link between Japan and Australia. As we have no radula of P.pygmaea and of P.flammea typica, further investigation is certainly required.

4) The genus Pectinodonta. This genus, with P.arcuata from the West Indies as monotype, was created in 1882 by DALL (Proc.U.S. nat.Mus.(1881):409) for a species having gills exactly like Acmaea and a shell resembling Cocculina with a blunt, subcentral apex. DALL noted for the dentition the docoglossa formula $\frac{0}{0(1.1)0}$ (in our system 0.1.0.1.0)with teeth having transverse pectinated or denticulate cusps (Cocculina has a rhipidoglossa dentition !). SCHEPMAN (1908,Prosobranchia of Siboga Exp.,part I,49,book 39:96-97) described some new species from Indonesia (P.orientalis, P.alta and P.spec.). HABE (1949,Venus,15:67) studying the radula of Cocculina rhyssa Dall,1925,from Japan, found it to be a Pectinodonta. OLSSON (1971,Bull.mar.Sci.,21(1):88) mentionned a new species P.gilbertvossi from the Gulf of Panama and admitted that Cocculina nassa Dall,1908.(Moll.Mus.Comp.Zool.Harvard,43(6):341) could be a Pectinodonta.

All these countries (Lesser Antilles, Indonesia, Japan, Gulf of Panama) and the fact that Pectinodonta is a deepsea limpet, let suppose that the species has a much wider distribution. It is certain that all the species of the genus have not yet been found or identified (e.g. these placed in a wrong genus as it was the case with Cocculina rhyssa and probably with C.nassa).

A new step in that direction is the record of a new Pectinodonta in the Gulf of Gascogne, eastern Atlantic. It concerns Cocculina maxima Dautzenberg,1925 (Moll.nouv.Bull.Inst.Océanogr., 457:11) of which only one specimen from the Acores was known. Recently several specimens were found at a depth of 4200 m and more (Mission Biogas 1974, collector Jean-Charcot) and were identified as Pectinodonta by BOUCHET from the Museum Nat.Hist. Nat.Paris. The greatest dimensions of a dead shell are 26 x 20 x 21 mm. We examined the radula of a specimen dredged at 4450 m (station 5;44°25 N, 04°50 W), that we reproduce at plate 1, not only to confirm that it is a real Pectinodonta, but in support of our impression that the radula-formula of the genus Acmaea (0.3.0.3.0) has to be employed instead of 0.1.0.1.0. The 3 teeth form an inverted V , with the two inner lateral unicuspids attached to their supporting radula-plate and with the outer multicuspid tooth, having 10 -11 cusps attached to the following plate.

This remark brings the subfamily Pectinodontinae a little closer to Acmaeinae. The large head and the animal without eyes are probably constant characters of the genus Pectinodonta ; they also were found in Pectonodonta maxima.

Let us note finally that the radula and the shell of P.maxima are very akin to P.gilbertvossi and that the last species has perhaps to be considered as synonym or subspecies of P.maxima.

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Samenvatting :

Als addendum tot het artikel "de Familie Acmaeidae", worden hier de vier volgende punten behandeld : 1) Acmaea bombayana is een Patelloida en moet waarschijnlijk van Collisella (?) araneosa gescheiden worden. 2° Twee nieuwe soorten, waarvan de naam niet gekend is, kwamen ons uit Singapour ter hand. Het betreft Patelloida biradiata (?) en Collisella spec. 3) Een japans species werd door ons als Collisella pygmaea bestempeld. Het betreft echter Collisella luchuana hetwelk door de meeste auteurs als synoniem van C.heroldi beschouwd wordt. 4) Korte bespreking van het geslacht Pectinodonta waarin een nieuwe soort (P.maxima Dautz.,1925)) gedetermineerd werd.

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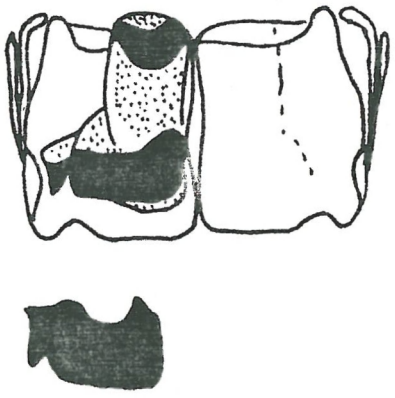

fig.1

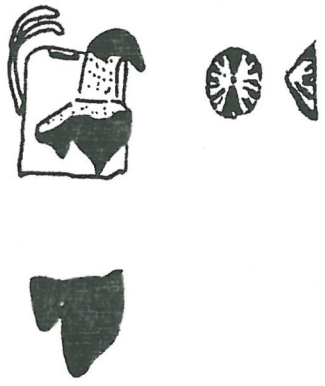

fig.2

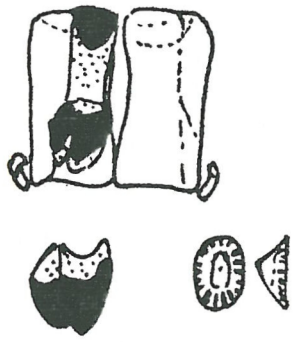

fig.3

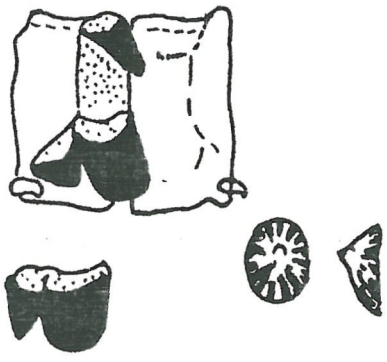

fig.4

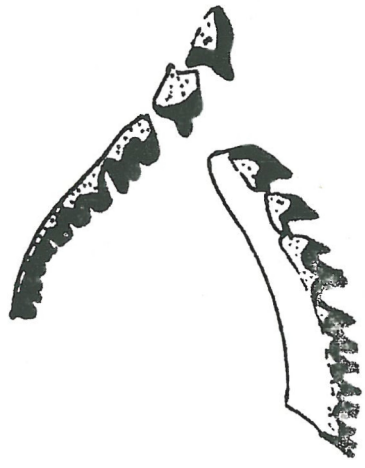

fig.5

PLATE I

Plate with radulae and detached cusps :

fig.1 : Patelloida bombayana (Smith,1911), Colombo,Ceylon.

fig.2 : Patelloida biradiata (?) (Reeve,1855), Singapore.

fig.3 : Collisella spec., Singapore.

fig.4 : Collisella luchuana (Pilsbry,1901), Suma Coast,Japan.

fig.5 : Pectinodonta maxima (Dautzenberg,1925), Gulf of Gascogne.