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THE MEDITERRANEAN DECAPOD AND STOMATOPOD CRUSTACEA IN A. RISSO'S PUBLISHED WORKS AND MANUSCRIPTS

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1. — INTRODUCTION

The Crustacea of the Mediterranean are among the first ever that have been scientifically studied. Aristotle's researches on the Decapoda of the eastern Mediterranean for a long time (until far into the Middle Ages) formed the basis of the knowledge of that group. The first printed works dealing with Crustacea (Belon, 1553, 1555; Rondelet, 1554; Aldrovandus, 1606, etc.) mainly dealt with Mediterranean species. But it was not until A. Risso in 1816 published his "Histoire Naturelle des Crustacés des environs de Nice" that the knowledge of the Mediterranean Crustacea obtained a firm basis. After the publication of Linnaeus's Systema Naturae and before 1816, it is true, several publications appeared in which Mediterranean Crustacea were dealt with (Brünnich, 1768; Olivi, 1792; Tilesius, 1796; Rafinesque, 1814, etc.), but these works as a rule also covered other groups and the Crustacea are usually treated rather superficially or haphazardly.

In two large and two small publications, Risso (1816, 1822, 1827, 1827a) gave a thorough account of the western Mediterranean Crustacea and described a wealth of new taxa. To these four publications may be added Risso's 1841 and 1844 guides, which contain a simple unannotated list of Crustacea found near Nice.

Most of Risso's descriptions are quite satisfactory and several species were figured by him. This caused that most of his names were immediately accepted by his contemporaries and a great number of them is dealt with in handbooks like H. Milne Edwards (1834-1840) "Histoire naturelle des Crustacés", and Heller's (1863) "Die Crustaceen des südlichen Europa". This made that Risso's names at present are widely accepted, and that his works are fundamental for a study of Mediterranean Decapods.

Although most of Risso's descriptions are readily recognizable, there is a number that have caused later authors much difficulty. In these cases the descriptions were not sufficiently complete or partly erroneous, and the names given by Risso were either interpreted in different ways and so caused confusion, or were entirely ignored.

It is a very fortunate circumstance that many of Risso's manuscripts and notes, at least a great part of them, are still preserved and are held by the library of the Muséum National d'Histoire Naturelle in Paris. It was Monod (1931) who first directed the attention to these manuscripts. Thanks to the help of Dr Th. Monod and the late Dr M. André, both of the Paris Museum, I was able to obtain photocopies of all of the pages of these manuscripts dealing with Crustacea. Many illustrations are present, among them several showing species that had been insufficiently described by Risso. In several instances they enabled the identification of the dubious species.

In the present paper I have listed all species of Decapod and Stomatopod Crustacea dealt with by Risso in his various publications and in his manuscripts. These species are placed in the order adopted by most modern carcinologists and the names used for them are the nomenclaturally valid ones. Under each species references are given to [1] the places where Risso treated these species in his publications, with the names that he used there for them, and [2] the manuscripts in which the species are mentioned, with the indication of whether their names are just listed, a description is given, or a figure is provided; the manuscripts are here indicated

by the lettering given to them in the list in par. 5. Where the species were mentioned by Hope (1851), or by Monod (1931), references to those papers are included, as are also references to papers listing or dealing with Risso's nomina nuda, nomina dubia, or unpublished names. The first author to list unpublished manuscript names by Risso is Hope (1851), who inserted them in his list of Mediterranean Crustacea, without, however, giving any details of the species; the names therefore remain nomina nuda and are unavailable; their identity is only interesting for historical purposes. Monod (1931) extensively dealt with Risso's manuscripts, giving a complete inventory of them. In Monod's paper also several of Risso's manuscript names are published for the first time, or some of the names listed by Hope were again mentioned. More important, Monod reproduced several of Risso's unpublished Crustacea illustrations in his paper.

Apart from the species dealt with by Risso, the new genera of Decapoda proposed by that author are likewise treated here (par. 4).

The treatment of the various species in the present paper is rather heterogeneous as much more attention is given to the little known species and those that so far were considered dubious, than to those that have always been correctly identified by subsequent authors.

I wish to express my deep gratitude to Dr. Th. Monod, who, already a long time ago, awakened my interest in Risso and the identity of the Crustacea described by him. Dr. Monod generously placed all his notes on Risso's Crustacea at my disposal, brought some overlooked publications (e.g. Risso, 1844) to my attention, and greatly assisted me in the present study. The late Dr. Marc André was kind enough to help me in obtaining the microfilm of the greater part of Risso's manuscripts.

2. — THE IMPORTANCE AND QUALITY OF RISSO's CARCINOLOGICAL WORK

In Risso's time, the first half of the 19th century, several authors devoted their attention to the fauna of the western Mediterranean area. Most of these, like Risso, were amateurs and worked in southern France (e.g., A. Risso and J.B. Vérany in Nice, Polydore Roux in Marseilles) and southern Italy (e.g., A. and O.G. Costa in Naples, C.S. Rafinesque, A. Cocco, G. de Natale, N. Prestandrea and A. Rizza in Sicily). Of all these authors, Risso was the most influential, even though not the most accomplished. Some of his descriptions are incomplete, lack mention of important details, or are inaccurate in places, while not all new species are figured; hereby a, be it relatively small, number of his new species could not be recognized. In some respects the descriptions given by several of the Sicilian authors are of a higher quality, but they have almost consistently been ignored, while those by Risso as a rule were immediately recognized. One of the reasons for this is that the papers by the Sicilian authors were published in very small editions, either privately printed or appearing in local periodicals with a very limited distribution; therefore most scientists of that time did not get acquainted with them. The publications by P. Roux and the two Costa's received more attention from the scientific public, not only because of their excellent illustrations and good descriptions, which left no doubt whatever as to the species meant by these authors, but also because they had a rather wide distribution. Unfortunately, neither the Costa's nor Roux finished their publications and only a part of the Decapoda that they intended to treat were published.

It is Risso's great merit that in both his 1816 and 1827 publications he covered the entire group of Decapoda known from the Nice area and in doing so he provided a handbook for the zoologists working in the western Mediterranean. Also his contacts with zoologists like P. Roux and W.E. Leach, as well as with the carcinologists of the Muséum d'Histoire naturelle in Paris, made that more attention was paid to his writings than to those by several other, perhaps more competent, carcinologists of the time.

All this does not mean that his contemporaries were not critical of Risso's work and that all regarded it to be of a very high standard. On the contrary, so Bourguignat (1861:6) characterized Risso as follows: « Ecrivain fécond, mais sans jugement, innovateur infatigable, mais absurde, Risso a embrassé dans ses écrits presque toutes les branches de l'histoire naturelle, sans en avoir bien traité une seule ». Latreille (1819, Nouv. Dict. Hist. Nat., ed. 2 vol. 30, pp. 69, 70), less extreme, remarked: « M. Risso..., dans son ouvrage sur les crustacés de la rivière de Nice, a décrit un assez grand nombre d'espèces inédites de salicoques. Mais en rendant justice à son zèle et à ses travaux, nous ne pouvons nous empêcher de dire qu'il n'a pas assez approfondi son sujet; que sou- [p. 70 :] vent l'on cherche en vain, dans ses descriptions, des connoissances relatives aux principaux organes sur lesquels repose la classification; que plusieurs de ces espèces sont mal placées, et que leur détermination, à raison de ces lacunes, embarrassera souvent les naturalistes. La science est si avancée et embrasse aujourd'hui tant de détails, que des descriptions incomplètes ne font qu'accroître ce chaos désigné sous le nom d'*incertae sedis*. » The archives of the Rijksmuseum van Natuurlijke Historie at Leiden contain letters of the well known Belgian malacologist F.J. Cantraine, who from 1827 to 1833 collected for the Leiden Museum in Italy and the nearby Mediterranean area. In a letter of 30 September 1827 Cantraine wrote that Risso's new book (i.e. Histoire naturelle de l'Europe méridionale) was recently published and that it was « beaucoup plus complet et aussi inexact dit-on » than his 1816 Crustacés des environs de Nice. Also A.G. Desmarest and H. Milne Edwards were quite critical of several of Risso's species and treated these as synonyms, species inquirenda or entirely ignored them. Desmarest (1825: 421-425), for instance, in a separate appendix to his well known « Considérations... » listed those species of Crustacea described by Risso (among which 17 species of Decapoda), which he (Desmarest) could not definitely assign to their correct genera: he had « des doutes sur l'exactitude de la détermination des genres auxquels ont été rapportés la plupart d'entr'elles ». H. Milne Edwards in his (1834-1840) « Histoire naturelle des Crustacés », although adopting most of Risso's species, at several instances indicated that he could not recognize a species of Risso's because of the incomplete or confusing description. Risso was evidently also criticized by the zoologists of the Muséum d'Histoire naturelle in Paris for making too many species. In a concept of a letter written by Risso to P. Roux (Ms. d, no. 20) Risso wrote: « Je m'étonne que vous ne faisiez que deux espèces de *Grapsus*. Bien certain que nos naturalistes de Paris, s'ils étoient témoin de la grande variabilité de ces Crustacés, ne se contenteroient pas de les ren-

fermer tous dans une seule espèce comme je l'ai fait pour ne pas faire crier trop haut Mr. Ferrusac, qui dit que nous croyons avoir trouvé dans le midi le centre d'Afrique », and « Les Ligia est un genre très riche en espèces, que je n'ai pas voulu fouiller crainte d'irriter l'humeur de nos savants de la capitale ». Also in Risso's published papers some rather bitter remarks about the Paris carcinologists can be found here and there.

Much milder was the opinion about Risso expressed by zoologists who, like Risso, worked under difficult conditions, far away from the centers of learning. Polydore Roux, who was a far better worker than Risso, wrote in the dedication of *Amathia rissoana* Roux (1828, pl. 3) as follows: « C'est à M. Risso, justement célèbre par ses importants travaux sur les Animaux de la Méditerranée, que je dédie cette ... espèce ..., le priant de ne voir dans ce souvenir de ma part qu'une faible expression de ma gratitude pour les secours scientifiques qu'il veut bien me prodiguer ».

Without abundant material for comparison and without library facilities, field workers like Risso were greatly handicapped, a handicap not easily understood by zoologists who worked in a more favorable environment. Risso's fear to assign material incorrectly to a previously described species is clearly shown in a remark made by him in a letter to P. Roux (Ms. d. no. 20): « Soyez en garde mon cher Monsieur contre cet écueil, de donner des noms des auteurs à des espèces qui paroissent lui convenir et qui en sont vraiment différentes. C'est un roc sur lequel j'ai fait plusieurs naufrages, n'ayant ici ni collection ni livres pour me servir de boussole ».

Even in recent times the situation, that zoologists in the field and Museum specialists do not understand each other too well, does occur and is not unusual: in the middle of the present century father and son Zariquiey of Barcelona had great trouble in convincing Museum carcinologists of the validity of several of the species that they recognized. Now that museum curators go out on expeditions themselves and do their own collecting, the situation has certainly improved.

The interpretation of Risso's descriptions nowadays is more easy than it was 150 years ago, and several of the forms that baffled Risso's contemporaries can now be recognized. This is mainly due to the fact that the Mediterranean fauna is much better known now, so that even poorly described species can often be easily recognized. Thereby it is easier to spot the inaccuracies in Risso's descriptions and to recognize where such descriptions have been based on faulty observations or on incomplete, abnormal, or poorly preserved specimens. Also the fact that now several unpublished illustrations of Risso's insufficiently known species have become available, makes that most of the doubtful species can be identified.

Looking back at the work of Risso's in the field of Decapod and Stomatopod carcinology one can only be impressed by the enormous amount of pioneer labour that has been produced by him in this field. His accomplishments become the more impressive when one considers that this work on Crustacea only formed a small part of his zoological studies (he covered practically all animal groups occuring in southern France), while he was quite active in botany also. Furthermore one can only be amazed by the wealth of material that he could obtain for his studies. Especially striking in this connection is the fact that so many species from very deep water were described by him, like those of the genera *Aristeus, Aristaeomorpha, Funchalia, Acanthephyra, Ligur, Paromola,* and *Geryon*. He must have obtained these (as he evidently did with most of his material) from professional fishermen. In a few instances it is known how the deep sea species were fished. Risso (1827: 35) stated about *Paromola* that these were taken with long lines « à la profondeur de mille mètres, où on la pêche au palangre » and in Ms. d. no. 20 he said « on en prend ... pourvu qu'on jette les hameçons dans les grandes profondeurs ». *Homola* was taken with fine meshed nets at « profondeurs de soixante à trois cents mètres ... ou on les pêche en jetant des filets serrés pendant le calme de la mer » (Risso, 1827: 36). *Aristeus* was obtained by Risso from fish stomachs: « On le trouve parfois dans l'estomac du *Lota elongata* [= *Molva dipterygia macrophthalma* (Rafinesque)] de nos mers » (Ms. b, see p. 43).

In all, Risso proposed (in print or in manuscript) at least 110 new epithets for Decapoda and Stomatopoda. Of these 28 are known only as nomina nuda or manuscript names, but 82 are duly described by Risso, and are available names. Of these 82 names, 50 are at present generally considered to be junior synonyms of other specific names, 27 are in general use, one (*Nika variegata*) has been suppressed by the International Commission on Zoological Nomenclature, three are valid but not used at the moment (*Nika sinuolata, Palemon microramphos, Maja crispata*), and of one the identity is uncertain (*Galathea antiqua*). This means that Risso introduced into science no less than 30 valid new species of Decapoda and two of Stomatopoda, the far greater majority of which was immediately accepted by subsequent authors.

As to the quality of his work, this is often somewhat superficial, and inaccuracies do not seldom occur; this is not surprising considering the enormous territory that Risso covered in his studies. Risso certainly cannot be classed as a very good systematist, although most of the species that he recognised are nowadays accepted (although not under the same names). In a few cases Risso confused several species under one species name, and in some instances described the same species under different specific and even generic names. His concept of genera and higher taxa was quite hazy and his genera often consist of a strange assemblage of species. That Risso was not too critical is shown by his treatment of *Calypso periculosa* (see under *Galathea strigosa*). His descriptions usually are quite sufficient to recognise the species, but in several instances they are too short or do not mention important characters. Risso's poor sense of what constitutes a genus made him assign species to the wrong genus and in this way lead astray other zoologists, who tried to recognize his species. As to his indications about the habitat of the species, in many cases he seems to have relied entirely, and uncritically, on information provided by others, and in many cases his decriptions of the habitats and habits are wildly improbable (e.g., that of *Calappa*). His ecological data therefore have to be treated with the utmost reserve.

Notwithstanding all this criticism of Risso's work, a surprisingly great number of his species were immediately recognized by contemporary and later carcinologists, and his names therefore, from the beginning, were widely used. Risso definitely laid the foundation for the study of the Mediterranean Decapoda, something which cannot be said of zoologists, like P. Roux, the quality of whose was far superior to that by Risso.

3. — LIST OF DECAPOD AND STOMATOPOD SPECIES IN RISSO'S PUBLICATIONS AND MANUSCRIPTS

Crustacea Decapoda

Penaeidea

Sergestidae

Sergestes arcticus Krøyer, 1855 (pl. I, fig. a)

Nika Sinuolata Risso, 1816 : 87.
Nika sinuolata-Risso, 1827 : 72.
Sergestes edwardii Risso, 1844 : 94 (nomen nudum).
Nika Serrulata-Hope, 1851 : 17.
Sergestes Edwardsii Hope, 1851 : 20 (nomen nudum).
Sergestes Edwardii Monod, 1931 : 122 (nommen nudum).
Decapode sans légende [? Sergestidé] Monod, 1931 : 123.
Nika sinuolata-Nouvel & Holthuis, 1957 : 6.
Sergestes edwardsi Risso, Ms., listed (b, e), description (b).
Sergestes Simiona Risso, Ms., listed (e).
Nika Sinuolata Risso, Ms., listed (e).
Unnamed Risso, Ms., figure (f).

This is one of the species described by Risso, which until now has remained an enigma to most carcinologists. Risso's (1816: 87) original description of *Nika Sinuolata* is as follows :

« *N.*[*ika*] *Testa sinuolata alba, rubro punctata; manibus aequalibus, dextra didactyla, sinistra monodactyla.* N.

Le caractère que présente le corcelet de cette espèce d'être traversé par des sinuosités régulières, au milieu, et terminé par trois pointes inégales, est suffisant pour la faire séparer des deux précédentes [*Nika edulis* and *N. variegata*]. Son corps est d'un blanc transparent, couvert d'une infinité de petits points d'un rouge carmin. Ses [p. 88 :] antennes supérieures sont blanches, à deux filets inégaux, dont l'extérieur est deux fois plus long que le corps et l'intérieur fort court : et tous les deux implantés sur un pédicule arrondi garni de deux épines. Ses antennes inférieures sont assez longues et soyeuses. Ses pièces latérales ovales et terminées en pointe. Ses pattes de la première paire, sont égales, la droite est didactyle, et la gauche monodactyle; les autres sont assez longues et poilues. Le dernier segment de l'abdomen porte un aiguillon de chaque côté. Les écailles caudales sont lancéolées, et bordées de poils, elles adhérent à une plaque solide qui est terminée par deux pointes. La femelle ne présente aucune différence d'avec le mâle.

Dimens. long. 0,026 *larg.* 0,003. *Séjour : dans les fucus du rivage.* »

Risso's later (1827) description differs in some points from the original:

« *N.* [*ika*] *Corpore albo, rubro punctato; manibus subaequalibus.* Riss., *Hist. nat. des crust.*, 87, 3.

Le corselet de cette espèce est traversé de sinuosités régulières au milieu, et terminé par trois pointes inégales; son corps est d'un blanc transparent; couvert de petits points carmins; les antennes intérieures ont un filet extrêmement long, l'autre fort court, tous les deux implantés sur un pédicule cylindrique armé de deux pointes; les pièces latérales sont ovales; les pieds mâchoires assez longs; les pattes de la première paire presque aussi longues que celles de la seconde; les autres sont parsemées de poils; le dernier segment de l'abdomen porte un ai- [p. 73 :] guillon de chaque côte; les écailles caudales sont lancéolées, bordées de poils; la plaque du milieu terminée par deux pointes.

La femelle ne présente aucune différence. Long. 0,026, larg. 0,003. Séj. Dans les fucus du rivage. App. Mai. »

The « sinuosités régulières » on which Risso lays so much stress and from which he derived the specific epithet *sinuolata,* evidently are artifacts, possibly caused by desiccation or by preservation. In this connection it is interesting that Riggio (1905: 185) when describing a specimen of the present species (which he indicated as *Sergestes arachnipodus*) from Messina, Sicily, noted : « Esistono vari solchi nello scudo, ma non posso dire se siano naturali o dovuti a contrazioni prodotte dall'alcool» (there are various grooves over the carapace, but I cannot say whether these are natural or due to contraction caused by the alcohol). Risso's (1816) statement that the right first leg is chelate and the left simple, is not repeated in his 1827 description, so that he evidently was not at all certain of the correctness of his original observation.

The rest of Risso's description checks very well with *Sergestes arcticus.* The « trois pointes inégales » in which the carapace ends, are formed by the rostrum and the supra-orbital spines. Also the transparent body with many very small red spots indicate *Sergestes arcticus.* The antennular flagella, one of which is very short, the other very long, the long antennal flagellum which is provided with hairs, the oval and pointed scaphocerite, the long and hairy pereiopods, and the description of the tailfan, all agree quite well with *Sergestes arcticus. Sergestes corniculum,* which also occurs in the Mediterranean, and which resembles *S. arcticus* in the general body shape and general coloration, differs from the latter species, in that especially the dorsal part of the carapace and the anterior half of the abdomen are spotted, and the spots are usually rather large, conspicuous and relatively few. In *S. arcticus* the spots are many and very small. Furthermore, in *S. arcticus* the supra-orbital spines are well developed, while in *S. corniculum* they are visible as low carinae with or without a small spinule. Therefore we can confidently identify *Nika sinuolata* with *Sergestes arcticus.*

In his manuscripts Risso gave no description of *Nika sinuolata* and listed it only once, but there is a figure (without legend) of a species of *Sergestes,* which cannot be anything but *S. arcticus.* Risso also provided a manuscript description (in Ms. b) of a *Sergestes edwardsi,* which might belong to the unnamed figure. This description is as follows:

« S[ergestes]. edwardsi S[ergestes]. Edwards
S[ergestes]. corpore rotundato, pellucido, lateraliter rubro punctato.

Cette espèce méditerranéenne diffère du Sergeste de l'Atlantique observé par Mr. Milne Edwards, par son corps arrondi, glabre, uni, transparent parsemé sur ses côtés de points carmin. Son corselet est comme tronqué, sur le devant terminé de chaque côté d'une petite dent; le rostre qu'on voit au milieu est sessile & se prolongue jusqu'aux tiers de sa longueur en arrière. Les yeux sont grands, saillants, noirs. Les antennes supérieures terminent par deux filets inégaux, situés sur d'assez longs pédicules, les inférieures sont plus subtiles. Les palpes, la bouche et la base de deux premières paires des pattes sont pourpres & sont munies, ainsi que les quatres autres paires des pattes d'un très petit appendice linéaire que l'animal développe avec vivacité, toutes sont monodactyles. L'abdomen est arrondi, terminé par une plaque solide, courte, bifide; les écailles caudales sont plus longues, plus étroites, dentées légèrement cobrées de rose.

La femelle est pleine de tout petits œufs transparents en aout.

Long. 00,30, Larg. 00,05. S'approche en été du rivage en légions nombreuses. Ils sont phosphoriques pendant la nuit et rejettés comme aliment. »

Here too the description and figure make it clear that *Sergestes arcticus* is meant; the large supra-orbital spines, and the size and arrangement of the red chromatophores exclude any other species.

The name *Nika sinuolata* has been cited by several later authors (Desmarest, 1823: 235; Desmarest, 1825: 231; Desmarest, 1830: 77; Lucas, 1838: 58; Carus, 1885: 479). All of these authors did neither see any material nor added to a better understanding of the species; they only cited Risso's description. Hope (1851: 20) cited the name in the incorrect spelling *Nika Serrulata.* White (1847 : 75) listed a specimen from Nice as preserved in the British Museum. This specimen which came from the Leach collection is still extant and is kept in the Crustacea section of the British Museum (Natural History). Through the kindness of Dr. R.W. Ingle I was allowed to examine this specimen, but my hope that it might finally show the identity of the species was not fulfilled, as the specimen proved to be of a species of *Alpheus* close to *Alpheus bisincisus* de Haan, with a flattened triangular rostrum, which dorsally was delimited by two deep lateral grooves, and with the orbital hoods not armed. The specimen is too incomplete to make its identity fully certain, but it clearly is not a Mediterranean species, and has nothing to do with *Nika sinuolata.*

One other record of material of « *Nika sinuolata* » has been published. A specimen of this species is supposed to have been collected by a Mr. Linares near Valencia, Spain, in the second half of last century (Buen, 1887: 421; Bolivar, 1892: 130; Boscá Seytre, 1916: 462). No descriptive data were given, so that nothing can be said about the identity of this material.

Nouvel & Holthuis (1957: 6), with some doubt, identified *Nika sinuolata* with *Sergestes arcticus.*

Risso's manuscript name *Sergestes edwardsii* has been published by Hope (1851: 20) as a nomen nudum. It thus is unavailable and neither invalidates *Sergestes arcticus,* of which it is a senior synonym, nor *Sergestes edwardsii* Krøyer, 1855, of which it is a senior homonym.

The name *Nika sinuolata* Risso, 1816, is a perfectly available name; since the epithet *sinuolata* Risso, 1816, is older than that or *arcticus* Krøyer, 1855, it is the valid epithet for the species in question, unless it is suppressed by the International Commission on Zoological Nomenclature. The combination *Sergestes sinuolatus* (Risso, 1816) so far has never been used for the species.

There are other old descriptions of Mediterranean species of *Sergestes* which have not been very well understood so far and have usually been ignored. So, Cocco (1823: 204, pl. fig. 1) described and figured from Messina, Sicily, under the name *Acheles arachnipodus,* a new species which clearly is *Sergestes corniculum* Krøyer, 1855. The species was redescribed and figured by De Natale (1850: 19, pl. 2 fig. 1) and mentioned by later authors (Hope, 1851: 20; Carus, 1885: 470), who did not see actual material and did not add to our knowledge of the species. Ostroumoff (1896: 67) reported « Sergestes arachnipodus De Nat. » from the Sea of Marmara, without giving any morphological details of his material. Riggio (1900: 20; 1905: 183, pl. 4 figs. 1-7) gave a description and figures of *Sergestes arachnipodus,* but as shown by his account and especially by his figure of the petasma, his material belongs to *Sergestes arcticus.* Hansen (1922: 75) commented upon Riggio's specimens as probably being *S. arcticus,* judged De Natale's description insufficient, and without having seen Cocco's original publication, considered that « le vieux nom *S. arachnipodus* doit être abandonné ». Holthuis & Gottlieb (1958: 111) mentioned Ostroumoff's *Sergestes arachnipodus* and doubtfully placed it under *Sergestes arcticus.*

The specific epithet *arachnipodus* Cocco, 1832, being older than that of *corniculum* Krøyer, 1855, should be used in the combination *Sergestes arachnipodus* (Cocco, 1832) instead of *Sergestes corniculum* Krøyer, 1855, unless it be suppressed by the International Commission on Zoological Nomenclature.

The generic name *Acheles* Cocco, 1832, falls as a junior synonym of *Sergestes* H. Milne Edwards, 1830.

The name *Sergestes Simiona* is listed in one of Risso's manuscript lists (Ms. e) entitled « Distributio Crustaceorum Salicoqui in mari Nicaense observavit ». No details are given by Risso of this species, and it possibly is the same as his *Sergestes edwardsi.*

Solenoceridae

Solenocera membranacea (Risso, 1816)

Peneus Membranaceus Risso, 1816 : 98.
Peneus membranaceus-Risso, 1827 : 68.
Penaeus Membranaceus-Hope, 1851 : 19.
Peneus membranaceus-Risso, 1844 : 95.
Peneus membranaceus Risso Ms., listed (b, d no. 2, e).

Peneus membranaceus Risso, 1816, has been interpreted differently by different authors. Heller (1863: 296, pl. 10 fig. 11) identified Risso's species incorrectly with *Parapenaeus longirostris* (Lucas, 1846), and was followed by several others in this. H. Milne Edwards (1837: 417) interpreted the species correctly and gave a good description of it; this species was indicated by Heller (1863: 295, pl. 10 fig. 12) as *Penaeus siphonocerus* Philippi, 1840. The question was definitely solved by the International Commission on Zoological Nomenclature (1961, Bull. zool. Nomencl., 18 (5): 306-311, pl. 4) in their Opinion 611, in which a neotype for *Peneus membranaceus* was selected in accordance with the actual identity of Risso's species. The epithet *membranacea* now has to be used in the correct sense, as adopted by H. Milne Edwards (1837), and given to the Mediterranean species of the genus *Solenocera.*

In his manuscript notes Risso mentioned *Peneus membranaceus* several times in lists, but gave no additional information of the species, and no illustrations of it were found.

Aristeidae

Aristaeomorpha foliacea (Risso, 1827) (pl. 2, fig. b)

Peneus foliaceus Risso, 1827 : 69, pl. 2 fig. 6.
Peneus foliaceus-Risso, 1844 : 95.
Penaeus Foliaceus-Hope, 1851 : 19.
Penaeus Meridionalis Hope, 1851 : 19 (nomen nudum).
Peneus meridionalis Monod, 1931 : 123 (nomen nudum).
Peneus foliaceus Risso, Ms., listed (b, d no. 2, 6 e).
Peneus meridionalis Risso, Ms., listed (b), figure (f).

Risso's description and figure of *Peneus foliaceus* leave not the least doubt as to the identity of his species, and the epithet *foliaceus* has been widely accepted by subsequent authors.

In Risso's manuscripts there is a figure, evidently of this species, with the name *Peneus meridionalis.* A note written by Dr. Th. Monod, attached to the figure, already identified it with *A. foliacea.* In the figure the rostrum shows 6 dorsal teeth in the basal part, and

none in the distal part. Evidently the distal dorsal teeth, which in *A. foliacea* are much smaller than the proximal, have been overlooked by the artist. The second maxillipeds and their long expods have been somewhat exaggerated in size. There can be little doubt, however, notwithstanding these inaccuracies, that the figure represents *Aristaeomorpha foliacea*. In only one place in the text of Risso's manuscripts *Peneus meridionalis* is mentioned, viz., in a list (in Ms. b) containing also the name *P. foliaceus*.

Aristeus antennatus (Risso, 1816) (pl. I, fig. b)

Peneus Antennatus Risso, 1816 : 96, pl. 2 fig. 6.
Peneus antennatus-Risso, 1827 : 68.
Sycionia duvernoii Risso, 1844 : 95 (nomen nudum).
Aristeus antennatus-Risso, 1844 : 95.
Sicyonia Duvernoyi Hope, 1851 : 19 (nomen nudum).
Aristeus Antennatus-Hope, 1851 : 19.
Aristeus antennatus-Monod, 1931 : 122, 123.
Sicyonia Duvernoi Monod, 1931 : 122, 123 (nomen nudum).
Paeneus antennatus-Monod, 1931 : 133.
Paeneus Antennatus Risso, Ms., description (h).
Aristeus antennatus Risso, Ms., listed (b, e), description (b), figure (f).
Peratus antennatus Risso, Ms., listed (e), description (b).
Peratus Duvernoi Risso, Ms., listed (e).
Sicyonia Duvernoi Risso, Ms., listed (b, e), description (b), figure (f).
Peneus antennatus Risso, Ms., listed (d no. 2).

Like with the previous species, no doubt has ever been attached to the identity of *Peneus antennatus* Risso, and the epithet *antennatus* has been used by practically all authors dealing with the species.

Risso, in manuscript h dating from 1811, gave an extensive description of *Paeneus Antenatus*, which is essentially the same as the description published in 1816, although the exact wording often is different.

In his manuscript b Risso adopted the generic name *Aristeus* Duvernoy, 1840, for the present species; this thus indicates that at least part of these notes date from after 1840. Risso himself had already planned a new genus *Peratus* for *Peneus antennatus* and two other, new, species. In his manuscript notes he made the following remark:

« En même tems que Mons^r. Duvernoy decouvroit la singulière structure de l'organisation des branchies rameuses du pennée à longues antennes, pour en former le genre Aristée, j'avois réunis après des caractères extérieurs pour établir de mon côté le genre Peratus avec les deux espèces nouvelles que je vais décrire. »

A footnote explains Peratus as « fils de Neptune ». The two new species are those that later in the manuscript are placed by Risso in *Sicyonia*, viz *S. Duvernoi* (see below) and *S. Genyani* (see *Funchalia woodwardi*, p. 44).

Risso's original description of *Peratus*, as far as this can be deciphered runs as follows:

« Peratus N. Peratus. Rostre large, plus ou moins long, comprimé, denté, à sommet recourbé. Pieds d'égale grosseur et longueur. La première paire aussi longue que la seconde, et celle ci que la troisième. Corps lisse, abdomen caréné. »

The name *Peratus*, however, is struck out and replaced by *Aristeus*, while also the description is corrected and written out again on another page of the same manuscript b:

« Rostre plus ou moins long & large, comprimé, denté, à pointe relevée où courbée. Carapace mince. Antennes externes très longues, mandibule forte, première mâchoire à deux lames prehensiles, seconde à quatre lanières à bords ciliés, pieds mâchoires de trois à cinq articles, l'externe grêle. Corselet à bord inférieur baillant; branchies rameuses; les trois premières paires de pattes didactyles, la première moins longue que la seconde, & celle-ci que la troisième. Abdomen carené. »

A note in Ms. b gives a definition of *Peratus* rather similar to the cited one; after that it gives a kind of key:

« Rostre large, court, courbé en arc : [Peratus] Duvernoy, [P.] Geny. Rostre alongé, aigu, recourbé, relevé aigu : [P.] antennatus. »

In manuscript b Risso gave two descriptions of *Aristeus antennatus* which are practically identical:

A[risteus]. antennatus.N. A[ristée]. aux longues antennes. Testa ruberrima, compressa. Rostro elongato, acuto, supra tridentato, infra piloso. Antennis inferioribus longissimis.

Le corps de cette espèce est long, comprimé, d'un rouge vif, à carapace mince. Son corselet est gros, renflé, baillant sur son bord inférieur, traversé latéralement par deux sutures, muni sur le devant par quatre aiguillons & terminé par un long rostre à trois dents en dessus, garni de quelques poils en dessous. Les yeux sont gros, placés sur des courts pédoncules. Les antennes intermédiaires supérieures ont deux filets articulés, l'un court, cilié, l'autre fort long, capillaire, très grêle, à pédoncule plus long que celui des antennes externes, lesquelles ne portent chacune qu'un filet blanchâtre trois fois plus long que le corps. Les lames laterales sont grandes, ovales, molles, membraneuses sur leur côté interne, solides sur leurs côtés externes qui terminent par une pointe.

Les trois paires de pattes antérieures ont de longues pinces didactyles serrulées avec quelques faisceaux de soies roides. Les deux dernières paires sont plus minces, plus longues, monodactyles. Les quatre premiers segments de l'abdomen sont arrondis sur le dos, les trois derniers sont carenés, terminés en pointe, adherent à la plaque intermédiaire qui est très pointue, creusée en dessus d'un sillon longitudinal. Les lames latérales de la nageoire caudale sont inégales, l'externe est beaucoup plus grande, marquée à son extrémité d'une légère suture transversale. Les fausses pattes abdominales sont en forme de lames inégales, lancéolées, & ciliées. »

This description is excellent in characterizing the species. Also Risso's manuscript figure of *Aristeus antennatus* is quite good.

The description of *Sicyonia Duvernoi*, also in Ms. b, is as follows:

« S[icyonia]. Duvernoi. N. S[icyone]. Duvernoi. S. testa maxima, ruberrima, azureo variegata; rostro subulato supra tridentato, infra glaberrimo ciliato.

Le corps de cette espèce est fort gros, d'un rouge carmin à différentes nuances d'azur pourpre. Son corselet est épais, arrondi, silloné sur les côtés, armé sur le devant de deux pointes subtiles & terminé par un rostre fort long, subulé, aigu, armé en dessus de trois aiguillons relevés, glabre, uni, & cilié en dessous. Les yeux sont globuleux, portés sur des courts pédoncules. Les écailles latérales sont subquadrangulaires, fort longues, membraneuses, garnies sur le côté externe d'une forte [pointe] osselet cylindrique, aigue, coupée en ligne droite du côté opposé & arrondies à leur sommité. Les deux antennes inférieures, moins longues que le corps, sont situées au bas des écailles et portées sur de longs supports à deux articles : le premier renflé, le second plus long, cylindrique, le reste très finement annelé. Les antennes supérieures, d'un rouge corail, sont situées sur d'assez longs supports à trois articles. Le premier est long, creux, aiguilloné, sert de support aux yeux, le second triangulaire, cilié, le dernier est muni de deux filets inégaux, l'extérieur assez long, finement articulé, l'intérieur très court, épais, rudimentaire. Les organes mandibulaires de différentes dimensions, sont anguleux, hérissés de poils. Les trois premières paires de pattes sont presque égales, profondément didactyles, dépourvus d'appendices. Les deux dernières sont fort longues, très subtiles, fort

déliées, terminées en mince fouet à leur extrémité. L'abdomen est composé de sept segments, les deux premiers sont arrondis, tous les autres sont carénés, terminant en pointe au milieu du dos, lisérés de cils sur leurs bords inférieurs. La plaque intermédiaire est courte, carénée, aiguë, bordée d'aiguillons de chaque côté. Les pièces latérales sont fort amples, ovales oblongues, poilues.

La femelle est pleine d'œufs d'un rouge brillant en août et septembre.

Dim[ensions]. Long. 0200 id. vertic. 0030. Séjour : Grandes profondeurs rocailleuses. On le trouve parfois dans l'estomac du *Lota elongata* de nos mers ».

This description and the good figure clearly show that *Sicyonia Duvernoi* is a synonym of *Aristeus antennatus*. In a note attached to the figure Monod had also come to this conclusion. The name *Sicyonia Duvernoi* has never been described by Risso, but he (Risso, 1844), Hope (1851: 19) and Monod (1931) published it as a nomen nudum.

Penaeidae

Penaeus kerathurus (Forskål, 1775)
(pl. I, fig. c; pl. 2, figs. a, d)

Alpheus Caramote Risso, 1816 : 90.
Peneus Mars Risso, 1816 : 97, pl. 2 fig. 5.
Alpheus punctulatus Risso, 1822 : 247.
Peneus caramote-Risso, 1827 : 67.
Peneus cristatus Risso, 1827 : 67.
Pandalus punctalus-Risso, 1827 : 80, pl. 2 fig. 7.
Alpheus punctulatus-Risso, 1827 a : 820, pl. 42 fig. 3.
Peneus cristatus-Risso, 1844 : 95.
Penaeus Caramote-Hope, 1851 : 19.
Penaeus Cristatus-Hope, 1851 : 19 (*P. Mars* cited as a synonym).
Penaeus Tigrinus-Hope, 1851 : 19.
Penaeus Fasciatus Hope, 1851 : 19 (nomen nudum).
Ephyra Punctulata-Hope, 1851 : 19.
Peneus tigrinus- Monod, 1931 : 122, 123.
Peneus fasciatus Monod, 1931 : 122, 123 (nomen nudum).
Alpheus martius-Monod, 1931 : 123.
Penaes cristatus-Monod, 1931 : 123.
Ephyra punctulata-Monod, 1931 : 123.
Peneus tigrinus Risso, Ms., listed (b, e), description (b), figure (f).
Peneus fasciatus Risso, Ms., listed (b), description (b), figure (f).
Peneus cristatus Risso, Ms., listed (b, e), figure (f).
Alpheus Martius Risso, Ms., figure (f).
Peneus caramote Risso, Ms., listed (b e).
Pandalus punctulatus Risso, Ms., listed (d no. 2, 6).
Ephyra punctulata Risso, Ms., listed (e), figure (as *Ephyra punctata*) (f).

In his published works Risso used the epithet *caramote* for the well known commercially important *Penaeus* of the Mediterranean. For a very long time *Penaeus caramote* (Risso, 1816) was the best known and most frequently used name for the species. But then it was found that the species had been described several times before the publication of Risso's 1816 work (viz., as *Cancer kerathurus* Forskål, 1775; *Palaemon sulcatus* Olivier, 1811; *Alpheus trisulcatus* Leach, 1814; and *Melicertus tigrinus* Rafinesque, 1814). The oldest of these names is currently adopted and the epithet *caramote* has gradually become obsolete.

The species *Peneus Mars* Risso, 1816, has never been well understood, although Risso gave an extensive description and a figure. In his 1827 work Risso gave the name *Peneus cristatus* to the same species; he did not refer here to his 1816 description, but the two descriptions are so similar that there can be no doubt about the objective synonymy of the two names. In Risso's manuscript notes « *Alpheus Martius* » is figured, but nowhere mentioned, while *Peneus cristatus* is both listed and figured; the two figures show clearly that they are made after the same specimen, which undoubtedly belongs to *Penaeus kerathurus*. The specimen has the rostrum quite abnormal, being evidently damaged and partly regenerated. Risso (1816: 97, 98) described it as follows : « Un cartilage, en forme de crête charnue d'un beau bleu celeste, se fait remarquer au sommet du [p. 98:] petit rostre bidenté de ce pennée ». Apart from this abnormality the figures in the manuscript show a perfectly normal *Penaeus kerathurus* with its characteristic coloration. The figure published by Risso in 1816 is very poor, but evidently is made after the same abnormal specimen. A handwritten note by Dr. Monod attached to the figures in the manuscript indicated them as « probablement exécrables figures de *P. trisulcatus* Leach », actually the figures are not bad, but only the specimen is abnormal. This abnormality evidently led most authors, trying to identify the species, astray. It shows the great qualities as a systematist of H. Milne Edwards (1837: 419) that he suspected the truth as he stated that the blue excrescence is a « disposition qui semble devoir être attribuée plutôt à quelque circonstance accidentelle qu'à la conformation normale de l'animal ». H. Milne Edwards also pointed out that *P. mars* and *P. cristatus* are based on the same specimen. Carus (1885: 471) under *Penaeus cristatus*, which he indicated as « non determinanda species », gave as localities : « Nizza, Risso; Genova, Veranyi »; however, in Véranyi's (1846) list of the invertebrates of the Bay of Genoa and Nice, the species is not mentioned. Vérany (1862: 64) did mention the species (as *Penaeus cristatus*) in his Zoologie des Alpes Maritimes, but this does not include the fauna of Genoa.

Another species described by Risso and usually considered a species dubia is *Alpheus punctulatus* Risso, 1822. Risso described the species three times (once in 1822, twice in 1827) and published two figures of it (both in 1827). The descriptions show that the species cannot be anything but *Penaeus kerathurus:* Risso described the characteristic coloration consisting of vertical reddish brown bands, the rostrum, with 10 dorsal and 1 ventral tooth, which is grooved at the base, the abdomen, which bears a median carina in the posterior part, etc. That only the first two pereiopods are shown chelate evidently is an error of the artist; the published figures are quite crude. The original figure in Risso's manuscript is only slightly better. I believe that one can safely synonymize *Alpheus* (or *Ephyra,* or *Pandalus*) *punctulatus* with *Penaeus kerathurus*. In the literature the species has not only been mentioned in the genera *Alpheus, Ephyra,* and *Pandalus,* as Risso did himself, but it was also indicated as *Pelias punctulatus* (by P. Roux, 1831: 26) and *Miersia punctulata* (by Carus, 1885: 479 and Bolivar, 1916: 251). Most authors evidently did not know what to make of the species and eventually it was entirely forgotten. The only record of specimens actually assigned to the species, that I know of, is the one by Barceló y Combis (1875: 65), who reported « *Ephyra punctulata* » from the Balearic Islands, Spain. The identity of Barceló's material is not known. In later catalogues of Spanish or Balearic Crustacea Barceló's record was repeatedly cited, but no new information was added (e.g., Buen, 1887: 410; Buen, 1916: 361; Bolivar, 1916: 251).

In the manuscript notes of Risso's there are two excellent figures of the present species showing the colour pattern and most taxonomically important details.

One of these figures is labelled *Peneus tigrinus,* the other *Peneus fasciatus.* Dr. Monod attached a note to both drawings indicating their identity with the present species. The epithet *tigrinus* evidently is not a new name introduced by Risso, but is based on *Melicertus tigrinus* Rafinesque, 1814, an early name for the species. Risso's manuscript (b) description of *Peneus tigrinus* runs as follows:

« P[eneus]. Tigrinus. N [superposed over « Raf. » which is struck out] P[enée]. Tigrin.

P. Testa solida luteo-iridescente picta punctis numerosissimis puniceis ornata. Rostra medio supra decemdento, infra piloso uniaculeato.

Melicerte Tigrinus Raf.

Le genre Melicerte du savant Rafinesque doit être supprimé puisque la seule espèce, tigrin, qui le constituait est un vrai pennée.

Son corps est svelte arrondi, à dos obtus sur le devant, caréné en arrière, coloré de jaune clair à diverses nuances changeantes, finement pointillé de carmin, de jaune, de brun, artistement dessiné, laissant emaner dans l'état de vie toutes les nuances de l'arc en ciel.

Le corselet est plutôt court traversé de chaque côté de deux sutures terminés sur le devant par un aiguillon relevé triangulaire. Le rostre, qui dépasse à peine les yeux est placé au milieu de deux sillons profonds, muni de dix pointes rougeâtres, poilues à leur base en dessus & d'un seul aiguillon entouré de poils en dessous. Les yeux sont gros, globuleux, scintillants, pointillés de brun, placés sur de pédoncules jaune rougeâtre. Les antennes intermédiaires intérieures sont courtes, bifides, ciliées, les extérieures sont minces, finement articulées, un peu plus longues que le corps. Les lames latérales sont oblongues, irisées, pointillées de rouge, chacune munie d'une pointe sur les côtés latéraux externes et ciliées en dessous. Les palpes sont assez longs, poileuses, blanchâtres, munis d'appendices rouges à leur base qui est en forme de faulx. La première paire des pattes est un peu plus renflée que la seconde, qui est plus longue, la troisième les dépasse, toutes les trois sont didactyles & les deux dernières paires terminent par des simples crochets.

L'abdomen est composé de sept segmens. L'antérieur est fort court, les quatre qui viennent ensuite sont tous dévellopés, terminent par un sinus. Les deux derniers sont carénés & aiguillonés à leur extrémité. La plaque caudale est solide, aiguë, profondément sillonée en dessus, munie sur son contour de six aiguillons. Les écailles, qui l'entourent sont larges, lineolées, colorées des nuances de l'iris, ciliées de carmin. Les fausses pattes abdominales sont médiocres, à plusieurs teintes, se divisent chacune en deux parties inégales.

La femelle m'est inconnue.

Diam. long. 0160 id. vertic. 0022. Séj. profondeurs coralligènes. Apar. Septembre ».

Risso's manuscript (b) contains two very similar descriptions of *Peneus fasciatus,* the most complete of these runs as follows:

« P[eneus]. Fasciatus. P. Fascié.

Son corps est un peu courbé, presque étendu en ligne droite. Il est coloré d'un blanc d'émail traversé sur le dos, sur les flancs & sur les bords de l'abdomen de petits traits inégaux violâtres formés par des réunions de très petits points pourpres. Le corselet est arrondi, diversement sinué; le rostre est court, commence au bout du corselet & s'en prolonge un peu au de la des yeux, il est muni de onze dents rougeâtres en dessus & d'une seule vers l'extrémité en dessous, accompagné de chaque côté d'une suture assez profonde. Les antennes supérieures sont fort courtes, à peine de la longueur des pièces latérales qui présentent les mêmes nuances du corps. Les antennes inférieures sont blanches, une fois et demie plus longue que le corps. Les palpes sont fort minces, subtils. La première paire des pattes courtes, la seconde un peu moins longue que la troisième, toutes les six sont d'un blanc transparent, bifides. Les deux dernières paires des pattes sont un peu longues. L'abdomen est comprimé, les trois derniers segmens sont carénés en dessus, terminent en pointe; la plaque intermédiaire est longue, effilée, aigue, bordée de roux avec quelques points jaunâtres. Les pièces latérales sont coloriés de blanc, de pourpre, et de bleu céleste. Ses pièces abdominales sont fort courtes.

Diam. Longu. 0114, id. vertic. 0013. Séj. Grandes profondeurs. Il est rejeté sur le rivage après des grandes tempêtes marines ».

The manuscript description and figure of *Peneus fasciatus* are so unmistakably based on *Penaeus kerathurus* that it is difficult to see why Risso considered this specimen to be a new species. The same is true for Risso's (or rather his conception of Rafinesque's) *Peneus tigrinus.* Interesting in this respect is a slip among Risso's papers (in Ms. b) bearing the following enumeration:

« *Peneus*
Rostre court

P. Caramote.
P. cristatus n. fig.

Rostre alongé

P. tigrinus Raf. fig.
P. fasciatus n. fig.
P. meridionalis n. fig.
P. foliaceus »

This note shows that Risso considered *P. caramote, P. cristatus, P. tigrinus,* and *P. fasciatus* to be good species, the former two differing from the latter pair in having the rostrum shorter. In another note (in Ms. b) Risso gave about the same division of *Peneus* but placed in the second group *P. tigrinus, P. foliaceus* and *P. membranaceus.*

Hope (1851 : 19) listed all the names used by Risso for the present species, correctly indicating the synonymy of *Peneus mars* and *P. cristatus.* As Hope did not provide any data for the manuscript names they remain nomina nuda; this also is true for Monod's (1931) use of these names.

Funchalia woodwardi Johnson, 1868 (pl. 7, fig. a)

Peneus Genianus Risso, 1841 : . (nomen nudum).
Sycionia geny Risso, 1844 : 95 (nomen nudum).
Sicyonia Genyana Hope, 1851 : 19 (nomen nudum).
Sicyonia Gényi Gény, 1873 : 163, pl. A fig. 2.
Peneus genyanus Monod, 1931 : 107 (nomen nudum).
Sicyonia Genyani Monod, 1931 : 122, 123 (nomen nudum).
Peneus Genyanus Risso, Ms., description (g).
Sicyonia Genyani Risso, Ms., listed (e), description (b), figure (f).
Sicyonia Genianus Risso, Ms., listed (b, e).
Peratus Genyanus Risso, Ms., listed (e).

The description of this species has not been published by Risso. His manuscript name was published as a nomen nudum first by himself Risso (1841, as *Peneus Genianus;* 1844, as *Sycionia geny*) then by Hope (1851, as *Sicyonia Genyana*) and finally by Monod (1931, as *Peneus genyanus*). Two good descriptions and an excellent figure are present in Risso's manuscripts. The description in Ms. b runs as follows :

« S[icyonia]. Genyani. N. S. Geny.
S[icyonia]. testa media, incarnata, rubro intense punctulata. Rostro brevi, curvo, subulato, supra duodecim dentato, infra glaberrimo, ciliato.

Ce Sicyone diffère de ses congenères par son corps svelte solide, d'une belle couleur de chair, couvert d'un duvet de cils très fins, qui en varie agréablement les nuances. Le

corselet est oblong, arrondi, un peu renflé, d'un pourpre violâtre, terminé de chaque coté d'une ligne relevé, bifurquée, qui se prolonge jusque près des yeux, les quels sont globuleux, d'un brun noir, ayant tout à côté une pointe aigue. Le rostre est court, semblable à une petite lame de canif courbé, il est garni en dessus de douze aiguillons rélévés rapprochés, & en dessous il est uni, glabre, cilié. Les écailles latérales sont presque semblables à celles de l'espèce cy dessus [= *Sicyonia Duvernoyi*, = *Aristeus antennatus*] avec l'osselet épineux plus court. Les antennes inférieures, deux fois plus longues que le corps, sont également supportées par deux articles plus renflés, cylindriques. Les antennes supérieures servent par leur base creuse anguleuse de support aux yeux, & terminent par deux filets assez longs, effilés, & inégaux. Les organes mandibulaires sont très longs, dilatés, ciliés. Les trois premières paires des pattes sont courtes, minces, presque égales, didactyles, les deux autres paires sont un peu plus longues, très subtiles, monodactyles à ongles crochues. L'abdomen est peint sur chaque segment d'une tache rouge vermillon, les trois dernières sont carénés, sculptés, linéolés. La plaque intermédiaire est courte, solide, aigue, garnie de chaque coté de deux larges lames ciliées, armées d'un aiguillon.

La femelle est moins brillante, les œufs sont d'un rosé tendre blancheâtre.

Dim. Long. 0100 id. vertic. 0016. Séj.. moyenne profondeurs. Apar. été. ».

Under the name *Peneus Genyanus* Risso gave a second description of the species, viz., in his manuscript (no. g) entitled « Poissons, Crustacés, Radiaires & Vers observés depuis la publication de l'histoire naturelle des principales productions de l'Europe méridionale », dated 1840. This description runs as follows :

« Peneus. Pennée. P. Genyanus n. P. Geny. P. testa membranacea, subsolida, carnea, rubro punctulata, rostro brevi, curvo, supra duodecimdentata, infra ciliis elongatis ornato, antennis inferioribus longissimis.

Ce pennée diffère des cinq espèces que j'ai décrites par son test alongé, un peu courbé, membraneux, assez solide, par son rostre court, en forme d'un petit sabre courbé, muni en dessus de douze pointes aigus, lesquelles se prolongent le long du corselet en une infinité de très petites aiguillons garni en dessous de longs cils soyeux. Les antennes antérieures sont médiocres, couleur de chair, placées sur un long support triarticulé, le premier est concave et sert à recevoir les yeux, les deux autres sont moins épais, et cerclés de rouge. Les yeux sont globuleux, d'un brun noir, presque sessiles, accompagnés en dessous d'une pointe roide solide. La bouche est entourée de deux rangées de longs palpes plumeux, sur le second adherent des pieds mâchoires fort développés, ciliés, à cinq articulations. Les antennes inférieures situées à côté des lames sont deux fois plus longues que le corps. Le corselet est d'un pourpre violâtre couvert de rugosités très sensibles sans sillons ni duvet. Les pattes sont minces, courtes, au nombre de cinq paires presque égales; les trois premières terminent par des mains didactyles à peine aparentes, les deux dernières sont crochues. L'abdomen est composé de sept segmens arrondis à dos d'âne, il est rugueux, couleur de chair, finement pointillé de rouge, peint sur chaque articulation d'une bande rouge vermillion, le dernier est muni au sommet de trois pointes, celle du milieu est la plus longue. Il est garni en dessous de cinq paires de pièces abdominales assez longues, garnies de cils, et terminé à l'extrémité par cinq écailles caudales inégales; celle du milieu est la plus courte et la plus solide. Les deux intermediaires sont un peu plus longues et cartilagineuses, et les deux externes sont les plus develloppées, armées d'un aiguillon assez fort. Long. 0100, larg. 0016. Séj. moyennes profondeurs. Aparit. été. Je ne connois pas la femelle ».

Although both descriptions probably are based on the same animal, it is interesting to see that they are in some respects in contradiction with each other : so the first states that the body is covered with a down of very fine hairs, while the latter says that the carapace shows neither grooves nor down. Apart from such inaccuracies there can be no doubt that the specimen figured and described by Risso as *Peneus Genyanus* or *Sicyonia Genyana* is identical with *Funchalia woodwardi* Johnson, 1868, a species, the original description of which is based on specimens from Madeira. Risso's (1841) nomen nudum *Peneus genyanus* is the first mention of the species in the literature.

Dr. Monod drew my attention to the fact that a description of Risso's species actually has been published, be it as late as 1873. Philippe Gény (1873 : 162-164), namely, gave a description of the species as « *Sicyonia Gényi* Nobis », citing *Peneus Gényanus* Risso as a synonym. The wording of Gény's description differs from that of both of Risso's manuscript descriptions cited above, and may be original; however, it clearly pertains to Risso's animal, which is furthermore confirmed by Gény's illustration, which is practically identical to Risso's unpublished figure (which is also painted by Gény), and furthermore Gény's remark (: 162) : « Cette espèce, citée par M. Risso, qui a bien voulu me la dédier dans son guide des étrangers à Nice, et à laquelle il avait consacré une description dans une histoire naturelle des crustacés des Alpes-Maritimes, qui malheureusement n'a pas vu le jour, paraît être restée inconnue jusqu'à ce moment ». *Sicyonia genyi* Gény, 1873, falls as a junior synonym of *Funchalia woodwardi* Johnson, 1868.

Gény (1873 : 162) also indicated that Risso (1841) in the first edition of his Guide des étrangers à Nice, had listed the species under the generic name *Peneus*. Unfortunately I have not been able to consult this publication by Risso.

As locality for the species Gény (1873 : 164) indicated : « l'exemplaire unique que je possède a été pris à six kilomètres environ au large du golfe de Nice, paraît habiter les grandes profondeurs pélagiennes ».

Risso's find of *Funchalia woodwardi* preceded the first publication of a description of the species by more than 25 years, and it was not until 1923 that adult specimens of the species were again reported from the Mediterranean. Stephensen in that year (1923 : 17), namely, listed 8 specimens as collected in the Mediterranean, most in the western basin, only two in the central basin (34°31′N 18°40′E and 38°33′N 15°29′E). Roger (1938 : 23, figs. 1-4) discussed two large specimens in the collection of the zoological station of Villefranche-sur-Mer, one of which was taken off Nice. According to Burkenroad (1936 : 135) the larvae described by Monticelli & Lo Bianco (1902 : 30) and Lo Bianco (1903 : 184, pl. 7 fig. 12) as *Aristeus antennatus* from the Gulf of Naples, and those reported upon by Stephensen (1923 : 15, fig. 6) as *Aristeomorpha foliacea* from the central and eastern basin of the Mediterranean, also belong to *Funchalia woodwardi*. Stephensen (1923 : 26, fig. 10), moreover, also mentioned some larvae from the central and eastern basin of the Mediterranean which he brought with some doubt to *Funchalia woodwardi*.

The apparent rarity of the species in the Mediterranean makes Risso's early record still more interesting.

Sicyonidae

Sicyonia carinata (Brünnich, 1768)

Sicyonia Carinata-Hope, 1851 : 19.
Sycionia exculpta Risso, Ms., listed (d no. 9).

Astacus squilla Risso, Ms., reference to Petagna, 1792 (d no. 33).

Among Risso's manuscript notes there is a list (Ms d no. 9) headed « Crustacés pour M. Risso ». This list according to a note by Dr. Monod is written by Polydore Roux (« de la main de Roux »), and evidently is of a collection sent by Roux to Risso. It contains the following item : « 135 Sycionia exculpta Milne Edwards Sicile ». The word *exculpta* evidently is a lapsus for *sculpta*.

It is interesting that Risso, who collected so many rare Mediterranean species, never published on this rather common and striking shrimp, and seemingly got to know it only late in life through material sent by Roux, and through Petagna's publication.

Stenopodidea
Stenopodidae

Stenopus spinosus (Risso, 1827)

Stenopus spinosus Risso, 1827 : 66, pl. 3 fig. 8.
Peneus spinosus-Risso, 1827 a : 819, pl. 42 fig. 1.
Stenozoma spinosa-Risso, 1844 : 95.
Stenopus Spinosus-Hope, 1851 : 20.
Stenopus spinosus-Monod, 1931 : 123.
Stenopus spinosus Risso, Ms., listed (d no. 2, 6; e), figure (f).
Stenozoma spinosus Risso, Ms., listed (e).

Risso (1827, 1827a) described and figured this species very well, and there has never been any doubt as to its identity. In the manuscripts the species is listed (twice as *Stenozoma spinosus*, which evidently is a lapsus), but not described. However, there is an excellent figure, which evidently is the original of the 1827a figure; the other published figure is of an even superior quality.

The lapsus *Stenozoma* for *Stenopus* was also published by Risso (1844).

Caridea
Oplophoridae

Acanthephyra pelagica (Risso, 1816) (pl. 2, fig. c)

Alpheus Pelagicus Risso, 1816 : 91, pl. 2 fig. 7.
Pandalus pelagicus-Risso, 1827 : 79, pl. 2 fig. 5.
Alpheus pelagicus-Risso, 1827 a : 820, pl. 42 fig. 2.
Ephyra pelagica-Risso, 1844 : 95.
Ephyra Pelagica-Hope, 1851 : 19.
Ephyra pelagica-Monod, 1931 : 107, 123, fig. 1.
Acanthephyra pelagica-Holthuis, 1947 a : 315.
Pandalus pelagicus Risso, Ms., listed (d no. 2, 6).
Ephyra pelagica Risso, Ms., listed (b, e), generic diagnosis (b), 2 figures (f).

For a long time the identity of Risso's *Alpheus pelagicus* has been considered uncertain. The three figures that Risso published of the species all were based on the same animal, which evidently had the rostrum broken. In Risso's manuscript notes there is a figure, which perhaps is the original of the three published by him. In addition, a second illustration is found in the manuscript, likewise labelled *Ephyra pelagica,* which provides an excellent figure of an *Acanthephyra;* both these figures were republished by Monod (1931 : 107, fig. 1). It is clear from the comparison of the two that the first figure was made from a multilated specimen. A study of the description and the two figures makes it clear that the species before Risso was *Acanthephyra haeckeli* (Von Martens, 1868). Holthuis (1947a : 315) restored the name *Acanthephyra pelagica* (Risso, 1816) to that species.

Pasiphaeidae

Pasiphaea sivado (Risso, 1816)

Alpheus Sivado Risso, 1816 : 93, pl. 3 fig. 4.
Pasiphae sivado-Risso, 1827 : 81.
Phasiphae sivado-Risso, 1844 : 95.
Pasiphaea Sivado-Hope, 1851 : 19.
Phasiphae sivado-Monod, 1931 : 123.
Phasiphae Sivado Risso, Ms., listed (b, d no. 2, e), generic diagnosis (b), figure (f).

Pasiphaea sivado (Risso) is a well known species and there never has been any doubt about its identity. The manuscript figure is excellent and clearly shows the species; it is far superior to the crude published figure.

Palaemonidae
Palaemoninae

Palaemon serratus (Pennant, 1777) pl. 4, figs. a, b)

Melicerta Triliana Risso, 1816 : 111 pl. 3 fig. 6.
Palemon trilianus-Risso, 1827 : 61.
Palemon latreillii-Risso, 1844 : 95.
Palemon punctulatus Risso, 1844 : 95 (nomen nudum).
Palaemon Treillianus-Hope, 1851 : 17.
Palaemon Latreillii-Hope, 1851 : 17.
? *Palaemon Bipunctatus* (Risso Ms.) Hope, 1851 : 17 (nomen nudum).
Palemon trilianus-Monod, 1931 : 123.
Palemon punctulatus Monod, 1931 : 122, 123 (nomen nudum).
Palemon Oratelli Monod, 1931 : 133 (nomen nudum).
? *Palemon Bipunctatus* Holthuis, 1950 : 21 (nomen nudum).
Palemon Oratelli Holthuis, 1950 : 22 (nomen nudum).
Palemon Oratelli Risso, Ms., description (h).
Palemon Trilianus Risso, Ms., listed (b, d no. 2, e), figure (f).
Palemon Punctulatus Risso, Ms., listed (b), description (b), figure (f).

Risso's species *Melicerta Triliana* was named by him in honour of P.A. Latreille. The specific epithet of the name has been changed by subsequent authors to *latreillei, latreillianus, latreilli, treillanus,* or *treillianus,* the last spelling being the more common. At present the name is generally considered a synonym of *Palaemon serratus* (Pennant), but in the previous and the beginning of the present century the epithet was often used for a supposed Mediterranean subspecies of *Palaemon serratus*.

Hope (1851) in his catalogue listed both « *Palaemon Treillianus,* Risso » and « *Palaemon Latreillii,* Risso »; it is not clear whether these are just spelling variants, or that actually two species are meant.

Risso's description of *Melicerta triliana* and *Palaemon trilianus* as well as his published and manuscript illustrations confirm the identity of that species with *P. serratus*.

Under the name *Palemon Punctulatus* a species is described and figured in Risso's manuscripts (Ms. b, f). Judging by the excellent figure, it cannot be anything but the present species. Risso's manuscript description runs as follows :

« P[alemon]. Punctulatus, N. P[alemon]. Ponctulé.

P[alemon]. corpore rubro carneo fasciis, punctisque rubro-purpureus picto.

Dans les différentes saisons & les divers états ou j'ai observé ce crustacé il a toujours été paré de la livrée suivante. Tout son corps est d'un rouge incarnat sur un fond transparent traversés en divers sens par des bandes des traits & d'une infinité de petits points rouge pourpre qui en relèvent l'éclat.

Le corselet est renflé, peint de lignes longitudinales régulières, qui s'étendent sur le devant armé de chaque côté de

deux pointes; les pièces latérales sont grandes, oblongues, ciliées, munies de deux aiguillons chacune. Le rostre est fort long, large, subtil, relevé, à dix dents en dessus & de six en dessous, terminé en pointe. Les antennes supérieures sont étroitement annellées de rouge, ses palpes sont longs, poilus. La première paire des pattes est grèle, la seconde est beaucoup plus grosse, plus renflée, aussi longue que les deux derniers. La troisième paire est un peu moins prolongée. Toutes sont cerclées de jaune et de rougeâtre à chacune de leur articulations.

L'abdomen est arrondi, traversé des bandes rouges & jaunâtres à chacune de ses articulations. Les écailles caudales sont ovales oblongues pointillées de rouge & ciliées. La plaque du milieu est courte, armée à sa base de quatre points & terminée par deux aiguillons courts.

La femelle porte des œufs rougeâtres, au printemps, qui changent de teinte à mesure qu'ils approchent de leur naissance.

Diam. Long. 0112 id. vertic. 0012. Séj. moyenne profondeurs rocailleuses. Ap. automne, hyver ».

The remarkable red colour described by Risso is either an aberration or caused by preservation. The figure shows a perfectly normal *Palaemon serratus,* and the description (apart from the colour) also fits that species.

Risso did not publish a description of *Palaemon punctulatus,* but the name was published as a nomen nudum by Risso (1844) and Monod (1931).

Hope (1851) in his catalogue did not mention *Palaemon punctulatus,* but listed "*Palaemon Bipunctatus,* Risso". As the latter name does not appear in Risso's manuscripts nor in his published works, one wonders whether "*bipunctatus*" might be an intentional or unintentional variant of "*punctulatus*".

Monod labelled both Risso's manuscript figures of *Palemon Trilianus* and *P. Punctulatus* as *Leander serratus* var. *triliana* (Risso).

Another manuscript name for this species is *Palemon Oratelli.* Under that name Risso, in his manuscript no. h, "Premier mémoire zoologique sur différentes espèces d'êtres organisés observés dans les environs de Nice", which is dated 1811, gave the following description of that species :

« Palemon Oratellien n. Palemon Oratelli n.

Cette espèce a le corps allongé d'un jaune rougeâtre, transparent, traversé par des lignes d'un rouge violet. Le corselet est renflé, terminé par un rostre de trente millimètres de longueur, octodenté en dessus, quinquedenté en dessous. Les yeux sont ronds, d'un rouge noirâtre, placés sur des courts pédicules. Les antennes supérieures se divisent en trois filets inégaux, situés sur un pédicule poileux, dont la base est en forme d'écaille ornée de deux pointes. Les inférieures sont plus longues, placées sur des pédicules renflés. Les pièces latérales sont presque quarrées,ciliées d'un côté, uniépineuses de l'autre, insérées par un prolongement épineux. Les palpes extérieures sont très longs et ciliées; les intérieurs fort courts. Les pinces sont épaisses, et renflées à leur sommité. Les pattes sont longues, aranéiformes, crochues, annelées de blanc, de jaune, et de violet. L'abdomen est composé de six segments, le dernier garni de quatre protubérances épineuses. Les écailles caudales sont ovales, pointillées de rouge, adhérentes à une plaque épineuse, qui se divise en deux au sommet. Ce palemon a 80 millimètres de longueur sur 16 de largeur. La femelle pond une grande quantité d'œufs jaunâtres en juillet ».

A comparison of this description with Risso's (1816) description of *Melicerta Triliana* shows that the two are practically the same and are only variants of a single description. Risso, before publishing the species, evidently changed the specific epithet from *Oratelli* to *Triliana.* So far the name *Palemon Oratelli* has only been published twice, both times as a nomen nudum : Monod (1931) referred to this unpublished Risso manuscript, and Holthuis (1950) referred to Monod's use of the name.

Palaemon xiphias (Risso, 1816) (pl. 3)

Palemon Xiphias Risso, 1816 : 102.
Palemon Trisetaceus Risso, 1816 : 103.
Palemon trisetaceus-Risso, 1827 : 60.
Palemon xiphias-Risso, 1827 : 60.
Palemon crenulatus Risso, 1827 : 60.
Palemon crenulatus-Risso, 1827a : 822.
Palemon xiphias-Risso, 1844 : 95.
Palemon trisetaceus-Risso, 1844 : 95.
Palemon crenulatus-Risso, 1844 : 95.
Palaemon Xiphias-Hope, 1851 : 17.
Palaemon crenulatus-Hope, 1851 : 17 (as a synonym of *P. xiphias*).
Palaemon Trisetaceus-Hope, 1851 : 17.
Palemon crenulatus-Monod 1931 : 122, 123.
Palemon xiphias-Monod, 1931 : 123.
Palemon trisetaceus-Monod, 1931 : 123.
Palemon Sogiontii Monod, 1931 : 133 (nomen nudum).
Palemon crenulatus-Holthuis, 1950 : 21.
Palemon Trisetaceus-Holthuis, 1950 : 21.
Palemon Sogiontii Holthuis, 1950 : 22 (nomen nudum).
Palemon Sogiontii Risso, Ms., description (h).
Palemon Xiphias Risso, Ms., listed (b, e), figure (f).
Palemon Trisetaceus Risso, Ms., listed (b, e), 2 figures (f).
Palemon Crenulatus Risso, Ms., description (b, e), listed (b), figure (f).

Palaemon xiphias is a well known species of prawn from the eelgrass community of the Mediterranean. The epithet *xiphias* has been used for it by practically all authors. Risso's published descriptions and the manuscript figure of the species fully confirm its identity.

Risso's published descriptions of *Palaemon trisetaceus* are insufficient for a certain recognition of the species, which by subsequent authors was either considered a species incerta (e.g., H. Milne Edwards, 1837 : 401; Holthuis, 1950 : 21), or entirely ignored. Risso's manuscripts do not contain a description of the species, but there are two excellent figures, one of a male, the other of a female, which clearly represent *Palaemon xiphias.*

Risso, in manuscript h, which is dated 1811, and entitled "Premier mémoire zoologique sur différentes espèces d'être organisés observés dans les environs de Nice", gave a description of *Palemon Sogiontii,* which runs as follows :

« 26. Palemon Sogiuntien n. Palemon Sogiontii n.

Le corps de cet homardien est bombé, d'un vert pâle, parsemé des petits points bruns. Le corselet est lisse terminé par un rostre de vingt millimètres de longueur, six denté en dessus, quinquedenté en dessous. Les yeux sont ronds, noirâtres. Les antennes supérieures ont trois filets courts, et inégaux, situés sur un pédicule en forme d'écaille, uniépineuse d'un côté, ciliée de l'autre. Les inférieures sont plus longues, annelées de rouge, placées sur un pédicule lisse; les pièces latérales sont oblongues ciliées d'une part, unidentées de l'autre. Les palpes extérieurs sont très longs et ciliés, les intérieurs courts. Les pinces courtes, les pattes longues, aranéiformes, crochues. L'abdomen est composé de six segmens dont le dernier à quatre épines. Les écailles caudales sont ovales, oblongues, adhérentes à une plaque uniépineuse qui se divise en trois soies raides à la sommité. Sa longueur est de 50 millimètres, sur 12 de largeur. La femelle est un peu plus grosse. Elle pond des œufs verdâtres en avril ».

This description is practically identical with that of *Palemon trisetaceus* Risso, 1816; and it is clear that *P. trisetaceus* is nothing but a different name for the unpublished *P. sogiontii.* So fas as I know the name

Palemon Sogiontii has only twice appeared in print, both times as a nomen nudum, viz., by Monod (1931) who referred to the above manuscript description by Risso, and by Holthuis (1950), who referred to Monod (1931).

There can be little doubt that Risso's (1816) statement in the diagnosis of *Palemon trisetaceus* (but not in the description) to the effect that the rostrum is small (rostro parvo) is erroneous. In the description of *P. Sogiontii,* namely, the species is said to have the rostrum 20 mm long, and also in the manuscript figures of *P. trisetaceus* it is shown to be of normal size. This error made that Risso's *P. trisetaceus* was not recognized by later authors, and that it remained a species incerta.

Palemon crenulatus was described by Risso in 1827 and 1827a. His manuscript description (in Ms b) is slightly different and runs as follows :

« P[alemon]. Crenulatus. N. P[alemon]. Crenulé. P[alemon]. corpore coerulescente, punctis minutissimis fusco-coeruleis ornato; rostro medio, curvo, supra octodentato.

Le palémon crénulé se distingue par son corps moins courbé d'un azuré clair sur un fond transparent couvert d'une infinité de petits points bleu foncé dont quelques uns sont pustulés.

Le corselet est lisse, transversé à sa base des lignes espacés de petits points bruns qui se dirigent vers les quatre pointes dont il est armé sur le devant. Les pièces latérales sont oblongues, diaphanes, pointillées, armées à leur base & vers l'extrémité extérieure d'une pointe aigue. Le rostre est médiocre, relevé, muni de huit dents en dessus & de cinq en dessous, terminé en pointe. Le plus court filet des antennes supérieures est profondément crénelé, presque serrulé; tous les autres sont annélés de rouge. Les antennes inférieures sont un peu plus longues que le corps. Les pattes sont assez longues et poileux sur leur bords. La première paire des pattes est plus mince que la seconde qui est plus longue, plus renflée au sommet, à dents colorées de rougeâtre. Les autres pattes sont égales parsemées de poils roides.

L'abdomen est arrondi, finement ponctué & tacheté de jaune sur les bords. Les écailles caudales sont ovalaires ciliées de rouge & de la plaque intermédiaire est presque aussi longue, terminée par cinq aiguillons, les deux du milieu sont les plus longs.

La femelle varie dans ses nuances, elle est pleine de petits œufs transparents vers la fin du printems & en été.

Diam. long. 0060 id. vertic. 0010. Séj. Régions des Algues. Apar. Hyver, printems, été ».

Risso's manuscript figure clearly shows that the species is *Palaemon xiphias,* which is not in contradiction to the descriptions. Roux (1830 : texte to pl. 38) already stated "Je rapporte au Palémon espadon [= *P. xiphias*] que M. Risso nous a fait connaître, le *crénélé* [= *P. crenulatus*] du même auteur, que je ne puis considérer que comme variant dans sa couleur et dans les dentelures du rostre, caractères qu'on sait être peu constans dans ce genre". Roux is followed in this by H. Milne Edwards (1837 : 393), Hope (1851 : 17) and other authors; Holthuis (1950) ranged the species among the species incertae.

Pontoniinae

Periclimenes scriptus (Risso, 1822)

Alpheus scriptus Risso, 1822 : 247.
Alpheus scriptus-Risso, 1827 : 78.
Alpheus scriptus-Risso, 1827a : 821.
Pelias scriptus-Risso 1844 : 95.
Pelias Scriptus-Hope, 1851 : 18.
Pelias scriptus Risso, Ms., listed (e).
Alpheus scriptus Risso, Ms., listed (e).

Periclimenes scriptus is a well understood species and the epithet *scriptus* is generally adopted for it. Risso's descriptions are quite straightforward.

Periclimenes amethysteus (Risso, 1827)

Alpheus amethystea Risso, 1827 : 77, pl. 4 fig. 16.
Alpheus amethysta-Risso, 1827a : 821.
Alpheus amethistea-Risso, 1844 : 95.
Pelias Amethysteus-Hope, 1851 : 18.
Alpheus amethystea Risso, Ms., listed (d no. 2, 6; e).

Like with *Periclimenes scriptus,* the identity of *P. amethysteus* is well known and the name is used at present in the correct sense. Some authors doubted whether *P. scriptus* and *P. amethysteus* represent two distinct species, but modern investigations showed that Risso was perfectly correct in separating them.

Pontonia pinnophylax (Otto, 1821)

Alpheus Tyrhenus-Risso, 1816 : 94, pl. 2 fig. 2 (not *Astacus tyrrhenus* Petagna, 1792, and the references).
Callianassa tyrrhena-Risso, 1827 : 54 (not the references).
Calianassa tyrrhena-Risso 1844 : 94.
Pontonia Tyrrhena-Hope, 1851 : 16.
Autonomea Olivi-Monod, 1931 : 123, 124, fig. 8 (not *Autonomaea olivii* Risso, 1816).
Autonomea Olivi Risso, Ms., listed (b, d no. 2, e), generic diagnosis (b), figure (f).
Callianassa tyrrhena Risso, Ms., description (d no. 6).

Risso's treatment of the present species is rather muddled. He described it quite clearly in 1816 under the name *Alpheus Tyrhenus* and published a reasonable good figure of it. He even indicated that it lives with *Pinna.* The name he used was based on *Astacus tyrrhenus* Petagna, which is, as clearly shown by Petagna's (1792 : 418, pl. 5 fig. 3) description and excellent figure, a species of *Callianassa.* Risso (1816) not only referred to Petagna, but also to Olivi (1792), whose *Cancer candidus* likewise distinctly is a *Callianassa.* In 1827 Risso changed the description slightly but it still refers clearly to *Pontonia pinnophylax;* he stated furthermore that the species is found in the summer in *Pinna nobilis,* but that fishermen assured him that it makes narrow vertical burrows in muddy sand. Here too, Risso got the two species mixed.

In his manuscript (d no. 6) a description is given of "*Callianassa tyrrhena*", which is practically identical with his 1827 description. Surprisingly, among Risso's manuscripts there the figure that Risso published in 1816 as *Alpheus Tyrhenus,* but this time with the inscription *Autonomea Olivi.* Also Risso's generic diagnosis of *Autonomea* as given in the manuscript fits *Pontonia;* this diagnosis runs as follows; "Rostre court, en pointe aiguë courbé; première paire des pattes très petites minces, subtiles; seconde paire très épaisse, renflée, toutes les deux didactyles". No description of *Autonomea Olivii* is given in the manuscripts. Risso's (1816 : 166; 1827 : 73) published descriptions of *Autonomaea* (or *Autonomea*) *olivii* are clearly based on *Alpheus glaber* (Olivi) (see p. 50). But Monod (1931) in referring to the manuscript figure of *Autonomea Olivi,* thus refers to the present species.

Pontonia flavomaculata Heller, 1864

Alciopes Heterochelus Risso, Ms., listed (e).

In one of his manuscript lists Risso mentioned the name *Alciopes heterochelus,* evidently referring to *Alciope heterochelus* Rafinesque (1814 : 24), a species,

which Holthuis (1954 : 20) showed to be identical with *Pontonia flavomaculata,* and which was suppressed by the International Commission on Zoological Nomenclature in their Opinion 522 (1958, Opin. Decl. Int. Comm. zool. Nomencl., 19 (9) : 211). The name appeared in Risso's list (Ms. e) entitled "Familia Crustaceae Salicoqui in mari Nicaeensi observavit ab A.R.". There is, however, no other indication that Risso ever saw a species that he identified with Rafinesque's.

Gnathophyllidae

Gnathophyllum elegans (Risso, 1816)

Alpheus Elegans Risso, 1816 : 92, pl. 2 fig. 4.
Drimo elegans-Risso, 1827 : 71, pl. 1 fig. 4.
Drimo elegans-Risso, 1844 : 95.
Gnathophyllum Elegans-Hope, 1851 : 18.
Drimo Elegans Risso, Ms., listed (d no. 6, e), generic diagnosis (b).
Grimo elegans Risso, Ms., figure (f).
Doto Elegans Risso, Ms., listed (d no. 2).

The specific epithet *elegans* has been consistently used for this species by practically all authors dealing with it. The generic name *Drimo* Risso, 1827, was accepted by a few authors, but is not used anymore now, as it is considered a junior synonym of *Gnathophyllum* Latreille, 1819. Risso's generic diagnosis of *Drimo* as given in manuscript b is as follows: "Rostre petit, denté; première paire des pattes courtes, plus minces, plus subtiles que la seconde paire qui est fort longue, renflée, épaisse, également didactyle". The name *Doto,* once used by Risso in his manuscript, evidently is a lapsus for *Drimo*. The manuscript figure bears the pencil legend *Grimo elegans* and clearly shows the present species.

Alpheidae

Athanas nitescens (Leach, 1814)

Palemon Laevirhincus Risso, 1816 : 108.
Alpheus levirhincus-Risso, 1827 : 75.
Nauplius laevirhincus-Risso, 1844 : 95.
Palaemon Laevirhynchus-Hope, 1851 : 17.
Nauplius laevirhinchus-Monod, 1931 : 122.
Nauplius laevirhinchus Risso Ms., description (b), listed (also the spelling *laevirhincus* is used) (e).

The description in the manuscript runs as follows :

« N[auplius]. [The N is superposed over the A of Alpheus] laevirhinchus n. N. Bec Lisse. N[auplius]. testa nigra, albo-punctata. Manibus inaequalibus, primo pari tenuissimo, glabro, secundo crasso.

Cette espèce [superposed over Le Nauplius bec lisse] fait le passage des Nauplides aux Alpheides. Une teinte de noir foncé parsemé de quelques points blanchâtres couvre son corps. Le corselet est muni sur le devant de trois pointes dont l'intermédiaire forme le rostre aigu, subulé, également uni & sans dents comme le précédent [= *N. variegatus,* = *Alpheus dentipes*]. Les yeux sont brillants portés sur des petits pédicules. Les antennes supérieures sont beaucoup plus courtes que les extérieures; les pièces latérales sont munies chacune d'une pointe aigue. La première paire des pattes est courte. La seconde plus développée est colorée de noirâtre, pointillée de gris. Toutes les deux sont didactyles. Les autres trois paires sont minces, annellées de blanchâtre & de violet.

L'abdomen est arrondi, terminé au bout d'une pointe de chaque côté. La plaque du milieu est subarrondie, liserée de blanchâtre, armée de quatre pointes & de quatre filets roides à son extrémité. Les écailles natatoires sont oblongues, bordées de longs cils.

La femelle pond des œufs noirâtres au printems.

Diam. longit. 0034 id. vertic. 0006. Séj. Régions des algues. Apar. chaque saison ».

This manuscript description comes very close to the 1827 published description by Risso.

Owing to some errors in Risso's description, *Palemon* (or *Alpheus*) *laevirhincus* has long remained a species of doubtful standing and has been ignored by most zoologists of the 19th and first half of the 20th centuries. Holthuis (1951 : 108, 109) showed that the presence of a small unarmed rostrum and the dark colour, among the Mediterranean shrimps, is only found in *Athanas nitescens*. The only character described by Risso, that does not fit that species, is the relative size of the first and second legs. In *A. nitescens* the first pair of pereiopods is decidedly larger and more robust than the second; Risso's description of the opposite must be a slip. Holthuis (1951) considered *A. laevirhincus* from the Mediterranean a species different from *A. nitescens* from the Atlantic. In a later publication Holthuis & Gottlieb (1958 : 27-32, figs. 2, 3) showed that there are so many transitions between a typical *A. laevirhincus* and a typical *A. nitescens* form, that the two forms must be considered to belong to a single species, for which the name *A. nitescens* (Leach) should be used.

Alpheus dentipes Guérin, 1832

Nika Variegata Risso, 1816 : 86.
Hippolytes variegatus-Risso, 1827 : 78, pl. 4 fig. 13.
Nauplius variegatus-Risso, 1844 : 95.
Alpheus Dentipes-Hope, 1851 : 16.
Nika Variegata-Hope, 1851 : 17.
Hippolytus Variegatus-Hope, 1851 : 18.
Nauplius variegatus-Monod, 1931 : 122, 123.
Hippolythes variegatus-Holthuis, 1947 : 24.
Virbius variegatus-Holthuis, 1947 : 25.
Nika variegata-Nouvel & Holthuis, 1957 : 5.
Hippolytes (and *Hypolite*) *variegatus* Risso, Ms., listed (d no. 2, 6).
Nauplius variegatus Risso, Ms., listed (e), description (b), generic diagnosis (b), figure (f).

Risso's manuscript description of *Nauplius variegatus* (Ms. b) is as follows :

« N[auplius]. testa griseo-virescente luteoque variegata; manibus inaequalibus; primo pari crasso, inflato, piloso; secundo tenuissimo.

Son corps est un peu renflé, arrondi, coloré de gris, de vert, varié de jaune rougeâtre avec une petite ligne longitudinale au milieu du dos. Son corselet est court, lisse, terminé sur le devant par trois pointes dont celle du milieu, qui forme le rostre, est un peu plus longue. Les yeux sont placés sur un court pédicule, les antennes intérieures sont verdâtres, les inférieures sont beaucoup plus longues. Les écailles latérales sont petites, oblongues, ciliées. Les palpes externes sont épineux. La première paire de pattes est inégale, épaisse, à quatrième articulation renflée, aplatie, armée de fortes dents entourées de poils. La seconde paire est mince, grèle avec le carpe multiarticulée, subtile. Toutes les deux sont didactyles. Les autres trois paires sont courtes, effilées, parsemées de poils & crochues.

L'abdomen est arrondi, terminé au bout d'une longue pointe de chaque côté. La plaque du milieu est courte, aplatie, armée en dessus de six aiguillons & des soies roides à son extrémité. Les écailles natatoires sont oblongues, inégales, ciliées.

La femelle dépose ses œufs verdâtres au printems & en été dans les fissures des roches du rivage, ou ces animaux font leur demeure habituelle en faisant entendre le petit bruit de leur doigt, quand la mer se retire.

Diam. longit. 0026 id. vertic. 0008. Séj. roches du littoral. Ap. toute l'année ».

Most subsequent authors were at a loss as to the identity of Risso's *Nika* (or *Hippolytes*) *variegata*. H. Milne Edwards (1837 : 365) said on this account that "les descriptions qu'il en a données ne sont pas suffisamment détaillées pour que nous puissons nous former une opinion à cet égard" (i.e. the status of the species). The species therefore has been ignored by most subsequent authors. The only recent record of the species based on actual material that I know of is Vatova's (1928 : 192) record of "*Hippolyte variegatus* Risso" from Sant' Andrea near Rovigno, Adriatic Sea. No details are given by Vatova to make the identity of his material clear.

Holthuis (1947 : 24) identified *Hippolytes variegata* (Risso) with *Athanas nitescens*. Later the same author (Holthuis, 1951 : 72) changed his opinion and made clear that *Hippolytes variegatus* (or *Nika variegata*) could only be *Alpheus dentipes*. This was confirmed when, in 1972, I was able to examine original material of Risso's species in the Natural History Museum in Nice; the specimens actually proved to be *Alpheus dentipes* Guérin. Risso's unpublished figure of the species, although better than the published one, is not of too good quality.

As Risso's name is much older than the one given by Guérin to the same species, and as the latter is well established, while the former has been a nomen dubium for more than 100 years, the International Commission on Zoological Nomenclature in their Opinion 606 (1961, Bull. zool. Nomencl., 18 (4) : 258, 259) suppressed the epithet *variegata* Risso, 1816, so as to make *Alpheus dentipes* Guérin, 1832 the valid name for the species.

P. Roux (1831 : 28) had already correctly placed the species in the genus *Alpheus*, while Carus (1885 : 478) assigned it to *Virbius*.

Alpheus glaber (Olivi, 1792)

Autonomaea Olivii Risso, 1816 : 166.
Autonomea Olivii-Risso, 1827 : 73.
Autonomia olivii-Risso, 1844 : 95.
Alpheus Ruber-Hope, 1851 : 16.
Autonomaea Olivii-Hope, 1851 : 16 (*A. glaber* cited as a synonym).
not *Autonomea Olivi* Monod, 1931 : 123 and Risso, Ms. (see *Pontonia pinnophylax*).

Autonomaea Olivii Risso, 1816, was a new name for *Cancer glaber* Olivi, 1792, as is clearly shown by Risso's reference to Olivi's description. Both Risso's 1816 and 1827 descriptions are clearly based on material of *Alpheus glaber* (Olivi). There can therefore be no doubt about the identity of *Autonomaea olivii*. The description and figure in Risso's manuscript under *Autonomea Olivi*, however, prove to represent *Pontonia pinnophylax* (see there, p. 48). It is not clear why Risso after 1827 switched the name from one species to the other. Anyhow, the lectotype specimen of *Autonomaea olivii* Risso, 1816, like that of *Cancer glaber* Olivi, 1792, is the specimen figured by Olivi (1792, pl. 3 fig. 4), and the two names are objective synonyms.

Another synonym of *Alpheus glaber* (Olivi, 1792) is *Cryptophthalmus ruber* Rafinesque (1814). Risso, in his manuscript, however, used this name for an entirely different species, viz., *Ligur ensiferus* (Risso) (vid. there p. 52).

Hippolytidae

Ligur ensiferus (Risso, 1816) (pl. 7 fig. d)

Palemon Ensiferus Risso, 1816 : 106.
Alpheus ensiferus-Risso, 1827 : 76.
Hippolyte Carneus Roux, 1831 : 28.
Hippolites carneus-Risso, 1844 : 95.
Lybia ensifera-Risso, 1844 : 95.
Hippolytus Carneus-Hope, 1851 : 18.
Hippolytus Incarnatus Hope, 1851 : 18 (nomen nudum).
Lybia Ensifera-Hope, 1851 : 18.
Hippolytes incarnatus Monod, 1931 : 107, 123 (nomen nudum).
Hippolyte carneus-Monod, 1931 : 122 (also as *Hippolytes carneus*).
Lybia ensiferus-Monod, 1931 : 122, 123.
Cryptophalmus ruber-Monod, 1931 : 123.
Palemon Vedianti Monod, 1931 : 133 (nomen nudum).
Hippolyte carneus-Holthuis, 1947 : 24 (also as *Hippolytes carneus*).
Hippolytes incarnatus Holthuis, 1947 : 24 (nomen nudum).
Ligur ensiferus-Holthuis, 1947 : 32.
Palemon Vedianti Holthuis, 1950 : 22 (nomen nudum).
Palemon Vedianti Risso, Ms., description (h).
Lybia Ensifera Risso, Ms., listed (b, e), descriptions (b, d no. 19), figure (f) (also as *Libia* and *Ensiferus*).
Hippolite (also *Hippolytes* and *Hippolites*) *Carneus* Risso, Ms., descriptions (a, b), listed (d no. 39, e).
Hippolytes Incarnatus Risso, Ms., description (g), figure (f).
Cryptophalmus Ruber Risso, Ms., listed (b, e), generic diagnosis (b), figure (f).
Mesapus fasciatus Risso, Ms., mentioned (b), generic diagnosis (b).

Palemon ensiferus has been a puzzle to most subsequent authors. So far as I know, in the previous century only a single author (Costa, 1838-1853, Fauna Regno di Napoli, (Pandalus) : 5 identified material with *Palaemon ensiferus;* judging by Costa's generic diagnosis, however, his specimens are true Palaemonids. Holthuis (1947 : 32, 33) identified *Palemon ensiferus* Risso, 1816, with *Ligur edwardsii* Sarato, 1885, and used the name *Ligur ensiferus* for the species. The manuscript description and figure of *Lybia ensifera* confirm this identification. The description in Ms. b is as follows (that in Ms. d no. 19 is practicaly identical) :

« L[ybia]. Ensifera. n. L[ybie]. Porte Glaive.

L[ybia]. rubro carnea, rostro longiore, supra quadridentato, infra quinquedentato.

Alpheus Ensiferus Risso. Mesapus fasciatus Rafin.

Le corps de ce salicoque est alongé, rélevé en bosse sur son troisième segment dorsal. Il est coloré d'un beau rouge carmin uniforme luisant, sur un fond semitransparent. Le corselet est armé en devant de quatre longues pointes inégales, aigues, surmonté au milieu d'un rostre qui ne dépasse pas les écailles latérales, qui est muni en dessus de quatre dents en laissant un grand espace vuide jusqu'à la pointe, et en dessous vers l'extrémité on en compte cinq très aigues. Les yeux sont noirâtres, luisants, presque sessiles. Les antennes extérieures sont deux fois & demi plus longues que le corps. Les supérieures centrales sont bifides, beaucoup moins longues & annelées. Les écailles latérales sont ovales oblongues, ciliées d'un côté, unies & glabres de l'autre. Les palpes sont longs, hérissés de poils d'un rouge foncé. La première paire des pattes est plus épaisse, plus courte, à pinces didactyles plus longues, que celles de la seconde paire qui est très alongée & fort mince à dernier carpe finement annellé, armé d'une pointe droite au sommet & terminée par un crochet denticulé comme didactyle. L'abdomen dans les deux sexes est muni de très longues lames ventrales ciliées. La plaque caudale intermédiaire est fort courte, conique, terminée par quatre pointes inégales ciliées. Les lames latérales sont garnies de longs poils.

La femelle est pleine d'œufs rougeâtres vers la fin du printems & en été.

Diam. longit. 0115-0120 id. vertic.0020-0024. Séj. régions profondes coralligènes. Apar. chacque saison ».

Risso, in his manuscripts, also dealt with the present species under the names *Hippolyte carneus, Hippolyte incarnatus, Palemon Vedianti, Mesapus fasciatus,* and *Cryptophthalmus ruber*. The first three are manuscript names by Risso, the fourth and fifth are species described by Rafinesque. Of *Hippolyte carneus* (the generic name of which is spelled in different ways, all incorrect) Risso provided two descriptions the second of which (Ms. b) runs as follows (if the first (of Ms. a) differs essentially from it, the version of the first is indicated in round brackets) :

« H[ippolite]. Carneus n. H. couleur de chair.

H. Corpore oblongo, armato, carneo, gibboso; rostro brevis, utrinque quadridentato; manibus inæqualibus. (H. testa oblonga, armata, carnea, gibbosa, brachiis equalibus).

Cette jolie espèce observée depuis long tems sur nos côtes (depuis plus de douze [originally it said depuis dix, but dix is struck out and replaced by plus de douze] ans sur nos bords) a le corps (présente un corps) alongé, courbé, rélévé en bosse au milieu, aminci vers la queue, coloré d'une teinte rose couleur de chair, entouré d'un cercle rouge foncé sur les bords de chaque articulation.

Le corselet est glabre, terminé (sur le devant) par un rostre court aigu, quadridenté, de chaque côté accompagné à sa base de deux pointes (latérales). Les yeux sont noirâtres placés sur un pédicule rouge. Les antennes supérieures ont leurs filets (Les antennes sont) extrêmement longs (longues et effilées). Les extérieures sont trois fois plus longues que le corps. Les écailles latérales sont oblongues presque quadrilatérales. Les palpes (pieds mâchoires) sont longs, épais, épineux, d'un rouge foncé. La première paire des pattes est un peu moins longue & aussi grosse que les palpes (organes) cy dessus, elle est didactyle. La seconde paire est alongée, extrêmement grèle, terminé par deux petits crochets bien foibles; toutes les autres paires des pattes sont subtiles, armées d'un seul crochet à la sommité (crochues au sommet).

L'abdomen est arrondi en dessus, terminé par une plaque solide garnie de quatre pointes à son extrémité (garnie à la sommité de deux pointes). Les écailles caudales sont oblongues, ciliées, les deux extérieures sont les plus longues.

La femelle porte des œufs transparents rosacés vers la fin du printems.

Dim. long. 0100 id. vertic. 0010 (0014). Séj. moyennes profondeurs. Ap. mai, juin. (Rare) ».

The manuscript name *Hippolyte carneus* of Risso's was made available by Polydore Roux (1831 : 27, 28), who divided the genus *Hippolyte* into two groups. His group B was characterized as follows :

« B, un grand nombre de divisions annulaires à la deuxième paire [p. 28 :] de pattes qui est très grêle et très longue; antennes très longues.

Hippolyte Carneus, nouvelle espèce, de quatre pouces de long, communiquée sous ce nom par M. Risso; Roux, pl. 54 ».

Roux evidently intended to figure the species in his "Crustacés de la Méditerranée et de son littoral" (1828-1830), but no plates after pl. 45 were published of that work. *Hippolyte carneus* Roux, 1831, falls as a junior synonym of *Palemon ensiferus* Risso, 1816. As far as I know the epithet *carneus* has not been adopted since for the present species neither has it been mentioned in check-lists.

Risso's manuscript description of *Hippolytes incarnatus,* given in his manuscript (g), dated 1840, is practically identical with the first of the descriptions of *Hippolyte carneus,* cited above, and there is no need to quote it here. Before giving the description of *H. incarnatus,* Risso made the following remark: « Aux caractères donné par Leach à ce genre [= *Hippolytes*] on doit ajouter : la seconde paire des pattes longue, grêle, les pièces qui la précèdent multiarticulées. Les trois autres paires de pattes monodactyles; pieds machoires externes épineux; carapace courte, terminée par un petit rostre comprimé, plus ou moins denté ». The figure of *H. incarnatus* in Risso's manuscript clearly shows the identity of the species. It is interesting that Hope (1851) used both the names *H. incarnatus* and *H. carneus* in his list. Apart from by Hope, the name *H. incarnatus* has only been used by Monod, 1931, and by Holthuis, 1947, in both cases as nomen nudum.

Of *Palemon Vedianti* Risso provided a description in his manuscript (no. h, dated 1811) « Sur differentes espèces d'êtres organisés, observés dans les environs de Nice ». This description runs as follows:

« Palemon vediantien n. Palemon vedianti n.

Ce palemon va le corps alongé, d'un rouge carmin, luisant. Le corselet est orné vers sa partie antérieure de quatre longues pointes, et terminé par un rostre de vingt quatre millimètres de longueur, quinquedenté en dessus, quadridenté en dessous. Les yeux sont ronds, noirâtres placés sur des courts pédicules aplatis. Les pièces latérales sont ovales oblongues, ciliées d'un côté, épineuses de l'autre. Les palpes extérieurs sont longs, arrondis, poileux, les intérieurs courts, aplatis et ciliés. Les antennes supérieures sont bifides, les inférieures filiformes. Les pinces sont courtes, et épaisses. Les pattes longues aranéiformes. L'abdomen a six segmens. Les écailles caudales longues et unidentées à leur sommet. Elles adherent à une plaque conique, ciliée sur ses bords. Cette espèce fréquente les endroits rocailleux et parvient à 110 millimètres de longueur, sur 20 de largeur. La femelle ne diffère du mâle que par ses larges appendices. Elle pond environ quatre cent œufs rougeâtres dans le moi d'avril et de juillet ».

This description is sufficiently like that of *P. Ensiferus* to make the identify of the two beyond doubt. The name *Palemon vedianti* has only been published as a nomen nudum, viz., by Monod (1931: 133) and Holthuis (1950: 22), who did not know the identity of the species.

As shown above, in the manuscript description of *Lybia ensifera,* Risso gave as a synonym *Mesapus fasciatus* Rafin[esque]. One of the pages in Risso's manuscript (b) is headed « Mesapus Raf. Mesape », but the rest of the page is blank. On another page (in Ms. b) a similar heading is followed by the following diagnosis:

« Première paire des pattes bien dévellopée, assez épaisse, didactyle. Seconde paire fort longue, amincie, annelée, terminée par un moignon tronquée; les trois dernières subtiles, filiformes, monodactyles. Rostre court, mince, aigu, muni de chaque côté de quatre aiguillons courbes,...

Ecailles de la base des antennes extérieures épineuses

M. fasciatus ? Raf. M. fascié ?

Le Mesape dont la description de Rafinesque est très insuffisante pour pouvoir le bien déterminer, présente un corps alongé, arrondi, se pliant au milieu ».

In another part of manuscript b there is a remark by Risso: « La *Lybia Ensifera* c'est le *Mesapus fasciatus* de Rafinesque, qui n'ayant pas été bien caractérisé ..., doit être supprimé ». Risso's short diagnosis of *Mesapus,* the fact that he placed *Mesapus fasciatus* in the synonymy of *Ligur ensiferus,* and the last cited remark, may be accepted as sufficient evidence to consider the specimens that Risso indicated as *Mesapus fasciatus* to be *L. ensiferus. Mesapus fasciatus* Rafinesque, 1814, usually is considered a synonym of *Pontophilus fasciatus* Risso

(1816). Rafinesque's names *Mesapus* and *M. fasciatus* indeed are suppressed by the International Commission on Zoological Nomenclature, viz. in Opinion 522 (1958, Opin. Decl. Int. Comm. zool. Nomencl., 19 (9): 209-248), more than 100 years after Risso's advice to do so.

The present species is mentioned under a sixth name in Risso's manuscripts, viz. as *Cryptophalmus ruber*, which is an erroneous spelling of *Cryptophthalmus ruber* Rafinesque (= *Alpheus glaber* (Olivi)). Risso's excellent unpublished figure shows clearly that his animal is not an *Alpheus* but clearly *Ligur ensiferus*. No description is given by Risso of the species, but the genus is diagnosed as follows: « Rostre médiocre, première paire de pattes courte, épaisse, didactyle; seconde paire filliforme, très longue, à carpe divisé en articulations annulaires ».

As the species is considered to be quite rare in the Mediterranean, it is amazing that Risso had so much material of it at his disposal.

Hippolyte inermis Leach, 1814

Palemon Olivieri Risso, 1816: 107.
Palemon Margaritaceus Risso, 1816:108.
Alpheus margaritaceus-Risso, 1827: 75.
Alpheus Olivieri-Risso, 1827:75, pl. 4 figs. 17, 18.
Alpheus elongatus Risso, 1827: 77.
Alpheus margaritaceus-Risso, 1844: 95.
Alpheus olivierii-Risso, 1844: 95.
Alpheus elongatus-Risso, 1844: 95.
Hippolytus Olivieri-Hope, 1851: 18.
Pelias Margaritaceus-Hope, 1851: 18.
Pelias Elongatus-Hope, 1851: 18.
Palemon Margaritaceus-Holthuis, 1947: 23.
Palemon Margaritaceus-Holthuis, 1950: 21.
Alpheus olivieri Risso, Ms., listed (e).
Alpheus margaritaceus Risso, Ms., listed (d no. 6, e).
Alpheus elongatus Risso, Ms., listed (e).

The published descriptions and figures of Risso's *Palemon* (or *Alpheus*) *Olivieri* make the identity with *Hippolyte inermis* perfectly clear.

Palemon margaritaceus Risso obviously is based on the same species, but on a specimen in which the blue-green chromatophores were contracted to « petits points bleus ». The fact that the rostrum is longer than the scaphocerites, and has no dorsal and two ventral teeth, shows that no other Mediterranean species can have been meant. Risso's 1816 description shows no characters that make it impossible to synonymize *P. margaritaceus* with *Hippolyte inermis*. The 1827 description is somewhat more extensive and indicates that « la première paire de pattes semblable à la seconde »; this, of course must be due to an incorrect observation. Holthuis (1947) already pointed to the probability that Risso's species belongs here.

Alpheus elongatus Risso, 1827, clearly also belongs in the present species. Risso's description of a « corps mince, effilé, d'une couleur verdâtre, couvert régulièrement de petits points rouges » suggest *Hippolyte inermis*, as does also the « rostre alongé, subtil, unidenté en dessus, bidenté en dessous », « la première paire de pattes est courte, plus renflée que la seconde », and finally Risso's qualified reference to Otto's (1821: 12) *Virbius viridis*. The size (total length 28 mm) also fits the present species better than any other *Hippolyte* species. In the manuscript notes of the species, no details of it are given, it is just listed. H. Milne Edwards (1837: 381) cited *Alpheus elongatus* among the species that probably belong to *Hippolyte* but of which too little was known to make its identity certain.

In his manuscripts Risso did not give any information on *A. olivieri* and *A. margaritaceus* either, the names are just listed there.

Thoralus cranchii (Leach, 1817)

Palemon Microramphos Risso, 1816: 104.
Palemon microrampos-Risso, 1827: 59.
Palaemon Microramphus-Hope, 1851: 17.
Palemon Microramphos-Holthuis, 1947: 23.
Palemon microramphos Risso, Ms., listed (e).

As Holthuis (1947) already pointed out, there can be little doubt that Risso's *Palemon microramphos* is either *Thoralus cranchii* (Leach, 1817) or *Eualus occultus* (Lebour, 1936). Both Risso's 1816 and 1827 descriptions speak of a small species (total length 18 mm), with the body somewhat swollen, uncoloured and with scattered chromatophores. Also the description of the very short rostrum with five dorsal and two ventral teeth fits very well. In the 1827 description it is said that the first pair of legs is « épaisse », a character found in both species (as in all other Hippolytidae).

As *Thoralus cranchii* is the more common of the two, it is most likely that Risso had that species before him. It would be worth while to have the specific epithet *microramphos* suppressed by the International Commission on Zoological Nomenclature, as it has not been adopted for any species in the last 100 years and as it is a senior synonym of either the well known and widely adopted epithet *cranchii*, or of the epithet *occultus*, which by now also is generally accepted, although not used as frequently as that of *cranchii*.

Lysmata seticaudata (Risso, 1816) (pl. 4 fig. d)

Palemon Cognetii Risso, 1816: 106.
Melicerta Seti Caudata Risso, 1816: 110, pl. 2 fig. 1.
Lysmata Risso 1816: 175.
Alpheus Cougneti-Risso, 1827: 76.
Lysmata seticaudata-Risso, 1827: 62.
Lysmata seticaudata-Risso, 1844: 95.
Alpheus cougneti-Risso, 1844: 95.
Lysmata Seticaudata-Hope, 1851: 17.
Lysmata seticaudata-Monod, 1931: 123.
*Palemon Cognetii-H*olthuis, 1950: 20.
Lysmata seticaudata Risso, Ms., listed (b, e), generic diagnosis (b), figure (f).
Alpheus Cougneti (*i*) Risso, Ms., listed (e).
Lysmata Risso, Ms., listed (d no. 2).

Lysmata seticaudata is one of the best known shrimps of the Mediterranean and there has never been any problem about its name or identity. Practically all authors immediately have adopted Risso's epithet *seticaudata* for it. Risso's published and manuscript figures confirm the identity as usually understood.

On the other hand the species indicated by Risso (1816, 1827) in his publications as *Palemon Cognetii* and *Alpheus Cougneti* has puzzled many authors. H. Milne Edwards (1837: 381) ranged it among the species that, if better known, might have to be assigned to *Hippolyte* (in the wide sense accepted by Milne Edwards). Holthuis (1950) treated it as a species incerta. Most other authors, even Roux (1831) and Hope (1851) ignored it completely, and so far no satisfactory identification has been brought forth. However, Risso's (1816) description can hardly lead to any conclusion other than that it is a *Lysmata seticaudata:*

« Le corps de ce palémon est d'un rouge corail pale, traversé dans toute sa longueur, par des bandes blanches qui en relèvent l'éclat. Le corselet est lisse, terminé près

des yeux, par une pointe aiguë. Le rostre très-court a sept dents en-dessus, et deux seulement en-dessous. Les pièces latérales ont deux aiguillons d'un côté et sont ciliées de l'autre; les antennes intérieures sont placées sur un pédicule renflé. Le dernier segment de l'abdomen supporte deux épines. Les écailles natatoires sont égales et ciliées: les deux latérales sont dentées. La femelle porte des œufs jaunâtres, en juin.

Dimens. long. 0,050 larg. 0,010. Séjour: dans la région des madrépores ».

The 1827 description adds that « la première paire de pattes plus courte que la seconde ». In all points these descriptions fit *Lysmata seticaudata* and no other species of Mediterranean shrimp; especially the colour pattern, the size and dentition of the rostrum and the shape of the first two pairs of legs are characteristic. Also the total size (50 or 54 mm) fits *Lysmata seticaudata.* We therefore can conveniently synonymize *Palemon Cognetii* with that species. As the two names are of the same date, I take this opportunity as first reviser to give *Melicerta Seti Caudata* precedence over *Palemon Cognetii.*

Lysmata nilita Dohrn & Holthuis, 1950 (pl. 4 fig. c)

Lysmata nilita Risso, 1844: 95 (nomen nudum).
Lysmata Nilita Hope, 1851: 17 (nomen nudum).
Lysmata nilita Monod, 1931: 123 (nomen nudum).
Lysmata nilita Holthuis, 1947: 24 (nomen nudum).
Lysmata nilita Dohrn & Holthuis, 1950: 339, text-fig. 1a-n, pl. 9.
Lysmata nilita Risso, Ms., listed (b, e), figure (f).
Lysmata linita Risso, Ms., listed (b).

Until 1950 the name *Lysmata nilita* was only known as a nomen nudum: Risso (1844), Hope (1851), Monod (1931) and Holthuis (1947) had mentioned it as a manuscript name of Risso's. When Dr. Peter Dohrn of the Zoological Station at Naples discovered this all-red *Lysmata* and sent me specimens for study, I had just seen Risso's manuscript in Paris and recognized the new *Lysmata* from the Bay of Naples as identical with Risso's *L. nilita.* For that reason Dr. Dohrn and I decided to employ Risso's name for the species which we described as new.

Risso's manuscript contains a good figure of the species, but no description. One page of the manuscript, evidently intended for this description, bears the heading: « 2. L. nilita n. L. nilite planch. figur. » but otherwise is blank.

Lysmata nilita probably has been confused by most authors with *L. seticaudata* to which it is very similar in most morphological non-colour characters. It is not surprising that Risso, who worked with living or fresh specimens noticed this species, while subsequent museum specialists overlooked it.

Processidae

Processa edulis (Risso, 1816)

Thalassalpes Bosc, 1813: 233.
Nika Edulis Risso, 1816: 85, pl. 3 fig. 3.
Nika edulis-Risso, 1827: 72.
Nika œdulis-Risso, 1844: 95.
Nika Edulis-Hope, 1851: 17.
Nika Edulis (or *Aedulis*) Risso, Ms., listed (b, d no. 2, e) generic diagnosis (b).

The species name *Nika edulis* has been used very frequently for the present species, especially during the last century. Then for a long time the name disappeared as a synonym of *Processa canaliculata* Leach, 1815. In 1936 Lebour (1936: 609-617) showed that, although the generic name *Nika* Risso, 1816, is a junior synonym of *Processa* Leach, 1815, the species *Processa edulis* (Risso, 1816) is distinct from *P. canaliculata* Leach, 1815. In a revision of the European *Processa* species Nouvel & Holthuis (1957) confirmed this, and redescribed Risso's species.

In his manuscript Risso only listed the present species and gave the following diagnosis of the genus *Nika:* « Rostre très court, en aiguillon; une patte de la première paire simple, monodactyle, l'autre inégale, annelée, didactyle ». This diagnosis is quite confused, the words « inégale, annelée » should have been omited.

The generic name *Thalassalpes* Bosc, 1813, for this genus, will be treated on p. 76.

Pandalidae

Parapandalus narval (Fabricius, 1787) (pl. 7 fig. c)

Palemon Pristis Risso, 1816: 105.
Ponthophilus pristis-Risso, 1827: 63, pl. 4 fig. 14.
Ponthophyllus pristis-Risso, 1844: 95.
Nisea formosa Risso, 1844: 95 (nomen nudum).
Pandalus Narwal-Hope, 1851: 18 (*P. pristis* cited as a synonym).
Pontophyllus (and *Pontophilus*) *pristis*-Monod, 1931: 123.
Nisea formosa Monod, 1931: 122, 123 (nomen nudum).
Pontophylus (or *Pontophyllus,* or *Pontophilus*) *pristis* Risso, Ms., listed (b, d, no. 2, 6, e), generic diagnosis (b), 2 figures (f).
Pontophilus Risso, Ms., figure (f).
Nisea Formosa Risso, Ms., listed (e), description (b), figures (f).
Pontophylle scie Risso, Ms., description (d no. 7).

Risso's (1816 and 1827) descriptions, and especially his 1827 illustration, are unmistakable and there has never been any doubt about the identity of his species, which until about the middle of this century was usually indicated as *Parapandalus pristis* (Risso, 1816). Holthuis (1947a: 316-318) pointed out, however, that *Astacus narval* Fabricius, 1787, is conspecific with Risso's species and that therefore Fabricius' name, the older of the two, has to be used for it. Until then another species was usually indicated with the name *Parapandalus narval,* it proved to have to be named *Plesionika edwardsii* (Brandt, 1851).

Risso's unpublished figures of « *Pontophyllus Pristis* » confirm the identity of that species with the present.

In Risso's manuscript b the present species is described and figured also under the name *Nisea Formosa.* The description of the genus *Nisea* and the species *Nisea Formosa* being as follows:

« Les Niseides ont la première paire de pattes didactyles.

Nisea (1) N Nisée

Rostre très long, serrulé, première paire des pattes un peu renflée didactyle, toutes les autres terminées par un crochet simple.

N. Formosa N N. Gentille

Ce crustacé doit être séparé du précédent [*Nika edulis*] par la regularité de ses organes de mouvement, qui ne présentent aucune anomalie.

Son corps est svelte, lisse, coloré de rouge à plusieurs nuances, traversé longitudinalement des bandes jaune-verdâtre, dont une de chaque côté est finement pointillée de rougeâtre. Le rostre est très long, fortement serrulé, effilé, il commence à l'extrémité du corselet & se prolonge en fine pointe aiguë. Le corselet est court, terminé sur le devant par deux pointes. Les yeux sont noirs, saillants,

(1) Nymphe marine.

portés sur d'assez longs pédicules. Les antennes supérieures ont deux filets forts longs, inégaux. Les extérieures sont presque deux fois la longueur du corps. Les palpes sont courts, minces, sans aucun appendice. La première paire des pattes est la plus épaisse, la plus renflée, la plus courte & la seule didactyle; toutes les autres sont minces, très délices, à seconde articulation armée d'une rangée de fines pointes & terminées par un foible crochet.

L'abdomen est arqué, arrondi, à dernier segment alongé, aigu de chaque côté. La pièce intermédiaire est armée de quatre fines aiguillons à sa base & termine par quatre pointes dont deux plus longues. Elle est accompagnée des lames natatoires ovales oblongues, ciliées à l'extrémité, avec les deux externes munies d'une pointe.

La femelle diffère très peu du mâle par ses teintes. Elle est pleine de petits œufs cendrés pointillés de noire, qu'elle fraye pendant l'été.

Diam. Long. 00 (*sic*) id. Vertic. 00 (*sic*) Séj. Régions madréporiques. Apar. Chaque saison ».

The manuscript figure, like the description shows a perfectly good *Parapandalus narval,* only the artist has interchanged the first and second pair of legs: the first being distinctly chelate, the second longer, thinner and without chela. An error like that is easily made, and it is possible that Risso made his description from the figure. There can be not the least doubt that *Nisea formosa* is a synonym of *Parapandalus narval.*

Plesionika edwardsii (Brandt, 1851) (pl. 7 fig. b)

Pandalus guerinii Risso, 1844: 95 (nomen nudum).
Pandalus Guerinii Hope, 1851: 18 (nomen nudum).
Pandalus Guerini Monod, 1931: 109, 122, 123, fig. 2.
Pandalus Guerini Risso, Ms., listed (e), description (b), 2 figures (f).

This is the only species that was placed in the genus *Pandalus* by Risso. His definition of the genus was as follows:

« Rostre mince, très long & finement serrulé avec de forts dents à sa base; première paire des pattes, courte, ciliée à l'extrémité, petitement didactyle; seconde paire allongée, plus dévellopée, didactyle ».

The species description is the following:

« P[andalus]. Guerini N. P[andale]. Guérin

P[andalus]. testa subrecta incarnata, fasciis longitudinalibus punctulatis ornata; rostro elongato, serrulato, antennis longissimis.

Ce singulier Crustacé qu'on ne peut pas insérer parmi les pontophyles caracterisera peut être mieux le genre pandale de Latreille, qui ne devroit renfermer que les Salicoques à long rostre effilé, fortement denté à la base & serrulé en suite jusqu'au sommet.

Le corps de cette espèce est alongé, presque droit, courbé au milieu, d'une belle couleur de chair, traversé des bandes longitudinales, blanchâtres, finement pointillées de rose clair; le corselet est un peu renflé, sinué, terminé de chaque côté par deux pointes; le rostre est fort long, relevé, aigu, armé à sa base de sept grosses dents, minces, finement serrulé ensuite par trente un petits aiguillons; le dessous en renferme quarante un. Les antennes supérieures sont élagies à leur base, à deux longs filaments articulés, inégaux, l'intérieure une fois et demie plus long que le corps. Les inférieures sont plus grèle, également articulées, presque trois fois plus longues. Les yeux sont gros, enfoncés. Les pièces latérales oblongues ciliées, transparentes. Les palpes sont longs, épais, munis à leur base d'un fort appendice linéaire, d'un rouge vif. La première paire des pattes (mince, grêle [both words struck out]) courte, assez renflé, terminées par deux fins crochets entourés de cils. La seconde est mince, aigue, fort longue, terminée didactyle en moignon. Les autres trois paires sont fort longues, grêles, à troisième article épineux, & cilié sur chaque articulation,

L'abdomen est arrondi épais à segmens terminés en pointe. Il est traversé longitudinalement des bandes blanchâtres, pointillées de rouge. Les pièces natatoires sont simples, articulées, un peu courbes. La plaque intermédiaire est solide, armée de chaque côté de trois aiguillons & terminée par deux longues pointes; les quatre pièces qui l'entourent sont d'une teinte plus colorée, ovale oblongues, ciliées, les deux externes munies d'une pointe.

La femelle depose les œufs couleur indigo pale vers la fin du printems.

Diam. long. 0164 Id. vertic. 0024 Séj. profondeurs rocailleuses. Apar. printems, automne, été ».

Risso's description and figures clearly show the identity of his *Pandalus Guerini* with *Plesionika edwardsii* (Brandt, 1851). Monod (1931: 109, fig. 2) in publishing the name *Pandalus Guerini* together with a reproduction of one of Risso's manuscript figures, made that name available as of 1931. *Pandalus guerini* Monod, 1931, however, disappears in the synonymy of *Plesionika edwardsii.*

Crangonidae

Crangon crangon (Linnaeus, 1758)

Crangon Rubro punctatus Risso, 1816: 83.
Crangon rubro punctatus-Risso, 1827: 65.
Crangon rubro punctatus-Risso, 1844: 95.
Crangon Rubropunctatus-Hope 1851: 15.
Crangon Rubropunctatus Risso, Ms., listed (e).

Crangon rubropunctatus is generally considered a synonym of *Crangon crangon* (L.), and the epithet *rubropunctatus* has only been used by those authors, who considered the Mediterranean *Crangon* a species or subspecies different from the Atlantic form.

Pontophilus fasciatus (Risso, 1816)

Crangon Fasciatus Risso, 1816: 82, pl. 3 fig. 5.
Crangon fasciatus-Risso, 1827: 64.
Crangon fasciatus-Risso, 1844: 95.
Crangon Fasciatus-Hope, 1851: 15.
Crangon Fasciatus Risso, Ms., listed (b, d no. 2, e), generic diagnosis (b).
Mesapus Risso, Ms., listed (b).

There has hardly ever been any doubt as to the identity of Risso's *Crangon fasciatus* and in all modern handbooks it is used for the species which is well described by Kemp (1910: 151, pl. 21 fig. 3) as *Philocheras fasciatus* (Risso).

Although no doubt seems ever to have been attached to Risso's *Crangon fasciatus,* when one carefully reads Risso's description of that species it proves to differ in several points from what is found in *Philocheras fasciatus* sensu Kemp. In the latter species the carapace is certainly not « parsemé de quelques pointes courbes », as it has a single spine on the carapace and actually is the least spinous of all *Pontophilus* species. Also the rostrum in Kemp's species is broadly truncated anteriorly, and rather large for a Crangonid rostrum, it certainly is not « un petit rostre arrondi ». The abdomen has a conspicuous dark brown band in the middle of its length (over the 4th abdominal somite), and one would hardly describe this colouration as « fascié à sa base de bleu noirâtre ». Finally the size given by Risso for this species (30 mm) is hardly ever if at all attained by what at present usually is called *Pontophilus fasciatus.* Pesta (1918: 151) says on this account of *Pontophilus fasciatus:* « Die Längenangabe ... « 30 *mm* » ist irrtümlich ! ». Risso's description actually would better fit *Pontophilus spinosus,* which does have the carapace

with many forwards curved spines, with a small anteriorly rounded rostrum (which, however, is flanked by two small teeth which Risso does not mention). As to the colour, Pesta described that as « Cephalothorax und Abdomen grosser Exemplare rotbraun gefleckt, oberseits mit einigen bläulichen Makeln (hinter dem Rostrum und auf den Abdominalsegmenten, Telson und Uropoden) ». As to the size, Pesta (1918: 149) mentioned an average size of 40 to 50 mm. Risso's (1816, pl. 3 fig. 5) does not help in solving the problem of the identity of *Crangon fasciatus*.

In view of the fact that the specific epithet *fasciatus* has practically consistently been used for the species which Kemp indicated as *Philocheras fasciatus* (Risso), and as it is impossible to definitely prove that Risso based his original description on a different species, we do best to continue to use the name in its current sense and to assume that the discrepancies in Risso's description are due to errors of observation or lapsus calami. It might be a good solution to select a neotype for Risso's species in such a way as to legalize current usage.

In Risso's manuscript notes there is a definition of the genus *Crangon* as follows: « Rostre très court aigu, lisse, première paire des pattes monodactyle, seconde paire mince, effilée, didactyle ». Immediately below this the heading « C. Fasciatus n. C. Fascié » is given but the space for the description of the species is left blank. Here too the characterization of the rostrum as « aigu » does not fit at all *P. fasciatus* sensu Kemp.

Mesapus fasciatus Rafinesque, which usually is considered a synonym of *Pontophilus fasciatus* (Risso), was treated by Risso in his manuscript as probably synonymous with *Ligur ensiferus* (see there, p. 51).

Pontocaris cataphractus (Olivi, 1792)

Egeon and *Cancer cataphractus*-Bosc, 1813 : 233.
Egeon Loricatus Risso, 1816 : 100.
Egeon loricatus-Risso 1827 : 58, pl. 1 fig. 3.
Egeon loricatus-Risso, 1844 : 94.
Egeon Cataphractus-Hope, 1851 : 16 (*E. carinatus* [err. pro *loricatus*] Risso, cited as synonym).
Egeon loricatus Risso, Ms., listed (b, d no. 6, e), generic diagnosis (b), figure (f).
Egeon Risso, Ms., listed (d no. 2).

Risso's description and his illustrations (both published and unpublished) readily identify the species; no subsequent author had ever any difficulty in identifying it. That *Egeon loricatus* Risso, 1816, is a junior synonym of *Cancer cataphractus* Olivi, 1792, has been shown already by authors like H. Milne Edwards (1837: 343), who used Olivi's name in preference to that of Risso. Risso himself in both descriptions referred directly to Olivi.

Hope used the name « *Egeon carinatus,* Risso » in the synonymy of *Egeon cataphractus*. The word *carinatus* evidently is an error for *loricatus*.

Macrura Reptantia

Palinuridae

Palinurus elephas (Fabricius, 1787)

Palinurus Vulgaris-Risso, 1816 : 64.
Palinurus vulgaris-Risso, 1827 : 45.
Palinurus Vulgaris-Hope, 1851 : 14.
Palinurus vulgaris Risso, Ms., description (d no. 6), generic diagnosis (d no. 6).

No problems exist about the identity of this species, the common Mediterranean spiny lobster.

Risso's manuscript diagnosis of the genus *Palinurus* is as follows:

« Antennes extérieures très longues, sétacés, herissés des piquants. Yeux saillans portés sur un support commun transversal. Tronc cylindrique ».

And the species description:

« P[alinurus]. vulgaris L[angouste]. Commune.

P[alinurus] spinis supraocularibus subtus dentatis, segmentis abdominis sulcis transversis medio interrupta.

Plin. 4-16-11-20 Lat. 1-48-1 Rond. Linn. 30.

Cette espèce, extrêmement abondante sur notre côte est d'un rouge de laque vif, varié de jaune. Le corselet épineux hérissé de poils courts & roides. Le front à huit épines, terminé de chaque côté par un long aiguillon. Les pinces sont courtes, renflés, épineuses vers le sommet. Les segmens de l'abdomen sillonés, munis sur leurs bords d'une pointe à deux dents. Les écailles natatoires larges, ciliées. La femelle retient les œufs jaune rougeâtres, qu'elle pond en avril & en aout, en moyen des larges feuilles ciliés avec lesquels elle est munie.

Long. 0600 larg. 0060. Séj. tous nos rochers. Ap. toute l'année ».

Panulirus regius De Brito Capello, 1864

Palinurus Fasciatus-Risso, 1816 : 65 (not *Palinurus fasciatus* Fabricius, 1798).
Palinurus Rissonii Desmarest, 1825 : 185.
Palinurus vulgaris var. I Risso, 1827 : 45.
Palinurus Rissonii-Hope, 1851 : 14.
Palinurus vulgaris var. *fasciata* Risso, Ms., description (d no. 6).

This species, the distribution of which is mainly West African (from Mauretania to Angola) has been reported several times from the Mediterranean (Marseilles, Darboux & Stephan, 1908; Salou, Tarragona, Spain, Gibert y Olivé, 1920) but evidently is quite rare there. The fact that nowadays specimens are captured in West African waters and shipped to the Mediterranean coast of Spain where they are kept in live storage tanks, makes the chances that the species will be found more often in the Mediterranean greater.

The first Mediterranean record of the species, definitely is that by Risso. His description of the green colour of the animal and of the abdomen which is « fascié de blanc » leave little doubt as to the identity of his material. Risso (1816) incorrectly identified the species with *Palinurus fasciatus* Fabricius, 1798 (= the Indo-West Pacific *Panulirus polyphagus* (Herbst, 1793)). Desmarest (1825: 185) was the first to consider Risso's species to be specifically distinct from the known species of spiny lobsters and proposed the name *Palinurus rissonii* for it. In Opinion 507 of the International Commission on Zoological Nomenclature (1958, Opin. Decl. Int. Comm. zool. Nomencl., 18 (10): 197-210) the specific epithet *rissonii* as published in the combination *Palinurus rissonii* was suppressed, so that now the valid name for the species is *Panulirus regius* de Brito Capello, 1864.

Risso, in his manuscript (d no. 6) gave the following diagnosis of the present species: « var. *Fasciata.* Ayant examiné une suite des langoustes, & ne pouvant attribuer qu'à l'influence des certaines localités quelques uns des caractères de la langouste fasciée des mers des Indes, je range ce Crustacé parmi les variétés les plus remarquable de notre mer ».

Scyllaridae

Scyllarides latus (Latreille, 1803)

Scyllarus Orientalis-Risso, 1816 : 60 (not *Scyllarus orientalis* Lund, 1793).
Scyllarus latus-Risso, 1827 : 42.
Scyllarus Latus-Hope, 1851 : 14.
Scyllarus Orientalis-Hope, 1851 : 14.
Scyllarus Latus Risso, Ms., description (d no. 6).

Risso (1816) at first identified the present species with *Scyllarus orientalis* Lund, 1793 (= the Indo-West Pacific *Thenus orientalis*) but in 1827 he corrected his identification.

The description in Risso's manuscript is identical with the one published by him in 1827.

Scyllarus arctus (Linnaeus, 1758)

Scyllarus Arctus-Risso, 1816 : 61.
Scyllarus Cicada Risso, 1816 : 61.
Scyllarus Cicada Var. A Risso, 1816 : 62.
Scyllarus arctus-Risso, 1827 : 43.
Scyllarus cicada-Risso, 1827 : 43.
Scyllarus cicada var. I Risso, 1827 : 43.
Chrysoma mediterranea Risso, 1827 : 88, pl. 3 fig. 9.
Chrysoma mediterranea-Risso, 1844 : 96.
Scyllarus Arctus-Hope, 1851 : 14.
Scyllarus Cicada-Hope, 1851 : 14.
Phyllosoma Mediterraneum-Hope, 1851 : 20.
Scyllarus Artus Risso, Ms., description (d no. 6), citation of the description by Petagna, 1792 (d no. 33).
Scyllarus Arctus var. *cicada* Risso, Ms., description (d no. 6).
Scyllarus Arctus var. *lutea* Risso, Ms., description (d no. 6).
Chrysoma mediterranea Risso, Ms., listed (d no. 6).

Under *Scyllarus arctus,* Risso (1816, 1827) gave a description which clearly shows that his material belonged to the species that at present is still indicated by that name. His manuscript description of *S. arctus* is practically identical with that published in 1827.

But Risso (1816, 1827) also described a new species, *Scyllarus cicada,* which in 1816 he defined as follows: « *S[cyllarus]. Testa laevi, rubra; antennis exterioribus quinquedentatis.* N. Rond., p. 393, c. VI ». Latreille (1819) and Desmarest (1825: 424) criticized Risso for erecting a new species for Rondelet's specimen, which, as shown by Rondelet's good figure and his description, is a typical *Scyllarus arctus,* even though Rondelet (1554: 546) described it as « Squilla haec tota rubet ». They also pointed to some inconsistencies in Risso's account: in the definition Risso indicated the body as smooth, while in the more extensive description he spoke of three rows of blunt points across the carapace. It seems likely that Risso based most of his description on Rondelet's account, but added some observations of his own, like the colour of the eggs, the presence of the eggs in the spring, the measurements, as well as observations of the occurrence of the species. Risso's 1827 description is practically identical to the one of 1816. In his manuscript he treated *S. cicada* as a variety of *S. arctus* and gave the following description: « var. *Cicada.* Cette Squille est toute rouge dit Rondelet, à ce caractère on peut ajouter que son corselet est plus lisse [que l'espèce de Rondelet ?] traversé par trois rangées de pointes obtuses, que son écaille natatoire intermédiaire est courte, et que sa femelle pond des œufs d'un rouge vif ». The sentence in brackets is difficult to decipher.

It is possible that Risso's specimens of *Scyllarus cicada* were juveniles (he indicated their length as half that of *S. arctus*) of *S. arctus* or *S. pygmaeus,* and that *S. cicada* is a composite species. In order to settle the question of the identity of Risso's species, I now select as the lectotype of *Scyllarus cicada* Risso, 1816, the specimen figured by Rondelet (1554: 546). In this way *S. cicada* Risso, 1816 becomes a subjective junior synonym of *Cancer arctus* Linnaeus, 1758, regardless of the identity of Risso's own material.

The variety of *S. cicada,* which Risso in 1816 named Var. A, and in 1827 Var. I, is indicated in his manuscript as Var. *lutea.* His manuscript description of this form is as follows: « Var. *Lutea.* Je place également comme variété un Scyllare à corps déprimé, pubescent, d'un beau jaune doré, à écailles natatoires jaunes, pour ne point encourir le blame des quelques naturalistes ».

This variety might be the « *Nisto asper* » stage of *Scyllarus arctus,* but this is impossible to prove. According to Risso it measures 3/8 of the size of the adult *S. arctus* specimen (46 mm), but is still too large compared with the measurement of 15 mm given by Bouvier (1922: 109) for that stage. As *Scyllarus arctus* is the most common of the two species of *Scyllarus* found in the Mediterranean, this variety is here synonymized with it.

Evidently several carcinologists did not agree with Risso as far as *S. cicada* and his variety were concerned, and he defended himself in 1827 in his « Remarques » on p. 44. The text in his manuscript is practically identical with that of the 1827 edition, the only important difference has been cited above.

The name *Scyllarus cicada* has been justly ignored by the majority of zoologists.

Under the name *Chrysoma mediterranea* Risso (1827) described and figured the *Phyllosoma* larva of the present species.

Nephropidae

Nephrops norvegicus (Linnaeus, 1758)

Nephrops norvegicus ?-Risso, 1827 : 56.
Nephrops norwegicus-Risso, 1844 : 94.
Nephrops Norvegicus-Hope, 1851 : 15.
Nephrops norvegicus-Monod 1931 : 123.
Nephrops norvegicus Risso, Ms., description (d no. 6), figure (f).

Risso's description sufficiently characterizes the present species. His manuscript description is almost identical with the one published in 1827. The manuscript figure is excellent. The species has hardly ever been indicated by an other name.

Homarus gammarus (Linnaeus, 1758)

Astacus Marinus-Risso, 1816 : 79.
Astacus marinus-Risso, 1827 : 55.
Astacus Marinus-Hope, 1851 : 15.
Homarus Vulgaris-Hope. 1851 : 15.
Astacus marinus Risso, Ms., description (d no. 6).

Another well known and well characterized species. Although it has been cited under several different names, there has never been any doubt as to its identity and status. Risso's manuscript description is practically the same as the one published in 1827.

Astacidae

Austropotamobius pallipes (Lereboullet, 1858)

Astacus Fluviatilis-Risso, 1816 : 80.
Astacus fluviatilis-Risso, 1827 : 55.

Astacus Fluviatilis-Hope, 1851 : 15.
Astacus Fluviatilis Risso, Ms., description (d no. 6).

Risso's manuscript description is practically identical with the one published by him in 1827, except for the indication « Rivière de l'Est » instead of « Rivière de la Taggia ». Taggia lies in Italy near the French border slightly east of San Remo. The only known crayfish of this area is *Austropotamobius pallipes*, the species *Astacus astacus* (L.) (= *Astacus fluviatilis* Fabr.) does not occur here.

Callianassidae

Callianassa tyrrhena (Petagna, 1792)

Alpheus Tyrhenus p.p Risso, 1816 : 94 (only references), not pl. 2 fig. 2.
Gebios Davianus Risso, 1822 : 243.
Gebios Davyanus-Risso, 1827 : 52.
Callianassa tyrrhena p.p. Risso, 1827 : 54 (references to Olivi, Petagna, and Otto only).
Gebios davianii-Risso, 1844 : 94.
Callianassa Laticauda-Hope, 1851 : 14.
Callianassa Candida-Hope, 1851 : 14.
Gebia Daviana-Hope, 1851 : 15.
Astacus tyrrhenus-Monod, 1931 : 123.
Astacus tyrrhenus Risso, Ms., citation of Petagna's, 1792, diagnosis (d no. 33), figure (f).
Gebios Davyanus Risso, Ms., description (d no. 6).

Risso's (1816) description of *Alpheus Tyrhenus* shows clearly that he had *Pontonia pinnophylax* before him. His references, however, to *Cancer candidus* Olivi (1792) and to « *Astacus Tyrenus* » Petagna (1792), show that he is mistaken in his synonymy. *Cancer candidus* and *Astacus tyrrhenus* both are based on a species of *Callianassa* which at present is currently named *C. tyrrhena* (Petagna), but which also has been indicated by authors with the names *C. laticauda* Otto and *C. stebbingi* Borradaile.

How confused Risso was, is clearly shown by that in 1822 he described a new species, *Gebios Davianus*, which, judging by the description, can hardly be anything but a *Callianassa*. Risso's description clearly indicates the first pereiopods as being the second, but otherwise it fits *Callianassa* quite well, also his remarks, that the species lives in burrows in the mud and is used as bait by fishermen, support this assumption.

In his manuscript (d no. 23) Risso listed references to Petagna's Crustacea, among which *Astacus tyrrhenus* of which he copied Petagna's diagnosis. There is also a figure of the present species with the indication « *Astacus tyrrhenus* », this figure proves to be a rough copy of the one published by Petagna (1792, pl. 5 fig. 3). Monod (1931: 123) referred to this figure.

Risso's manuscript description of *Gebios Davyanus* is practically identical with the description published in 1827. Interesting is the dedication of the specific epithet, which is struck out in the manuscript and is not published: Risso talks about the species « que je dédie au savant Sir Humphrey Davis à son passage à Nice en 1814 ». Sir Humphrey Davy (Penzance, Cornwall, 17 December 1778 - Geneva, Switzerland, 29 May 1829) was a famous English chemist. who also published on agriculture, fishery and many other subjects, and was the inventor of the Davy safety mining lamp. He made a tour of the European Continent in 1813-1815, and was one of the several foreign contacts that Risso had.

It impossible to make out which of the Mediterranean species of *Callianassa* was meant by Risso with *Gebios Davyanus*, but as *C. tyrrhena* (Petagna) is the commonest and best known, we do best to consider Risso's new name a synonym of that given by Petagna. The selection of a neotype is desirable here.

Upogebiidae

Upogebia pusilla (Petagna, 1792)

Thalassina Littoralis Risso, 1816 : 76, pl. 3 fig. 2.
Gebios littoralis-Risso, 1827 : 51.
Gebios litoralis-Risso, 1844 : 94.
Gebia Littoralis-Hope 1851 : 15.
Gebios litoralis Risso, Ms., description (d no. 6), generic diagnosis.
Astacus pusillus Risso, Ms., reference to Petagna, 1792 (d no. 33).

Risso's descriptions and figure of *Thalassina littoralis* and *Gebios littoralis* are quite straightforward and have always been correctly interpreted. The specific epithet *littoralis* Risso has long been used for the species until it was found that that of *pusilla* had priority.

Risso's manuscript description of *Gebios litoralis* is practically identical to his description published in 1827. Among his notes is also a reference (d no. 33) to Petagna's description of *Astacus pusillus* with a full transcript of that description.

The variety (Var. A in 1816; Var. I in 1827) described by Risso (1816: 77; 1827: 52) as being of a rather deep carmine red with a white abdomen, of which he found a single specimen washed ashore near Nice after a storm, may be just a specimen in which the colour had changed post mortem. It may also be that the specimen belongs to the next species. Too few data are provided to make a definite conclusion possible.

Axiidae

Axius stirhynchus Leach, 1815 (pl. 5 fig. a)

Calianassa bisulcata Risso, 1844 : 94 (nomen nudum).
Axius Stirhynchus-Hope, 1851 : 14.
Callianassa bisulcata Monod, 1931 : 119, 123, fig. 6E.
Callianassa Bisulcata Risso, Ms., figure (f).

Among the manuscript notes of Risso's there is a figure of the present species named *Callianassa bisulcata*. Nowhere else in the manuscripts the name is given, nor is any description provided, but Risso (1844) listed the name without description. Monod (1931, fig. 6E) reproduced Risso's figure and remarked about it: " ? *Axius styrhynchus* Leach 1815; s'il agit bien de l'*Axius* (déjà signalé comme méditerranéen : Th. Bell, British Stalk-eyed Crustacea, 1853, p. 230), le telson est très incorrect; mais la forme des pinces semble devoir exclure tout rapprochement avec *Calocaris macandreae* Bell, 1853". I fully agree with Dr. Monod, but believe the telson to be damaged, having the tip broken off, whereby the posterior margin has become irregularly broadly truncate instead of triangularly pointed. In most other respects the similarity to *Axius stirhynchus* is so great that the figure hardly can represent any other species.

One wonders if perhaps this is not the variety described by Risso under *Thalassina* (and *Gebios*) *littoralis*, but lack of data make it impossible to decide that question.

So far as is known to me the specific epithet *bisulcata* has only been listed in Risso's (1844) paper but no other authors, not even Hope, do mention it.

Anomura

Diogenidae

Diogenes pugilator (Roux, 1829)

Pagurus Diogenes-Risso, 1816 : 57 (not *Cancer diogenes* L., 1758).
Pagurus Diogenes-Risso, 1827 : 38.
Pagurus Diogenes-Hope, 1851 : 12 (*P. calidus* erroneously given as a synonym).
Pagurus Pugillator-Hope, 1851 : 13.
Pagurus pugilator-Monod, 1931 : 123.
Pagurus Diogenes Risso, Ms., 2 descriptions (c, d no. 6).
Pagurus pugilator Risso, Ms., 2 figures (♂ and ♀) (f).

Risso's (1816, 1827, and manuscript) descriptions of what he assigned to *Cancer diogenes* Linnaeus, 1758 (= *Petrochirus diogenes* (L.),) make it quite clear that this material belonged to *Diogenes pugilator* (Roux). His two manuscript descriptions are very similar to his published descriptions, the most important difference being that in both manuscript accounts *Nassa mutabilis* (L.) is given as the species of which the empty shells are inhabited by these hermit crabs. In the manuscript there are also two figures of the present species indicated as the male and female of "*Pagurus pugilator*".

Paguristes oculatus (Fabricius, 1775)

Pagurus Oculatus-Risso, 1816 : 56.
Pagurus maculatus Risso, 1827 : 39.
Pagurus maculatus-Risso, 1844 : 94.
Pagurus Oculatus-Hope, 1851 : 13.
Pagurus Maculatus-Hope, 1851 : 13.
Pagurus Eremita-Hope, 1851 : 13.
Pagurus sp. sans légende Monod, 1931 : 123.
Pagurus oculatus Risso, Ms., description (c), mention in letter to P. Roux (d no. 20), figure (without name) (f).
Pagurus Eremita Risso, Ms., 2 descriptions (c, d no. 6).

The 1816 description of *Pagurus oculatus* by Risso, is rather vague and probably somewhat inaccurate (e.g., stating that the two chelae are of equal size), but can hardly pertain to a species different from the present species. Risso's description of *Pagurus maculatus,* given in 1827, does not leave any doubt that the species is identical with *Pagurus oculatus* Fabr.

Manuscript (c) contains two descriptions, one is of "*Pagurus oculatus*", which is practically identical with Risso's description of that species published in 1816. The other, given on the same page of the manuscript, runs as follows :

« P[agure]. Hermite, P[aguro]. Hermita, P[agurus]. Eremita. P[agurus]. chelis triangularibus, inaequalibus, muricatis, interne macula purpurea, coeruleo cincta ornatis. Deux belles tâches pourpres entourées d'un cercle d'azure changeant sont empreintes sur la partie interne des pinces de ce pagure. Son corselet uni, luisant est parsemé des petits points enfoncés. Les yeux sont bleuâtres portés sur des longs pédicules grêles. Les antennes extérieures sont longues, coudées, placées au dessous d'un petit prolongement épineux. Les antennes intérieures surpassent à peine la longueur des yeux. Les pinces sont subtriangulaires, granuleuses, un peu inégales. Les six pattes du devant sont lisérées de poils courts; les deux dernières sont courtes. L'abdomen est mince, d'un rouge jaunâtre, terminé par des crochets inégaux. Diment. Long. 0060 Larg. 0010. Séjour dans l'alcyon domoncule ».

This description is so close to the one published by Risso in 1827 under the name *Pagurus maculatus,* that the latter must have been based on the former. The description in manuscript d of *P. Eremita* is verbally the same as the one published in 1827. It is possible that Risso realized that his *Pagurus oculatus* and *P. Eremita* were identical and that therefore in the 1827 edition he only treated a single species, which he named *P. maculatus* nov. It is interesting, however, that in his 1827 description of *P. maculatus* he did not refer to his 1816 *P. oculatus.* Of some importance in this connection is the following remark made by Risso in a concept of a letter to Polydore Roux (Manuscript d no. 20) : "j'ai fait mention du tubularis et de l'oculatus dans mon premier ouvrage sur les Crustacés et oublié au second dans le dernier" (the last 7 words, however, are struck out). This would point to the possibility that in 1827 Risso simply forgot to include *Pagurus oculatus* in his book.

The figure of *Paguristes oculatus* among the manuscript notes (Ms. f) clearly shows the present species. The figure has no legend.

The name *Pagurus* (or *Paguristes*) *maculatus* for the present species has been used by many subsequent authors, *Paguristes maculatus* (Risso) can be found in many older and even more recent works. The name *Pagurus oculatus* Fabricius, 1775, has priority, however. But Fabricius' name is not the oldest for the species : the first available name given to the species is *Cancer Eremita* Linnaeus (1767 : 1049). Linnaeus' description is rather short :

« C[ancer]. macrourus parasiticus, chelis scabris subaequalibus : anterioribus sex-pollicatis.

Habitat in M. Italico intra tophum suberosum, subrotundum apertura transversa ovali, in cujus centro cochlea latitat. D. Vandelli.

Similis Bernhardo s. Diogeni, sed minor. Chelae aequales scabrae & praeterea Pedes utrinque 2 alii, porrecti extra tophum ».

The fact that the chelipeds are "subaequalis" makes the identity of the species with *Paguristes oculatus* quite likely, and Linnaeus's remark that the species lives "intra tophum suberosum", i.e. inside the sponge *Suberites domuncula* (Olivi) takes away the last doubt. *Paguristes,* namely, is very often found in *Suberites,* and certainly is the only pagurid with subequal chelae found there (also *Dardanus arrosor* has been found in *Suberites*). As Linnaeus pointed out already, the original shell inhabited by Paguristes is found deep inside the sponge. Risso (1827 : 40) also made mention of the relation between *Paguristes oculatus* and *Suberites*; he described the habitat as "Dans l'*alcyon domoncale*". So actually the species should be known as *Paguristes eremita* (Linnaeus, 1767).

Clibanarius erythropus (Latreille, 1818)

Pagurus Tubularis-Risso, 1816 : 56 (not *Cancer tubularis* L., 1758).
Pagurus misanthropus Risso, 1827 : 40.
Pagurus misanthropus-Risso, 1844 : 94.
Pagurus Tuberculatis-Hope, 1851 : 13 (*P. misanthropus* cited as a synonym).
Pagurus tubularis Risso, Ms., mention in letter to P. Roux (d no. 20).
Pagurus Misantropus Risso, Ms., description (d no. 6).

The name *Clibanarius misanthropus* (Risso) has been used for a very long time by most carcinologists for this species. Recently Forest (1958 : 97) showed that the specific epithet *erythropus* Latreille, 1818, has priority. Although under *Pagurus misanthropus* Risso (1827 : 40, 41) did not refer to his (1816 : 56, 57) *Pagurus*

Tubularis, a comparison of the two descriptions clearly shows that they are based on the same material. In a concept of a letter of Risso to Roux, found among his manuscript notes (Ms. d no. 20), Risso says on this account: "Mais ayant observé avec Leach le dit tubularis, nous recconames que l'espèce que j'avois ainsi nommée de notre Méditerranée n'étoit pas le tubularis de Fabricius au quel il ressemble par plusieurs caractères et que je nommais pour cela misanthropus pour ne pas les confondre".

The manuscript description (in Ms. d no. 6) is very similar to the one published in 1827.

The identity of the true *Cancer tubularis* Linnaeus, 1767, has not yet been solved. Linnaeus's description can fit practically any hermit crab: "Magnitudo & facies Scolopendrae forficatae. Testa brevis subovata, punctis excavatis, antice utrinque retusa. Pedes 4 utrinque primi chelati; par 5tum muticum, reliqua tantum rudimenta. Cauda longa mollis". The only indication given by Linnaeus that might be of great value to identify the species is "Habitat intra Serpulae glomeratae testam maris Mediterranei". The only Mediterranean species that I know, that regularly inhabits worm tubes, is *Calcinus ornatus* (Roux, 1830), so that the name *Calcinus tubularis* (L., 1767) should be used for that species.

Dardanus arrosor (Herbst, 1796)

Pagurus Striatus-Risso, 1816 : 54.
Pagurus striatus-Risso, 1827 : 38.
Pagurus Strigosus-Hope, 1851 : 12 (*P. striatus* cited as a synonym).
Pagurus striatus Risso, Ms., 2 descriptions (c, d no. 6).

Pagurus striatus Latreille, 1803, of which, as Hope (1851) pointed out correctly, *Pagurus strigosus* Bosc, 1802, is an older synonym, has been used by many authors for the present species, especially in the 19th century. The species belongs, however, in the genus *Dardanus* and the oldest available specific epithet is *arrosor* Herbst, 1796. The name *Dardanus arrosor* is now generally adopted for it. Risso's descriptions of his material leave not the least doubt as to their identity. The manuscript description (c) is not essentially different from the one published in 1816, while the description in Ms. d is closer to the one published in 1827.

Dardanus calidus (Risso, 1827)

Pagurus calidus Risso, 1827 : 39.
Pagurus calidus-Risso, 1844 : 94.
Pagurus calidus Hope, 1851 : 12 (erroneously placed in the synonymy of *P. Diogenes*).
Pagurus calidus Risso, Ms., description (d no. 6).

There has never been any doubt as to the identity of *Pagurus calidus* Risso, even if the description is not too clear. This is mainly due to the fact that P. Roux (1829, pl. 15), who was in close contact with Risso, published a magnificent coloured figure of the species, which showed all important details.

The only difference of opinion is about the spelling of the specific epithet *calidus*. As Risso (and also Roux) has used this spelling consistently, and also employed it in his manuscript (except in one place where *callidus* has been written and struck out), there seems no good reason to change this spelling. The word "calidus" means warm, while "callidus" means sly. Risso in giving the French equivalent of *Pagurus calidus* as "P[agure] rusé" (= the sly Pagurus), evidently made an error in the latinization of the word sly by writing it with one instead of with 2 l's. According to Article 32a (ii) of the International Code of Zoological Nomenclature a name is not to be emended if its orthography is due to an improper transliteration or improper latinization. Therefore "*calidus*" should not be changed to "*callidus*".

The manuscript description is practically identical with the one published by Risso in 1827.

Paguridae

Pagurus cuanensis Bell, 1846

Pagurus Bernardus-Risso, 1816 : 55 (not *Cancer bernhardus* L., 1758).
Pagurus Bernardus-Risso, 1827 : 37.
Pagurus Bernardus-Hope, 1851 : 12.
Pagurus Bernardus Risso, Ms., descriptions (c, d no. 6), reference to Petagna (d no. 33).

Risso's identification of his material with *Pagurus bernhardus* (L., 1758) is certainly incorrect as that species is not found in the Nice area (probably it does not occur in the Mediterranean at all). The Mediterranean species that is mostly confused with *P. berhardus* is *P. prideaux* Leach, but Risso's specimens cannot belong to Leach's species, judging by his descriptions. The fact that he described the right cheliped as being the larger, while it furthermore is spined and hairy, and has the hand subcordate, with broad fingers, makes the identity of Risso's material with *Pagurus cuanensis* practically certain. He furthermore described the eyes as "bleuâtres", while Zariquiey Alvarez (1968 : 247) indicated the cornea as "azul verdoso".

The two manuscript descriptions are very similar to the ones published in 1816 and 1827. Risso in his manuscript (d no. 33) gave a list of the Crustacea mentioned by Petagna, among which *Pagurus Bernardus* of Petagna, and in one of his manuscript descriptions Risso referred to pl. 5 fig. 2 of Petagna's. Petagna's plate indeed shows *Pagurus cuanensis.* The other authors referred to by Risso, either in his published or unpublished descriptions of *Pagurus bernhardus,* deal with other species.

Pagurus alatus Fabricius, 1775

Pagurus Angulatus Risso, 1816 : 58, pl. 1 fig. 8.
Pagurus angulatus-Risso, 1827 : 39.
Pagurus Angulatus-Hope, 1851 : 12.
Pagurus angulatus-Monod, 1931 : 123.
Pagurus Angulatus Risso, Ms., description (c, d no 6), figure (f).

Risso's descriptions are very straightforward and his 1816 illustration confirms the identity of the species. The name *Pagurus* (or *Eupagurus*) *angulatus* has often been used for the species. Later it was replaced by *Pagurus excavatus* (Herbst, 1791) until in 1955 Forest (1955 : 110) showed that *Pagurus alatus* Fabricius, 1775, is the correct name for the species.

The manuscript descriptions by Risso are very similar to the one published in 1827. His unpublished figure is excellent.

Pagurus anachoretus Risso, 1827

Pagurus anachoretus Risso, 1827 : 41.
Pagurus anachoretus-Risso, 1844 : 94.
Pagurus Anachoretus-Hope, 1851 : 13.
Pagurus anachoretus Risso, Ms., descriptions (d no. 6).

Pagurus anachoretus is a well know species, and during the last 100 years Risso's name has been used

for it by most authors. Risso's description is not very clear, but could quite well fit the present species. The actual identity of the species was first definitely established by Heller (1863 : 169) who wrote : "Im zoologischen Museum in Wien befinden sich mehrere von Roux eingesendete und determinirte Exemplare von Pagurus anachoretus, durch deren Untersuchung ich die Ueberzeugung gewann, dass diese Art mit dem P. annulicornis (Costa), und P. rubrovittatus (Lucas) vollkommen identisch sei". As Polydore Roux and Risso had close contact about carcinological matters and exchanged material, Roux' identification of Risso's species can be quite well trusted.

Risso's manuscript descriptions are practically identical to the one published in 1827; he only stated in the first "les pinces sont rudes, tuberculées". In the second the word "tuberculées" is crossed out, and in the published description it is altogether omitted. Risso probably realized that the adjective used in the first manuscript was incorrect.

It is interesting to see from the manuscript that Risso first intented to name the species *P. callidus* and later changed the epithet to *anachoretus*.

Pagurus prideaux Leach, 1815

Pagurus solitarius Risso, 1827 : 40.
Pagurus solitarius-Risso, 1844 : 94.
Pagurus Solitarius-Hope, 1851 : 12 (*P. Prideauxii* given as a synonym).
? *Pagurus Crenatus*-Hope, 1851 : 13.
Pagurus solitarius Monod, 1931 : 123.
Pagurus Solitarius Risso, Ms., description (d no. 6) remark in letter to Roux (d no. 20), figure (f).
Pagurus Erinaceus Risso, Ms., remark in letter to Roux (d no. 20).

Risso's description is rather vague, and his species might not have been recognized had not Roux (1830 : pl. 36), provided a good description and excellent illustration of it. Roux correctly suspected that this species is the same as the one described by Leach (1815, pl. 26 figs. 5, 6) as *Pagurus prideaux*. Leach's name, being by far the older, should be used, and has been accepted by all modern authors. However, usually the specific epithet is spelled *prideauxi,* but in the original description Leach consistently spelled the name *Pagurus prideaux,* and under the present International Code of Zoological Nomenclature this spelling must be retained. The 1961 edition of the Code required (Art. 31) that "a species-group name, if a noun formed from a modern personal name, must end in -i if the personal name is that of a man", and under that Rule the name *Pagurus prideaux* had to be automatically corrected to *Pagurus prideauxi*. But the XVIth International Congress of Zoology held in 1963 deleted this rule and replaced it by a Recommendation in which the word "must" of the above sentence is replaced by "should usually". The epithet *prideaux* therefore may not be changed to *prideauxi,* as in the original description the former spelling is consistently used and clearly not the result of an unintentional error. Furthermore Leach preferred to give the species that he dedicated to Mr. C. Prideaux either the epithet *Prideaux* or *Prideauxiana,* but not *prideauxi* or *prideauxii* (e.g. *Modiola prideaux* Leach, 1815; *Pagurus prideaux* Leach, 1816; *Hippolyte prideauxiana* Leach, 1817; *Ortygia prideauxiana* Leach, 1827; *Scalaria prideauxiana* Leach, 1847; *Sphaeroma prideauxianum* Leach, 1818; the only exception is *Venus prideauxii* Leach, 1847, a nomen nudum published by J.E. Gray long after Leach's death.

Risso's manuscript description of *Pagurus solitarius* is very similar to the printed one. His manuscript figure clearly shows the present species, but is quite inferior to Roux's magnificent illustration. That Roux at one time intended to describe a *Pagurus,* possibly this species, as new and wanted to give it the name *Pagurus erinaceus* becomes clear from the following fragment from a letter written by Risso to Roux and found among the Risso manuscripts (Ms. d no. 20) : "aussitot que j'aurois reçu votre *Pagurus erinaceus* je vous dirois si c'est celui que j'ai appellé *solitarius.* Je n'ai jamais rencontré de *pridhauxianus* oú bien je n'y ai pas fait attention m'étant borné aux espèces les plus caractérisées". This again shows the close cooperation between Risso and Roux. It is possible that "*Pagurus Crenatus*", Risso" cited by Hope (1851 : 13) is an erroneous spelling of *Pagurus erinaceus.* A *P. crenatus* is unknown to me, and neither has, to my knowledge, the name *P. erinaceus* been published.

Catapaguroides timidus (Roux, 1830)

Pagurus Timidus-Hope, 1851 : 13.
Pagurus timidus Risso, Ms., listed (d no. 9).

Among the papers of Risso's manuscript collection is one entitled (Ms. d no. 9) "Crustacés pour Mr. Risso", which according to a handwritten note attached to it by Dr. Monod, is in the handwriting of Polydore Roux. It is interesting to know that Risso did receive material of this species from Roux; it even may have been type material.

Galatheidae

Galathea strigosa (Linnaeus, 1767)

Galathea Strigosa-Risso, 1816 : 71.
Calypso Periculosa Risso, 1816 : 74, pl. 3 fig. 1.
Janira Risso, 1816 : 175.
Galathea strigosa-Risso, 1827 : 47.
Janira periculosa-Risso, 1827 : 48.
Galathea Strigosa-Hope, 1851 : 13.
Galathea strigosa Risso, Ms., description (d no. 6).
Calypso periculosa Risso, Ms., generic and specific diagnosis and remarks (d no. 15).

Risso used the name *Galathea strigosa* in the correct sense, and this is a straightforward case. The manuscript description is almost exactly the same as the one published in 1827.

Quite complicated is the problem concerning *Calypso periculosa* which shows Risso at his worst. Risso (1816) under that name gave the description of a new genus and species, and a figure, at the same time providing much information on the habitat, and also on the odour, and supposed poisonous qualities. Risso's illustration is clearly copied from Rondelet's (1555 : 211) woodcut of "*Astacus parvus*", which is a rather crude figure of *Galathea strigosa.* Desmarest (1825 : 191-194) devoted a very long footnote to discuss both Rondelet's and Risso's accounts. He came to the conclusion that Rondelet's species was either *Galathea strigosa* (L.) or *G. squamifera* Leach. He cited Risso's description in full and in italics marked the sections that agreed with *Galathea;* he wondered whether Risso had seen actual specimens and concluded : "1° que le genre *Calypso* est un genre factice; 2° que l'*Astacus parvus marinus* de Rondelet, sur lequel il est établi, n'est autre qu'une galathée, soit la *spinigera* [= *G. strigosa*], soit la *squamifera,* qui habitent nos côtes". Risso (1827 : 49), who still accepted the validity of the genus and species,

which he then named *Janira periculosa,* defended himself rather weakly and passed the burden of providing the proof on to Leach: "Cette espèce, dont je n'ai vu qu'un échantillon dégradé dans la collection de M. le comte Audiberti, et quelques débris à demi consommés dans l'estomac d'un poisson pélagien, puissamment aidé par la description et la figure qu'en donne Rondelet, m'ont suffi dans le temps pour établir ce genre, qui diffère des galatées, avec lesquelles on voudrait le confondre. Mon ami Leach en ayant trouvé une nouvelle espèce, il pourra mieux que moi en fixer les caractères précis, et trancher toutes les difficultés qui se sont élevées sur l'existence de ce crustacé". Among Risso's manuscript notes (d no. 15) is a definition of *Calypso,* which is virtually the same as that given in 1827 for *Janira.* The diagnosis of the species *Calypso periculosa* as given in the manuscript is very short: "C[alypso] testa rubra, violascente coeruleo variegata". After that follows immediately the passage cited above from the 1827 work, slight differences (e.g., instead of "qu'un échantillon dégradé" it says "que des débords fort dégradés"; the words "d'un poisson pélagien, puissamment aidé par la description et la figure qu'en donne Rondelet" are absent), while at the end of the sentence Risso added in his manuscript: "d'ailleurs Rondelet n'étant pas un de ces naturalistes à façonner un animal qui n'existe pas d'une manière précise". The entire description is written in a very irregular manner with many deletions and changes, and especially the last sentence is difficult to decipher. It seems as if Risso was quite upset by the criticism on his work.

Galathea squamifera Leach, 1814

Galathea Glabra Risso, 1816 : 72.
Galathea glabra-Risso, 1827 : 47.
Galathea glabra-Risso, 1844 : 95.
Galathea Squamifera-Hope, 1851 : 13.
Galathea Glabra-Hope, 1851 : 13.
Galathea Glabra Risso, Ms., description (d no. 6).

Risso's *Galathea glabra* has been recognized by contemparaneous authors (Desmarest, 1825 : 190) as a synonym of *Galathea squamifera* Leach, and has been treated so since (e.g., by Heller, 1862 : 190), even though *G. squamifera* does not have the carapace smooth but ridged like other *Galathea*'s species.

Risso's manuscript description is practically identical with his 1827 published account.

Galathea antiqua Risso, 1816

Galathea Antiqua Risso, 1816 : 73.
Galathea antiqua-Risso, 1827 : 48.
Galathea Antiqua Risso, Ms., description (d no. 31).

The manuscript description resembles most the one published by Risso in 1816, but differs in some respects: "Ce Crustacé que j'ai trouvé dans des excavations faites dans le faubourg de Nice a le test un peu bombé, garni en dessus de neuf lignes transversales qui forment autant de segmens. La couleur est d'un jaune ochracé, nulle vestige de pattes si ce n'est la place de leur situation qui se fait remarquer sur l'individu que je possède. Son abdomen est un peu renflé. Cette espèce fossile n'existe plus vivant quoiqu'on le trouve à très peu de distance des bords actuels de la Méditerranée ». Risso had first used the name *Galathea antidiluviana,* but crossed that out and replaced the name by *G. antiqua.*

The species has been neglected by subsequent authors. Desmarest (1825 : 189) mentioned it briefly, but most others seem to have ignored it. Balss (1913 : 155, 156) in his list of the known fossil Galatheidae did not include Risso's species. Glaessner (1929 : 172) simply listed the species.

It is probable that without re-examination of Risso's type specimen, or of topotypic material the identity of *Galathea antiqua* will remain an enigma.

Munida rugosa (Fabricius, 1775)

Galathea Rugosa-Risso, 1816 : 70.
Galathea rugosa-Risso, 1827 : 46.
Numida Bamfia-Hope, 1851 : 14 (*N. rugosa* cited as a synonym).
Galathea rugosa Risso, Ms., description (d no. 6).

Risso used the correct epithet for the present species. The manuscript description is practically identical with the one published in 1827.

Porcellanidae

Porcellana platycheles (Pennant, 1777)

Porcellana Platycheles-Risso, 1816 : 67.
Porcellana platycheles-Risso, 1827 : 50.
Porcellana Platycheles-Hope, 1851 : 12.
Porcellana platycheles Risso, Ms., description (d no. 6).

Risso's manuscript description is the same as the one that he published in 1827, only the length is given as 0010 instead of 0016. The description is clear and there is no doubt that Risso correctly applied the name that he used.

Pisidia bluteli (Risso, 1816)

Porcellana Bluteli Risso, 1816 : 67, pl. 1 fig. 7.
Porcellana Bluteli-Risso, 1827 : 50.
Porcellana blutelli-Risso, 1844 : 94.
Pisidia Blutelii-Hope, 1851 : 12.
Porcellana Blutteli Risso, Ms., description (d no. 6).

Most authors identified *Porcellana bluteli* Risso with *Pisidia longicornis* (L.), until Zariquiey Alvarez (1952 : 132) showed that Risso's species is distinct. Risso's manuscript description is practically identical with his 1827 published one.

Pisidia longimana (Risso, 1816)

Porcellana Longimana Risso, 1816 : 68.
Porcellana longimana-Risso, 1827 : 50.
Porcellana longimana-Risso, 1844 : 94.
Porcellana Longimana-Hope, 1851 : 12.
Porcellana longimana Risso, Ms., description (d no. 6).

Like *Porcellana bluteli,* the present species has been synonymized with *Pisidia longicornis* by most authors. Holthuis (1961 : 40) showed that this species of Risso's is distinct from *P. longicornis* and *P. bluteli.* Here too the manuscript description is practically identical with that published in 1827.

Albuneidae

Albunea carabus (Linnaeus, 1758)

Hippa Caerulea Risso, 1816 : 50.
Hippa caerulea-Risso, 1827 : 36.
Hippa coerulea-Risso, 1844 : 94.
Hippa Coerulea-Hope, 1851 : 12.
Hippa coerulea Risso, Ms., descriptions (c, d no. 6).

The description in Ms. c agrees well with that published in 1816, only as "Séjour" is given "dans les

interstices du Spondyle Gaederope" instead of "dans les interstices des huîtres". The manuscript description in Ms. d agrees better with the 1827 version. Also the "Remarques" added by Risso to the 1827 description are found in the manuscript, but after the first words "Cette hippe"... the manuscript continues "qui pourroit bien être le Cancer Carabus de Linné ce que je ne puis assurer, ni contester faute de caractères suffisants, sans m'exposer d'être contredit par quelques entomologistes", which is struck out and replaced by "ne vit point...".

Risso's description is incomplete and has several aspects which do not agree with the present species. So he placed it in the first section of the Paguriens, which he characterized as "Mains adactyles" (the section containing the hermit crabs is headed "II Mains didactyles"). *Albunea,* however, does, have the first legs chelate. Also Risso's description of the habitat of the species among bivalves, does not hold for *Albunea,* which lives burrowed in the sand. The morphological description and the colour, however, fit rather well for *Albunea carabus,* and therefore it seems best to synonymize Risso's species with the former, the more so as, so far as I can see, no other species would fit Risso's description better.

Brachyura

Dromiidae

Dromia personata (Linnaeus, 1758)

Dromia Rhumphii-Risso, 1816 : 16 (not *Dromia rumphii* Fabricius, 1798).
Dromia Aegagropila-Risso, 1816 : 17 (not *Cancer aegagropila* Fabricius, 1793).
Dromia Rhumphii-Risso, 1827 : 32.
Dromia Rumphii-Hope, 1851 : 11.
Dromia Aegagropila-Hope, 1851 : 11.
Dromia Rhumphii Risso, Ms., 2 descriptions (c, d no. 6).
Dromia Aegacrophila Risso, Ms., description (c).
Pagurus caput mortuum Risso, Ms., citation of description by Petagna, 1792 (d no. 33).

At present only a single species of *Dromia,* viz. *D. personata* (L.), is known from the Mediterranean. Both the forms indicated by Risso (1816) as *Dromia Rhumphii* and *D. aegagropila* belong to this one species; in 1827 Risso did not mention the second species anymore.

One of the descriptions in the Risso manuscript (d no. 6) resembles the one published in 1827 very much, the other (Ms c) is somewhat different :

« un mélange de petits points rouges, blancs et obscurs sur un fond brunâtre, couvert de poils d'un fauve ferrugineux forment la teinte générale de ce Crustacé. Son tet est [bombé,] marqué par differents enfoncements, les bords lateraux sont garnis de cinq ou six proéminences [maigres et] aigues [de chaque coté]. Le front a trois pointes obtuses, celle du milieu petite, située en dessous. Les yeux d'un noir rougeâtre, placés sur de pédicules gris. Antennes extérieures sétiformes, le premier article renflé, les intérieures petites, coudées. [Palpes épais, ciliés. Mâchoires.] L'abdomen sillonné. Les pinces grosses, égales, troisième articulation tridentée, la cinquième ornée de longs poils soyeux internes, terminant par des dents crochues couleur de rose. Les pattes sont sub-triangulaires, [les antérieures armées d'un crochet pointu d'un noir luisant. Les deux postérieures courtes terminées par deux ongles crochues chacune.] La femelle est teintée d'un roux oxide de fer, les pinces sont courtes, dépourvues de poils, l'abdomen est recouvert d'une large pièce bombée ovale oblongue à six segmens, garnie de plusieurs rangs d'appendices aplatis, ciliés avec les quels elle enveloppe les œufs d'un rouge carmin qu'elle dépose en juillet sous les rochers.

Diment. Long. 0055-0070. Larg. 0065-0075. Sejour...».

The bracketed sections were crossed out in the manuscript.

It is interesting to note that Risso here in the heading originally had three names : first the French (D[romie] de Rhumphius), than the Italian (D[romia] di Rhumphio) and finally the latin name (D[romia] Rhumphii fabr.). This also occurs in other parts of the manuscript, but in the printed version the Italian names are omitted.

Risso's manuscript description of *Dromia aegagropila* is practically the same as the one that he published in 1816. Only in the manuscript he added after the description : "Malgré mes recherches, je n'ai pu me procurer aucune individu de cette espèce". Evidently the account of count Audiberti, on which Risso based his assumption that the species occurred in Villefranche harbor, is made after juvenile specimens of *Dromia personata.* It is clear that Risso doubted the correctness of the *D. aegagropila* record, as in the manuscript the entire text dealing with this species is crossed out, while the species did not appear in his 1827 publication.

The name *Dromia rumphii* Fabricius, 1798, was a substitute name for, and thus is an objective synonym of, *Cancer dormia* Linnaeus, 1758. Likewise, *Cancer aegagropila* Fabricius, 1793, was a substitute name for, and thus is an objective synonym of *Cancer caputmortuum* Linnaeus, 1767. These two species, which at present are known as *Dromidiopsis dormia* (L.) and *Dromidiopsis caputmortuum* (L.), both are confined to the Indo-West Pacific area and do not occur in the Mediterranean.

Homolidae

Paromola cuvieri (Risso, 1816) (pl. 5 fig. c)

Doripe à trois pointes Bosc, 1813 : 234.
Dorippe Cuvieri Risso, 1816 : 35.
Homola Cuvieri-Risso, 1827 : 34.
Homola cuvierii-Risso, 1844 : 94.
Homola Cuvierii-Hope, 1851 : 11.
Dorippe triaculeatus Monod, 1931 : 133 (nomen nudum).
Figure de Brachyoure sans légende Monod, 1931 : 123.
Dorippe Triaculeatus Risso, Ms., description (h).
Dorippe Cuvieri Risso, Ms., description (c), figure (f).
Le homole Cuvier Risso, Ms., mention in letter to Roux (d no. 20).
Homola Cuvieri Risso, Ms., description (d no. 6)

The epithet *cuvieri* has practically always been used for this conspicuous and characteristic species.

The manuscript descriptions are practically identical with the published ones. In manuscript c the description of *Dorippe Cuvieri* is preceded by the following line: « Il est singulier que ce Crustacé aussi remarquable par ses fortes dimensions & par la délicatesse de sa chair ait échappé jusqu'à ce jour à la recherche des auteurs qui se sont occupé de l'histoire de ces animaux ». Furthermore the habitat is given here as « dans les abymes pelagiques ». Risso's unpublished figure of the species is excellent; it bears no legend, but is provided with a slip in the handwriting of Dr. Monod, giving the name.

In a letter to Polydore Roux found among the manuscript notes (d no. 20), Risso gave the following information about this species:

« Le homole Cuvier est le plus gros Décapode de nos rivages puisqu'il en a qui pèsent plus de deux kilogrammes, sa chair est tendre, on en prend en toute saison pourvu qu'on

jette les hameçons dans les grand profondeurs ou ils font leur [demeure habituelle] résidence ordinaire. Je vous engage à donner toutes les dimentions de ce singulier animal, ou bien, si vous voulez m'en charger le procurer... »

Risso originally had the intention to name this species *Dorippe triaculeatus,* and under that name it figures in manuscript h « Premier mémoire zoologique sur différentes espèces d'êtres organisés observés dans les environs de Nice », dated 1811. This manuscript description runs as follows:

« Dorippe à trois pointes n. Dorippe Triaculeatus n.

Ce Dorippe a le têt rélévé, subquadrangulaire, avec plusieurs enfoncements, couvert des pointes coniques, dont celles des côtés sont les plus élevées : les bords latéraux antérieures sont ornés d'une bosse avec une longue pointe au milieu. Le front est terminé par trois longs aiguillons droits, qui forment une espèce de triangle. La partie inférieure du têt est échancrée. Les yeux sont gros, situés sur des pédicules minces arrondis, poileux, l'iris émaillé, la prunelle d'un rouge noirâtre. Les antennes extérieures sont articulées, placées au milieu de deux pointes aigues, le premier article subtriangulaire est tridenté d'un côté, unidenté de l'autre et lisse en dessus; le second est moins épais, plus long, et poileux, le troisième est court, sert de support aux longs filaments rougeâtres, qui les terminent. Les antennes intérieures sont triarticulées, situées sur deux prolongements renflés, épineux et poileux, lesquels sont séparés par trois protubérances dentées en crête. Les palpes extérieures sont très longs, subtriangulaires, garnis de deux rangs d'épines, hérissées des poils rudes. Les intérieures sont en forme de cueilleron ciliée. L'abdomen est épineux, couvert d'une pièce bombée à cinq divisions, la dernière, petite, termine en pointe. Elle est garnie à sa base de deux long appendices. Les pinces ont cinq décimètres de longueur chacune. Elles sont rondes, épaisses, hérissées d'épines, parsemées de faisceaux de poils. Le troisième article est très long, le cinquième d'un rouge obscur un peu renflé à sa pointe, à laquelle adhérent deux longues dents noires, pustulées, couvertes des poils. Les pattes ont cinq articles de quatre décimètres de longueur, les trois premiers sont arrondis et garnis d'épines de chaque côté. Les autres aplatis, couvert d'épines sur un seul côté, lisses au milieu et terminés par des crochets noirs & poileux. Les deux pattes postérieures sont rondes très courtes, attachées au dos, avec les deux derniers articles très petits. La couleur de ce Crustacé est un rouge incarnat léger, qui passe au jaune ochracé, il habite les rochers de nos mers de 1 200 mètres de profondeur, et parvient à 160 millimètres de longueur sur 140 de largeur. La femelle est un peu plus grosse et fraye dans le mois d'août ».

This description leaves not the least doubt as to the identity of « *Dorippe triaculeatus* » with *Paromola cuvieri.* The name *Dorippe triaculeatus* has only once been used in print, viz., by Monod (1931: 133) when he referred to the above manuscript description. The vernacular name was used by Bosc (1813: 234), who when reviewing Risso's manuscript « Essai historique sur les crustacés de la mer de Nice », remarked: « Le Doripe à trois pointes est l'espèce la plus grande, et celle qui vit dans les eaux les plus profondes ».

(*Maia dumerili* Risso, 1816)

Maïa Dumerili Risso, 1816 : 43.
Pisa Dumerili-Risso, 1827 : 23.
Pisa dumerilii-Risso, 1844 : 94.
Pisa Dumerilii-Hope, 1851 : 8.
Maia Dumerili Risso, Ms., description (c).
Pisa Dumeril Risso, Ms., mention and generic diagnosis (d no. 21).

Maja dumerili Risso, 1816, forms one of the so far unsolved problems among Risso's Crustacea. Desmarest (1825: 422) cited the description of the species, without any comment. H. Milne Edwards (1834: 309, 310) commented: « Quant à la Pise de Duméril, elle n'est pas décrite avec [p. 310:] assez de détail pour que nous puissions avoir à son égard une opinion arrêtée ». Most subsequent authors ignored the species, although Carus (1885: 507) made a suggestion as to its probable identity by stating under *Maja squinado:* « An *Pisa Dumerilii* Risso (*Maja Dumerilii* Risso antea) huc pertinet ? ».

The manuscript description is practically the same as the one published in 1816. Only the last sentence of the descriptive part is as follows: « Cette espèce se distingue de la *Maia squinado* par ses pinces couvertes des pointes (longues herissées d'aiguillons) & ses pattes postérieures pectinées, par son corps plus longue et moins large ». It is possible that the words given above in brackets are meant as a replacement for the three words preceding them but this is not clear from the text.

The great size of the specimen (cl. 160 mm, cb. 120 mm), makes that among the Mediterranean spider crabs it can only be compared with *Maja squinado,* while of the other crabs only *Paromola cuvieri* and *Cancer paguras* reach this length. And actually, the description of the carapace fits *Maja squinado* very well, as it has the carapace almost heart-shaped, swollen, covered with small spines, ending anteriorly in two long pointed teeth, with seven to nine strong spines on the lateral margin and two to four small spines posteriorly. Risso's above cited remark states that *M. dumerili* is more slender than *M. squinado,* but this difference evidently falls within the range of variation of the species: in the Rijksmuseum van Natuurlijke Historie at Leiden there is a female *Maja squinado* with carapace length of 164 mm and carapace width 137 mm, thus not too much different from the measurements 160 mm cl. and 120 mm cb. given by Risso for *M. dumerili.*

The detailed description of the legs as given by Risso for *M. dumerili,* however, is so different from that of *Maja squinado,* that in no way can they be considered to belong to that species, even when one accepts some inaccuracies in Risso's description. Some of the characters that he stresses are simply not found in *Maja.* His description of the legs, however, fits very well those of *Paromola cuvieri,* as in that species the chelipeds are rather rounded, spiny, with the chela somewhat swollen. The fingers of the chela (the « dents » of Risso) are long, black and provided with scattered tufts of stiff hairs. The other legs are long, flattened in the distal part and spiny; the dactylus has its lower margin provided with a comb-like, arranged row of spines, which are most distinct in the posterior pairs of legs.

Risso's description of the carapace does not fit at all that of *Paromola,* in the latter genus it ends anteriorly in three large spines, not two, and there are no distinct anterolateral teeth.

The only conclusion that I can arrive at is that Risso's specimen of *Maja dumerili* is a composite one: that a carapace of *Maja squinado* was glued to the body of a specimen of *Paromola cuvieri* without carapace, either by mistake or as a practical joke. This has been done before, e.g. in the case of *Pactolus boscii* Leach, the type of which consisted of the carapace of *Stenorhynchus seticornis* (Herbst) and the rest of the body of an unknown crab, possibly *Acanthonyx.*

It seems best in the case of *Maja dumerili* to select the lower part of the composite specimen, which includes the legs, to be the lectotype of the species. Hereby *Maja dumerili* Risso, 1816, becomes a syno-

nym of *Dorippe cuvieri* Risso, 1816. These two new names were published simultaneously, and as the first reviser I now select *Dorippe cuvieri* Risso, 1816, to have precedence over *Maja dumerili* Risso, 1816.

Homola barbata (Fabricius, 1793)

Dorippe Spinosus Risso, 1816 : 34.
Homola spinifrons-Risso, 1827 : 34.
Homola Spinifrons-Hope, 1851 : 11.
Dorippe Spinosus Risso, Ms., description (c).
Homola spinifrons Risso, Ms., description (d no. 6).

Risso's accounts leave not the least doubt that he had the present species before him when drawing up the descriptions of *Dorippe spinosus* and *Homola spinifrons*. The manuscript descriptions are practically identical with the published ones. With the manuscript description of *Dorippe Spinosus* there is a note in Risso's handwriting, evidently made later: « est un homole, ... le homola spinifrons, Cancer Barbatus Lin. »

The name *Homola spinifrons* Leach, 1815, has been used by several authors, but *Homola barbata* (Fabricius, 1793) is adopted by the majority of authors of the present century. The name *Cancer barbatus* Fabricius, 1793, is not the oldest available name for the species, the names *Cancer cubicus* Forskål, 1775, and *Cancer novemdecos* Sulzer, 1776, both being older. In Opinion 522 (1958, Opin. Decl. Int. Comm. zool. Nomencl., 19(9): 212), however, the International Commission on Zoological Nomenclature has suppressed both the epithets *cubicus* Forskål, 1775 and *novemdecos* Sulzer, 1776, so that *barbatus* Fabricius, 1793, is the valid epithet for the present species.

The name *Dorippe spinosus* Risso, 1816, falls as a junior subjective synonym of *Cancer barbatus* Fabricius, 1793. It is interesting to see that Risso's specific epithet *spinosus* has been ignored by practically all subsequent authors, it is not even cited in synonymies. It seems as if most authors did not realize that Risso actually did propose a new species in 1816; this may have been caused by the fact that *spinosus* and *spinifrons* resemble each other so much.

Dorippidae

Ethusa mascarone (Herbst, 1785)

Dorippe Mascaronius-Risso, 1816 : 33.
Goneplax mascarone-Risso, 1827 : 13.
Aethusa mascarone-Risso, 1844 : 94.
Ethusa Mascarone-Hope, 1851 : 11.
Ocipode mascarone Risso, Ms., description (c).
Dorippe mascarone Risso, Ms., description (c).

Risso's identification is correct. His manuscript description of *Dorippe mascarone* is practically identical with the one that he published in 1816. The description of *Ocipode mascarone* is slightly differently worded, but gives nothing new.

Dorippe lanata (Linnaeus, 1767)

Dorippe Facchino-Risso, 1816 : 34 (not *Cancer facchino* Herbst, 1785).
Doripe fachino-Risso, 1827 : 33.
Dorippe Lanata-Hope, 1851 : 11.
Dorippe Facchino Risso, Ms., 2 descriptions (c, d no. 6).

There has never been any doubt as to the identity of Risso's specimens with the present species. The name *Dorippe facchino* used by Risso is a new combination of *Cancer facchino* Herbst, 1785. *Cancer facchino* was based by Herbst on material from both the Mediterranean (*Dorippe lanata*) and the Indo-West Pacific region. Serène & Romimohtarto (1969: 9) selected an Indo-West Pacific specimen as the lectotype of Herbst's species, so that *Dorippe facchino* and *D. lanata* are now names for different species.

Risso's manuscript descriptions are practically identical with the published ones.

Calappidae

Calappa granulata (Linnaeus, 1767)

Calappa Granulata-Risso, 1816 : 18.
Calappa granulata-Risso, 1827 : 31.
Calappa webbii Risso, 1844 : 94 (nomen nudum).
Calappa Granulata-Hope, 1851 : 10.
Calappa webbiana Monod, 1931 : 107, 122 (*webiana* on p. 122) (nomen nudum).
Calappa granulata Risso, Ms., 2 descriptions (c, d no. 6).
Calappa Webbiana Risso, Ms., 2 descriptions (a, g), listed (d no. 39) (also as *C. Webiana*).

The manuscript descriptions of *Calappa granulata* are very similar to the published ones and obviously have formed the base for these (Ms. c for the 1816 edition, Ms. d for the 1827 edition).

Calappa webbiana is the name that Risso in his manuscript gave to the form that in 1816(: 19) he indicated as Var. A, and in 1827 (:31) just as Var. The description that Risso gave in his manuscript g, « Poissons, Crustacés, Radiaires & Vers observés depuis la publication de l'histoire Naturelle des Principales productions de l'Europe méridionale », dated 1840, runs as follows:

« C[alappa]. Webbiana n. M[igraine]. Webb.

C[alappa]. testa carnea verrucosa, bisulcata ; lateribus crenulatis ; angulis posticis sexdentatis.

Calap. Roux Crust. de la Medit. pl. 16 - 1 - 2.

Cette Calappe, que je n'avois considérée que comme variété, ayant été admise parmi les espèces par plusieurs Naturalistes sans qu'on lui ait donné un nom, je la dédie au savant auteur de l'histoire naturelle des Canaries, avec lequel je l'ai également observée sur nos rivages.

Elle diffère de la Granulée [= *Calappa granulata*] par sa teinte d'un rouge incarnat pale un peu plus prononcé vers les parties inférieures par sa carapace terminée par six protuberances obtuses, dont deux forment le front ; par les petites ponctuations carminées vers les régions branchiales ; par les bords latéraux crénélés, et la partie postérieure terminée par six dentelures aigues ; par ses pinces plus petites et moins granulées que dans l'espèce commune, couronnées à la sommité par six très fortes dents aigues, disposées en peigne avec des pinces brunes ; par ses pattes jaunâtres & l'abdomen composé de six plaques, dont celle du sommet triangulaire.

La femelle offre une tache rouge carmin sur le devant, deux sur les parties latérales, et la quatrième est située au milieu du test.

Long. 0038. Larg. 0034. Séj. Rochers profonds. Ap. printems ».

The other manuscript description is very similar, differing only in minor details.

Calappa webbiana, as is shown by Risso's description and by his reference to Roux's (1830, pl. 16), is nothing but a colour variety of *C. granulata* and correctly was considered as such by Risso in 1816 and 1827.

Leucosiidae

Ilia nucleus (Linnaeus, 1758)

Leucos Nucleus-Risso, 1816 : 36 (*Leucosia* on p. 175).
Leucosia Leachii Risso, 1822 : 242.

Ilia levigata Risso, 1827 : 20.
Ilia rugulosa Risso, 1827 : 20.
Ilia rugulosa-Risso, 1844 : 94.
Ilia Nucleus and *I. Rugulosa*-Hope, 1851 : 6.
Ilia rugulosa Monod, 1931 : 123.
Cancer nucleus Risso, Ms., reference to Petagna (d no. 33).
Leucosia Nucleus Risso, Ms., description (c).
Leucosia Rugosa [*Rugosa* struck out and replaced by *Leachi*] Risso, Ms., description (c).
Ilia rugulosa Risso, Ms., listed (c), figure (f).
Ilia nucleus Risso, Ms., mention (d no. 20).

In 1816 Risso recognized a single species of *Ilia*, which he named *Leucos* [error for *Leucosia*] *nucleus*. In 1827 he recognized a smooth and a rough form, both of which he gave new names: *Ilia levigata* and *I. rugulosa* respectively. The communis opinio nowadays is that these two forms can only be considered infrasubspecific forms of a single species: *Ilia nucleus*, and both of Risso's named are assigned to the synonymy of the latter.

It is interesting to see that in 1822 Risso published the rough form as a new species under the name *Leucosia Leachii*, dedicated to the « célèbre conservateur du Muséum britannique, comme une marque distinguée due aux travaux que cet habile naturaliste a publiés sur les crustacés ». Why he changed the name later to *Ilia rugulosa* is not quite clear. In his manuscript (c) the species was originally named *Leucosia rugosa*, but there the word *rugosa* was struck out and replaced by *Leachi*.

In a letter to Roux (Ms. d no. 20) Risso wrote: « J'approuve votre prudence de ne pas changer le nom de l'*Ilia nucleus*, comme je l'ai fait; vous vous attirez moins le courroux des zélateurs des noms ».

The manuscript descriptions by Risso are very similar to the published ones. The unpublished figure is quite good. Risso also mentioned this species (as *Cancer nucleus*) in a manuscript listing (d no. 33) of species treated by Petagna (1792).

Corystidae

Corystes cassivelaunus (Pennant, 1777)

Corystes Cassivelaunus-Hope, 1851 : 6.
Corystes dentatus Risso, Ms., listed (d no. 9).
Coriste denté Risso, Ms., mention in letter to P. Roux (d no. 20).

In none of his publications does Risso mention the present species. In a letter to P. Roux, found among his manuscripts (d no. 20) he stated: « Je n'ai jamais trouvé sur nos bords le Coriste denté. Il est possible qu'il existe, mais je n'ai pas été assez heureux pour le rencontrer ». On a list of « Crustacés pour Mr. Risso » (Ms. d no. 9), according to Dr. Monod in Roux's handwriting, is mentioned a male specimen of « *Corystes dentatus* », so that Roux evidently sent Risso a specimen of this species, which the latter had not seen at that time.

Atelecyclidae

Atelecyclus undecimdentatus (Herbst, 1783)

Cancer Rotundatus-Risso, 1816 : 15, pl. 1 fig. 1 (not *Cancer rotundatus* Olivi, 1792).
Atelecyclus omoiodon Risso, 1827 : 18.
Cancer rotundus-Risso, 1844 : 94.
Atelecicle omoiodon-Risso, 1844 : 94.
Atelecyclus Omoiodon-Hope, 1851 : 6.
Cancer rotundatus Risso, Ms., description (c).
Atelecyclus omoiodon Risso, Ms., description (d no. 38).

Forest (1957) has unraveled the complicated synonymies of the two European species of *Atelecyclus*, and has shown that Risso's (1816, 1827) material does not belong to *Atelecyclus rotundatus* (Olivi, 1792), as suggested by Risso himself, but to *A. undecimdentatus* (Herbst, 1783).

Risso's manuscript descriptions, apart from minor differences (e.g., « mon ami Leach » instead of Leach) are identical with the ones, published under the same name.

Thiidae

Thia scutellata (Fabricius, 1793)

Thia Blainvillii Risso, 1822 : 241.
Thia Blainvillia-Risso, 1827 : 19.
Thia blainvillii-Risso, 1844 : 94.
Thia Blainvillii-Hope, 1851 : 6.
Cancer Blainvillea Risso, Ms., description (c).
Thia Blanvillii Risso, Ms., description (d no. 38).

The two manuscript descriptions (one of which is somewhat damaged) are both practically identical with the 1827 description.

Thia blainvillii has been regarded by practically all authors a synonym of *Thia scutellata* (also known as *Thia residua* (Herbst, 1799) or *Thia polita* Leach, 1815) and its identity has never given rise to any problem.

Cancridae

Cancer pagurus Linnaeus, 1758

Cancer fimbriatus-Risso, 1827 : 8.
Cancer Pagurus-Hope, 1851 : 3.
Cancer fimbriatus Risso, Ms., description (c).
Cancer Fimbriatus Risso, Ms., description (d no. 25).

There has never been any doubt about the correct identification by Risso of his material with *Cancer fimbriatus* Olivi, 1792, a species which by most authors has been synonymized with *Cancer pagurus* L.

Both of Risso's manuscript descriptions are practically identical with the one that he published in 1827. In the manuscript the words « ovata oblonga » and « ovale oblong » are added in the description of the carapace. In one of the manuscript descriptions (Ms c) Risso stated « Je ne connois pas encore la femelle », while in the other (like in the printed text) it is said that « La femelle est pleine d'œufs en mai ». The words « *Excil. Syn.* » in the published text are due to a printers error: it should be « excl. Syn. » as it is in the description in Ms d no 25; the one in Ms c gives : « exclusit synonim. ».

Pirimelidae

Pirimela denticulata (Montagu, 1808)

Pirimela Denticulata-Hope, 1851 : 4.
Pirimela denticulata Risso, Ms., listed (d no. 9).

Risso did not report this species in any of his publications. In his manuscripts it is only mentioned in a list headed « Crustacés pour M. Risso » (Ms. d no. 9), being an enumeration of material sent by Polydore Roux of Marseille to Risso.

Portunidae

Carcinus mediterraneus Czerniavsky, 1884

Cancer Maenas-Risso, 1816 : 12 (not *Cancer maenas* L., 1758).
Carcinus maenas-Risso, 1827 : 7.

Carcinus Moenas-Hope, 1851 : 5.
Carcinides maenas-Monod, 1931 : 123.
Cancer Maenas Risso, Ms., description (c), figure (f).

Only quite recently it was shown that the Mediterranean *Carcinus* belongs to a species different from *Carcinus maenas* (L., 1758) from the Atlantic, and that it should be known as *Carcinus mediterraneus*. Risso's descriptions of *Carcinus* (or *Cancer*) *maenas* clearly pertain to Czerniavsky's species.

Risso's manuscript description is practically identical with the one published in 1816. The figure is clearly that of the present species, but bears no inscription.

Portumnus latipes (Pennant, 1777)

Portumnus variegatus Risso, 1827 : 7.
Platyonichus Latipes-Hope, 1851 : 5.

It is not clear why Risso introduced a new name for this species, as he refers in its synonymy to Pennant's (1777) description of *Cancer latipes*.

The species is not mentioned in the manuscript notes.

Xaiva biguttata (Risso, 1816)

Portunus Biguttatus Risso, 1816 : 31, 175, pl. 1 fig. 2.
Portunus biguttatus-Risso, 1827 : 5.
Portunus biguttatus-Risso, 1844 : 94.
Portunus Biguttatus-Hope, 1851 : 4.
Portunus Biguttatus Risso, Ms., description (c), listed (c).

Risso's description and illustration make the identity of his species perfectly clear and no doubt has ever been attached to it.

The manuscript description is practically the same as the one published in 1816.

Macropipus arcuatus (Leach, 1814)

Portunus Rondeleti Risso, 1816 : 26, pl. 1 fig. 3.
Portunus Guttatus Risso, 1816 : 29.
Portunus Rondeleti-Risso, 1827 : 2.
Portunus guttatus-Risso, 1827 : 4.
Portunus rondeletii-Risso, 1844 : 93.
Portunus guttatus-Risso, 1844 : 93.
Portunus Rondeletii-Hope, 1851 : 4.
Portunus Guttatus-Hope, 1851 : 4.
Portunus Rondeleti Risso, Ms., description (c).
Portunus Guttatus Risso, Ms., description (c).

Risso's description and figure of *Portunus rondeleti* show the identity of his species with Leach's *Portunus arcuatus*. This synonymy has been accepted by all modern authors. Zariquiey Alvarez (1968: 369) found some differences between his Mediterranean and Atlantic specimens of this species and suggested that the Mediterranean form be named *Macropipus arcuatus rondeleti* (Risso, 1816).

Portunus guttatus is a species that is entirely ignored by H. Milne Edwards (1834), Heller (1863) and practically all other authors. Carus (1885: 517) listed it as a dubious species. The fact that *P. guttatus* has the front entire and the fifth pereiopod flattened, shows that it cannot be anything but *Macropipus arcuatus*. Risso described the carapace of *P. guttatus* as « lisse », this in contrast to *P. rondeleti* where it is said to be « couvert d'un duvet ». It would be interesting to know whether the typical form of *Macropipus arcuatus*, which has no pubescence on the carapace, occurs in the Mediterranean next to *M. arcuatus rondeleti*, in which the carapace shows a short hair cover. If that were true the two forms cannot be subspecies as was thought by Zariquiey Alvarez (1968).

Risso's (1816) var. A is based on colour only, as are his (1827) Var. I and II.

The manuscript descriptions are practically the same as those published in 1816.

Macropipus corrugatus (Pennant, 1777)

Portunus Puber-Risso, 1816 : 28 (not *Cancer puber* L., 1758).
Portunus Leachi Risso, 1827 : 3.
Portunus leachii-Risso, 1844 : 93.
Portunus Corrugatus-Hope, 1851 : 4.
Portunus Leachianus-Hope, 1851 : 4.
Portunus Leachi-Monod, 1931 : 123.
Portunus Puber Risso, Ms., description (c).
Portunus Leachi Risso, Ms., figure (f).
Portunus Leachianus Risso, Ms., listed (c).

The descriptions by Risso of his *Portunus Leachi* leave not the least doubt as to its identity with *Macropipus corrugatus*. Also his manuscript illustration confirms this. Carus (1885: 516) doubtfully synonymized *P. leachi* with *Macropipus puber* (L.), and most authors ignored Risso's name.

Risso's manuscript description of « *Portunus Puber* » is practically identical with the one published in 1816.

Risso's (1816) Var. A and Var. B are not recognizable as taxa different from the present species; they were omitted in Risso's publication of 1827.

Macropipus pusillus (Leach, 1816)

Portunus maculatus Risso, 1827 : 5, pl. 1 fig. 1.
Portunus maculatus-Risso, 1844 : 94.
Portunus Pusillus-Hope, 1851 : 4.
Portunus Maculatus-Hope, 1851 : 4.
Portunus maculatus-Monod, 1931 : 123.
Portunus maculatus Risso, Ms., listed (c, d no. 6, 9), figure (f).

Modern authors recognized the identity of *Portunus maculatus* Risso, 1827 and *P. pusillus* Leach, 1816. Risso's description and figure are sufficiently detailed to show that his species is different from the closely related *Macropipus zariquieyi* Gordon, 1968.

In Risso's manuscript notes *Portunus maculatus* is mentioned in a list of Crustacea (« Crustacés pour M. Risso ») sent by P. Roux to Risso (Ms. d no. 9). In this list the name *P. pusillus* is already given as a synonym of *P. maculatus*.

The unpublished manuscript figure is small and not very detailed.

Macropipus bolivari (Zariquiey Alvarez, 1948)

Portunus tuberculatus Monod, 1931 : 123 (nomen nudum).
Portunus tuberculatus Risso, Ms., figure (f).

Among Risso's manuscript notes there is a figure of a *Macropipus* indicated as *Portunus tuberculatus;* this figure has already been listed by Monod, 1931. The drawing is clear enough to show that not *Portunus tuberculatus* P. Roux (= *Macropipus tuberculatus*) was meant and the name probably is a new one that Risso intended to propose. The shape of the carapace, the unevenness of it (which perhaps was the reason for the name *tuberculatus*) and the coloration of the legs, show such a remarkable resemblance to those of *Macropipus bolivari* that there can be little doubt that that species is meant. The possibility remains that Risso's specimen is a juvenile *M. depurator,* but this seems unlikely. As Risso's specimen is no longer extant the question will never be definitely solved. Risso did not use the name in print, and in his manuscript notes it is found only in the legend to the figure.

Macropipus depurator (Linnaeus, 1758)

Portunus Plicatus Risso, 1816 : 29.
Portunus plicatus-Risso, 1827 : 3.
Portunus plicatus-Risso, 1844 : 93.
Portunus Plicatus-Hope, 1851 : 4.
Portunus Plicatus Risso, Ms., description (c).

Hope (1851) already indicated *Portunus plicatus* as a possible variety of *M. depurator,* and subsequent authors have usually, correctly, synonymized the two species. The manuscript description by Risso is practically identical with the one published in 1816. Risso's (1816) Var. A. is based only on colour, it is left out in his 1827 publication.

Macropipus vernalis (Risso, 1827)

Portunus Depurator-Risso, 1816 : 27 (not *Cancer depurator* Linnaeus, 1758).
Portunus vernalis Risso, 1827 : 3.
Portunus vernalis-Risso, 1844 : 93.
Portunus Vernalis-Hope, 1851 : 4.
Portunus depurator Risso, Ms., description (c).

Carus (1885: 516) placed *Portunus vernalis* Risso with some doubt in the synonymy of *Macropipus depurator* (L.), but most later authors ignored the species altogether. Only recently (Holthuis & Gottlieb, 1958: 86) it was shown that *Macropipus vernalis* (Risso, 1827) is a good species with as synonyms *Portunus valentieni* Cocco, 1833, *Portunus dubius* Rathke, 1837, and *P. barbarus* Lucas, 1846. It seems to replace *Macropipus holsatus* (Fabr.) in the Mediterranean.

The manuscript description of *P. depurator* in Ms. c, is very similar to the one published in 1816. Over the name *depurator* the words « *Vernalis* Printannier » are added.

Bathynectes longipes (Risso, 1816)

Portunus Longipes Risso, 1816 : 30, pl. 1 fig. 5.
Portunus longipes-Risso, 1827 : 4.
Portunus longipes-Risso, 1844 : 94.
Portunus Longipes-Hope, 1851 : 4.
P[ortunus] sp. sans légende Monod, 1931 : 123.
Portunus longipedes-Monod, 1931 : 133.
Portunus Longipes Risso, Ms., description (c), figure (without legend) (f).
Portunus Longipedes Risso Ms., description (h).

There has never been any doubt about the identity of this species of Risso's, and as far as I known, no other epithets have ever been proposed for it.

The manuscript description of *Portunus longipes* (in Ms. c) is practically identical with the one published in 1816. Among the figures in Risso's manuscripts there is one without other legend than « P[ortunus] »; it is very crude and might represent a poor illustration of the present species. A manuscript note in Dr. Monod's handwriting says « ? mauvaise figure de *Bathynectes ?* », and it seems best to leave it at that.

The manuscript (h) entitled « Premier mémoire zoologique sur différentes espèces d'êtres organisés, observés dans les environs de Nice » and dated 1811, has the following description of the present species:

« Portune longue patte N. Portunus Longipedes n. Ce portune a le têt lisse, avec une ligne rélévée au milieu, et un enfoncement en forme de lyre dans sa partie inférieure : il est garni de chaque côté de cinq dents inégales fort aigues dont la première [the posterior is meant] très longue. Le front est ondulé. Ses yeux sont d'un brun rougeâtre, placés sur des pédicules blancs. Les antennes extérieures sont très longues, soyeuses, le premier article renflé, les intérieures plus petites et coudées. Les palpes sont aplatis et ciliés. L'abdomen d'un blanc sâle, les appendices de génération courts et courbés. Les pinces sont lisses, bombées, leur quatrième articulation est unidentée en dessus, dents obscures et obtuses. La pince droite est trois fois plus grosse, et un peu plus longue que la gauche. Les pattes sont très longues, subtiles, nues, aplaties, terminées par un crochet jaunâtre. Les postérieures sont courtes, ciliées, lamiformes. La couleur de cette nouvelle espèce est d'un rouge brillant, varié par quelques points grisâtres. Il parvient à 22 millimètres de longueur sur 30 de largeur. La femelle ne diffère du mâle que par la grosseur de la pince gauche. Elle fraye en juin de 3 à 400 petits œufs brunâtres ».

Portunus hastatus (Linnaeus, 1767)

Eriphia prismaticus Risso, 1827 : 15.
Eriphia prismatica-Risso, 1844 : 94.
Eriphia Prismatica-Hope, 1851 : 4.
Lupa Hastata-Hope, 1851 : 5.
Cancer Prismaticus Risso, Ms., description (c).
Lupea dufourii Risso, Ms., listed (d no. 9).

The description of *Eriphia prismaticus* Risso, 1827, is such that later authors failed to recognize it. H. Milne Edwards (1834: 427) wrote about it: « L'Eriphie prismatique de M. Risso ... n'a pas été décrite avec assez de détails pour que l'on puisse la rapporter avec certitude à ce genre ». Most later authors completely ignored the species.

Risso's manuscript description of *Cancer prismaticus* (which in his manuscript (c) at first had been named *Cancer pelagicus* L.) runs as follows:

« C. Prismaticus. C. thorace utrinque unispinoso, anterius octodentato, fronte sexdentata, manibus multu angulo, prismaticis Fabr. Son test est bombé au milieu, inégal, d'un gris verdâtre, pointillé [originally tacheté] de blanc et de brun obscur, orné de trois petites taches oblongues d'un blanc rosacé vers la partie postérieure, et de trois grandes taches régulières de la même couleur, (une au milieu), les deux autres latérales presque sur le bord. Une proéminence externe conique se trouve de chaque... (Les bords latéraux sont) arrondies et découpé chacun en quatre pointes. Le front et le dessus des yeux sont garnies de... (huit aiguillons;) l'intermédiaire un peu plus long ; les antennes extérieures sont deux fois plus longues que les intérieures... (l'œil petit, noirâtre ; l'abdomen est d'un gris sale, pointillé d'obscur) les pinces sont courtes [or fortes], à plusieurs angles prismatiques (terminées par de petites dents - les pattes sont aplaties,) tachetées de brun, avec des ongles fort longs. (Long. 0,022, larg. 0,023. Séj. Sous les cailloux couverts de fucus. Au printemps.) »

The paper on which the description is written is in a very poor condition being at the extreme lower part of a sheet and folded, wrinkled and spotted, so that a great part of it is illegible. As this description, so far as readable, is practically identical with the published description of *Eriphia prismatica,* I have substituted the illegible parts with the, what I thought corresponding, parts of the printed text and placed the latter in round brackets. The noticeable differences between the written and printed text are the following: (1) in the written text the latin diagnosis is completely different and is followed by the word « fabr. » This evidently is a reference to Fabricius's (1775: 404) *Cancer pelagicus,* where practically the identical diagnosis is given. The manuscript description first was headed « C[ancer] Pelagicus C. Pelagice C. Pélagique », but this heading was struck out and replaced by « C. Prismaticus », while, probably still later a word, which may have been « Eriphia » was scribbled in front of *C. Prismaticus.* (2) between

« taches » and « oblongues » in the first line there is another word in the manuscript, which, however, is illegible. (3) the words « presque sur le bord. Une proéminence externe conique se trouve de chaque [and a few illegible words] » are entirely omitted in the printed text. (4) the word « simple » in the 6th line of the printed description is not present in the manuscript text.

Risso's (1827: 16) remarks about the two species of « *Eriphia* » also have a counterpart in manuscript c. The sentence concerning the present species is rather confused with many deletions. At first it was written: « Celui que je crois le C. Pelagicus de fabricius, est beaucoup plus rare, & ne sort de sa retraite que vers les crepuscules ou dans la nuit. Ces animaux offrent une chair d'un assez bon gout ». The word crois is struck out, evidently replaced by « nomme prismatique dif fère », but also that is struck out, while a new set of words « ne puis confondre » finally was accepted as a replacement for « crois ». Furthermore the following sentence was added evidently to be inserted after the word « Fabricius »: « et de rufopunctatus d'Herbest, avec lesquels on doit le rapprocher », while after « rare » the words « que le précédent » were added. Finally « d'un assez bon gout » is replaced by « assez bonne pourquoi on les mange ».

The whole situation here is highly confused, and there are several questions which cannot be answered. In the first place, the original diagnosis « thorace utrinque unispinoso, anterius octodentato, fronte sexdentata, manibus prismaticis » and the fact that the species was first identified with *Portunus pelagicus* (L.), make it practically certain that what Risso had before him when drawing up this description was *Portunus hastatus* (L.), the only Mediterranean species which fits the given diagnosis perfectly, and at the same time the only species resembling *P. pelagicus* to such an extent that a confusion is not surprising. Why was it then that Risso in the printed version, although (as far as we can ascertain) sticking very close to the original description, drastically changed the diagnosis ? It might be that at the time he made the description ready for the press it had already become illegible or almost illegible in several places so that Risso, who may have lost the original specimen, filled in the missing passages as well as he could, and subsequently changed the diagnosis to fit the incorrectly emended description. It seems best to accept the written diagnosis as correct. The name *Eriphia prismatica* Risso, 1827 thus falls as a junior subjective synonym of *Cancer hastatus* Linnaeus, 1767. Later authors cannot be blamed for not recognizing this species, as Risso, himself, evidently did not do so either.

It is likely that Risso's reference to « *rufopunctatus* d'Herbest » actually was meant to refer to « *Cancer sanguinolentus* Herbst », which is a *Portunus*, and not to *Cancer rufopunctatus* Herbst, which is a *Trapezia*.

According to the manuscript note d no. 9, P. Roux sent Risso a male and a female of the present species from Sicily under the name *Lupea dufourii*.

Geryonidae

Geryon longipes A. Milne Edwards, 1881 (pl. 6 fig. a)

Cancer vagnerii Risso, 1844 : 94 (nomen nudum).
Cancer Wagneri Hope, 1851 : 3 (nomen nudum).
Cancer Wagneri Monod, 1931 : 107, 113, 122, 123, fig. 3.
Geryon longipes-Monod, 1931 : 113, fig. 3.
Cancer purpuratus Risso, Ms., listed (d no. 39).
Cancer Wagneri Risso, Ms., 2 descriptions (a, g), figure (f).

Monod (1931) was the first to point out that the deep sea crab *Geryon longipes* had been known to Risso, who had described it in his manuscripts as *Cancer Wagneri*, and given a good illustration of it.

Among Risso's manuscripts there are two descriptions of this species, which are practically identical. The one cited here (from manuscript g) evidently was the one ready to be sent to the printer. Where the text of the other description (from manuscript a) is significantly different it is added in round brackets:

« C[ancer] Wagneri n., C. Wagner. pl. 1 fig. 3. C[ancer] testa glaberrima, rubro lacca, lutescente picta, utrinque triaculeata ; fronte bituberculata ; manibus inaequalibus.

Le nom de cette espèce de crabe rappellera aux naturalistes celui du savant professeur Wagner, qui s'est si dignement occupé de nous révéler tant des précieuses connoissances sur les animaux de nos bords.

Une teinte uniforme de rouge laque carminé sur un fond jaunâtre peint le corps de ce crustacé (est étendue sur tout le corps de cette espèce). Son test est uni, glabre, fort lisse, luisant, bombé, marqué d'un dessein et de quelques impressions régulières très diversifiées. Il est subarrondi sur le devant, coupé en angle sur les bords postérieurs ; tronqué en arrière, et muni sur chaque bord antérieur lateral de trois longues et fortes pointes aigues, inégales ; avec un front à trois sinus surmonté d'une pointe sur les côtés des orbites et d'une proéminence bituberculée au milieu. Les yeux sont gros, d'un rouge foncé à prunelle noirâtre. Les antennes extérieures sont renflées à leur base, soyeuses ensuite. Les intermédiaires sont épaisses, brisées, ciliées à la sommité.

Les mains sont grosses, épaisses, fortes. La droite plus grande et plus renflée, que la gauche, à troisième articulation triangulaire, armée d'un aiguillon en dessus, la quatrième en a une de chaque côté (en a deux lateraux). Les pinces sont noirâtres au sommet, garnies de dents blanches émoussées. Les pattes sont fort longues, déprimées, anguleuses, glabres, parsemées de quelques poils et pustules. La pièce inférieure, qui recouvre l'abdomen est triangulaire à six segmens. Celui (Tandis que celui) de la femelle est beaucoup plus devellopé et arrondi.

Long. 0068. Larg. 0072. Séj. Abymes marins. Apar. aout & septembre. Ce crustacé se laisse quelquefois (difficilement) prendre à l'hameçon, qu'on jette pour pêcher les merluches. Il diffère des (de toute les) espèces connues par les caractères, que je viens de signaler ».

The name, as *Cancer vagnerii* has been published as a nomen nudum by Risso in 1844. Hope (1851) also listed Risso's manuscript name (but spelled correctly) and added (Nov. Gen.); as he did not give any description either, the name remained a nomen nudum. Only 30 years later a description of the species was published and it then received its valid name, *Geryon longipes*. Risso's figure of the species was published by Monod (1931).

In Risso's manuscripts (d no. 39) there is a list of names starting: *Cancer purpuratus, Xantho sculptus, Calappa Webbiana Hippolites carneus...* which are exactly the species described in his manuscript (g) « Poissons, Crustacés, Radiaires & Vers observés depuis la publication de l'histoire naturelle des principales productions de l'Europe méridionale », except that the name *Cancer purpuratus* is used instead of *C. wagneri*. This and the fact that in his description Risso stressed the red colour of the species, makes it likely that *C. purpuratus* was an earlier name for *C. wagneri*. Risso did not use it anywhere else, and in the list there is no indication with the name apart from the word « Fig. » indicating that it has been figured. We therefore confidently can add both nomina nuda, *Cancer wagneri* Risso and *C. purpuratus* Risso to the synonymy of *Geryon longipes* A. Milne Edwards, 1881.

Potamidae

Potamon fluviatile (Herbst, 1785)

Potamobius fluviatilis-Risso, 1827 : 14.
Thelphusa Fluviatilis-Hope, 1851 : 7.
Telphusa fluviatilis Risso, Ms., listed (d. no. 9).

The European freshwater crab, which is found in Italy and the Balkans, but does not occur in France, was only mentioned by Risso (1827) « pour engager les propriétaires du midi de la France qui ont dans leurs jardins des ruisseaux ou des réservoirs d'eaux vives, d'acclimater ces crabes, comme l'avait fait, il y a plusieurs années, M. le comte Audiberti. Il les avait tellement multipliés en peu d'années, qu'on en rencontrait dans tous les environs de son jardin ». The animals from count Audiberti evidently have not managed to establish themselves, as *Potamon fluviatile* is still not a French species.

It is interesting to see that Risso used the generic name « *Potamobius* (Leach) » for the present genus. Leach himself did not publish the name at all. The first use of it (also attributed to Leach) is by Samouelle (1819: 95), who used it for *Astacus astacus* (L.); and *Cancer astacus* Linnaeus, 1758, is the type species of *Potamobius* Samouelle, 1819. Later Desmarest (1823: 246; 1825: 127) in a footnote to the generic name *Thelphusa* Latr., stated that it is « probable que ce genre diffère peu, ou ne diffère pas de [celui nommé] ... *Potamobia* par M. Leach ». *Potamobia* Leach appears here for the first time in print, evidently meant for the fresh water crab and not for the crayfish; the name, however, is a nomen nudum. Later, Desmarest (1826: 97) again used the name *Potamobia* and stated « M. Leach a ainsi modifié le nom de *potamophilus,* proposé par M. Latreille, pour un genre de crustacés ». The generic name *Potamophilus,* however, was first used in that form by Desmarest (1826a: 97) on the same page, he stated « Potamophile, Potamophilus. (Crust.) M. Latreille avoit d'abord donné ce nom au genre de crustacés décapodes brachyures, que depuis il a appelé Telphuse ». Actually Latreille (1816: 18) had used the vernacular name « Les Potamophiles » for the genus without giving a latin name. The name *Thelphusa* was later given by Latreille because the name Potamophiles « ayant déjà été consacré à un genre de coléoptères » (Latreille, 1829: 42). *Potamobia* Desmarest, 1826, and *Potamophilus* Desmarest, 1826, thus are available names as they are replacement names for *Thelphusa* Latreille, 1819; all three are, however, invalid.

Risso (1827) is the first to use the name *Potamobius* for the fresh water crab; the name *Potamobius* Risso, 1827, is a junior synonym of *Potamon* Savigny, 1816, *Thelphusa* Latreille, 1819, *Potamobia* Desmarest, 1826, and *Potamophilus* Desmarest, 1826, at the same time it is a junior homonym of *Potamobius* Samouelle, 1819.

In manuscript d no. 9, being a list of species sent by P. Roux to Risso, a male and female of this species from Sicily are mentioned.

Xanthidae

Xantho poressa (Olivi, 1792)

Cancer Rivulosus Risso, 1816 : 14.
Xantho rivulosus-Risso, 1827 : 9.
Xantho rivulosus-Risso, 1844 : 94.
Xantho rivulosa-Hope, 1851 : 3 (as synonym of « *Xantho Cinerea,* Bosc »).
Xantho rivulosus Risso, Ms., description (c).
Xanthus rivulosus Risso, Ms., listed (c).
Cancer rivulosus Risso, Ms., description (d no. 25).

Drach & Forest (1953) revised the European species of the genus *Xantho* and gave an excellent account of the present species for which they employed Risso's name, *Xantho rivulosus* (Risso, 1816). Later, Holthuis (1954a), pointed out that the correct name for the species is *Xantho poressa* (Olivi, 1792), Olivi's *Cancer Poressa* being different from the species to which Risso gave that name and it is identical with Risso's *Cancer rivulosus.* Risso's *Cancer Poressa,* as will be shown below is identical with *Xantho granulicarpus* Forest.

Risso's two manuscript descriptions of *Xantho* (and *Cancer*) *rivulosus* are practically identical with his published description of 1816, one however, has been altered subsequently so that it more resembles the 1827 description.

Risso's 1816 Var. A, B and C of this species are just colour variations, as are Vars. I to IV in his description of 1827.

Xantho granulicarpus Forest, in Drach & Forest, 1953

Cancer Poressa-Risso, 1816 : 11 (not *Cancer poressa* Olivi, 1792).
Xantho poressa-Risso, 1827 : 9.
Xantho Poressa-Hope, 1851 : 3.
Xantho Poressa Risso, Ms., description (c).

The descriptions by Risso of what he considered to be *Cancer Poressa* Olivi, 1792, are clearly based on specimens of *Xantho granulicarpus* as shown by his mention of a sculpted carapace, distinct anterolateral teeth, rough chelipeds, and pereiopods, which have the upper margins denticulated. The front can heardly be called four lobed as Risso does in both his French descriptions and in the latin diagnosis of 1827; the latin diagnosis « fronte fissa » of his 1816 paper is more appropriate in this respect.

Risso's manuscript description (in Ms c) is practically identical with the one that he published in 1816.

Pilumnus villosissimus (Rafinesque, 1814)

Cancer Hirtellus-Risso, 1816 : 12 (not *Cancer hirtellus* L., 1758).
Pilumnus villosus Risso, 1827 : 10.
Pilumnus Villosus-Hope, 1851 : 3.
Pilumnus rufescens (Risso Ms.) Hope, 1851 : 3 (in synonymy of « *Pilumnus Villosus,* Risso »).
Pilumnus (2 fig.) Monod, 1931 : 123.
Pilumnus Hirtellus Risso, Ms., description (c).
Pilumnus Risso, Ms., 2 figures (f).

The status and the name of the present species has been the subject of some controversy. Most early authors accepted *Pilumnus villosus* as distinct from *P. hirtellus* (L., 1758) (e.g., Heller, 1863: 73; Pesta, 1918: 417), be it that some authors treated Risso's form as a subspecies of *P. hirtellus.* Bouvier (1940: 256) considered it as belonging to « des variations locales ou accidentelles de *P. hirtellus* ». Zariquiey Alvarez (1968: 392), basing himself on his very rich private collection of Decapoda and his thorough knowledge of the living animals, came to the conclusion that *Pilumnus hirtellus* and *P. villosus* are two distinct species, both occurring in the Mediterranean. The name *P. villosus* Risso, 1816, for the species, however, cannot be used as the name *Pilumnus villosissimus* (Rafinesque, 1814) for it is older.

Risso's manuscript description of *Pilumnus hirtellus* is practically identical to the one that he published in

1816. Among his manuscript notes there are two figures (on one sheet) just labelled *Pilumnus* and clearly depicting the present species. Hope (1851) reported in the synonymy of *P. villosus* the name « *Pilumnus rufescens,* Risso ». I have been unable to find this name either in Risso's published or in his unpublished writings.

Pilumnus hirtellus (Linnaeus, 1758)

Cancer Hirtellus Variété A Risso, 1816 : 13.
Pilumnus villosus Var. I Risso, 1827 : 11.
Pilumnus Hirtellus-Hope, 1851 : 3.
Pilumnus hirtellus Var. A Risso, Ms., description (c).

In both of Risso's descriptions of *Pilumnus villosissimus,* he recognized a variety, which in 1816 he briefly diagnosed as follows: « On trouve une variété de cette espèce dont le têt est glâbre, dépourvu de poils, et dont les pinces sont lisses et d'un brun obscur ». In 1827 he changed this to « On trouve des individus dont le test est presque glabre, dépourvu ordinairement de poils, d'un brun ocracé, granulé de rouge, et tacheté de blanc ». Risso's manuscript description is identical to the one published in 1816.

The fact that the carapace is less hairy than in *P. villosissimus,* and that the (larger) cheliped is smooth, makes it likely that these specimens actually belonged to *P. hirtellus,* although they also could be *P. aestuarii.* Nardo, 1869. The available data are insufficient to decide this with any degree of certainty.

Eriphia verrucosa (Forskål, 1775)

Cancer Spinifrons-Risso, 1816 : 13.
Eriphia spinifrons-Risso, 1827 : 15.
Eriphia Spinifrons-Hope, 1851 : 4.
Cancer Spinifrons Risso, Ms., description (c).

There has never been any doubt as to the identity of the specimens that Risso brought to *Eriphia spinifrons* (Herbst, 1790). Later it has been shown that the name *Eriphia verrucosa* (Forskål, 1775) is the valid one for the species.

Risso's manuscript description is practically identical with the published one of 1816.

Zosimus aeneus (Linnaeus, 1758) (pl. 6 fig. b)

Xantho sculptus Risso, 1844 : 94 (nomen nudum).
Xantho Sculpta Hope, 1851 : 3 (nomen nudum).
Xantho sculptus Monod, 1931 : 107, 117, 122, 123, fig. 5.
Xantho Sculptus Risso, Ms., 2 descriptions (a, g), listed (d no. 39), 2 figures (f).
Xantho sculptus Holthuis & Gottlieb, 1956 : 288, 289, fig. 1.

Among Risso's manuscripts there are two descriptions (viz., in manuscripts a and g) of *Xantho sculptus* and two figures. The descriptions are as follows (the most complete (in MS g) is given, if the other draft differs essentially, its version is given in square brackets) :

« X. testa ovata transversa, griseo fulvo brunneo [obscure commixto] ; sulcis, tesselatisque impressis sculpta, manibus equalibus tuberculatis.

Je n'en témoigne pas moins ici ma reconnaissance envers la personne, qui m'a donné ce crustacé pêché dans nos mers, quoique je ne me rappelle plus de qui je le tiens & à qui la science en est redevable. L'aspect de ce Xanthe est vraiment singulier : son test est ovale en travers, tronqué sur les cotés inférieurs, et en arrière, arqué [en demicercle] sur le devant, assez relevé en dessus, d'un gris fauve mêlé de brunâtre, profondement sculpté d'arabesques régulières disposés sous toutes sortes de forme, traversé en tous sens par des sinus, dont les parties saillantes sont disposés comme en recouvrement sur le devant. Le front est entier, uni, ployé en arc entre les yeux ; les bords latéraux sont ornés de chaque coté de quatre espèces de festons irrégulièrement sinués. Les antennes sont peu développées, les extérieures plus longues que les intérieures.

Les mains sont grandes, épaisses, renflées, travaillées en relief, garnies en dessus des tubercules emoussés ou verrues arrondies, obtuses, armées de fortes pinces noirâtres, à dents tranchantes. Les pattes sont aplaties, régulièrement sinuées en dessus amincies en lames sur les bords, garnies de poils touffus avec les crochets aigus ; la pièce qui recouvre l'abdomen présente également des segmens sculptés sous plusieurs formes.

Long. 0062. Larg. 0080. Séj. grandes profondeurs. Apar. été. L'individu observé est mâle, je ne connois point la femelle ».

In the second draft the following remark is crossed out:

« Ce Crustacé mâle m'a été remis comme provenant des rochers de la pointe du fanal St. Hospice [near Nice], il est fort rare ».

The only European Xanthid that somewhat resembles the description and figure given by Risso of *Xantho sculptus* is *Actaea rufopunctata* H. Milne Edwards, and it is quite understandable therefore that Monod (1931) identified Risso's species with *Actaea.* However, a closer study of Risso's description and figures shows that he must have been mistaken in considering the species as originating from the Mediterranean. Both the description and figures fit in all respects the Indo-West Pacific species *Zosimus aeneus* (L., 1758). The size of the animal (cb. 80 mm), the sculpturation of the carapace, the granulation of the chelae, and the presence of crests on the pereiopods show the identity of the species very distinctly, even the black colour of the inner surface of the male chelipeds is clearly shown. The fact that Risso did not remember who gave him the specimen and that the original indication that it was obtained from the rocks near the lighthouse at Cape St. Hospice near Nice was later struck by Risso, indicate that he was not very certain about the origin of the specimen.

The species is not described in Risso's works, but he listed the name in 1844 and also Hope did mention *Xantho sculpta* as a nomen nudum. The identity of the species has been discussed by Holthuis & Gottlieb (1956: 288, 289, fig. 1).

Zosimus aeneus has a wide distribution throughout the Indo-West Pacific region, from the Red Sea and East Africa to Japan and Polynesia. It does not occur in the Mediterranean.

Pinnotheridae

Pinnotheres pinnotheres (Linnaeus, 1758)

Pinnotheres Mytilorum-Risso, 1816 : 23 (not *Cancer mytilorum* Herbst, 1783).
Pinnotheres veterum-Risso, 1827 : 17.
Pinnotheres Montagui-Risso, 1827 : 17.
Pinnotheres Veterum-Hope, 1851 : 5.
Pinnotheres Montagui-Hope, 1851 : 5.
Pinnotheres mytilorum Risso, Ms., description (c).
Pinnotheres Montauui Risso, Ms., description (d no. 12).
Without name Risso Ms., figure (f).

Risso's (1816) description of *Pinnotheres mytilorum* clearly refers to *P. pinnotheres,* as is also shown by Risso's statement that the species lives in *Pinna* (« jambonneau marin »). In 1827 Risso changed the specific epithet to *veterum* (*Pinnotheres veterum* Bosc, 1802, is a junior synonym of *Cancer pinnotheres* L., while *Cancer mytilorum* Herbst, 1783, is a synonym of *Can-*

cer pisum L.). *Pinnotheres montagui* Leach, 1815, is based on the male of the present species. Risso's (1827: 17) reference to the long dactyli of the pereiopods makes it very likely that his specimens of *P. montagui* actually did belong to the present species.

Risso's manuscript (Ms. c) description of *Pinnotheres mytilorum* (which name is crossed out and replaced by *P. pinnophylax*) is practically identical with his 1816 description. But in the manuscript he made the remark: « La femelle est six fois plus grande que le male, elle est pleine de petits œufs d'un rouge violâtre en juin ». Risso's unpublished figure does not show many details. The manuscript description (MS. d no. 12) of *P. Montagui* is practically identical to the one published in 1827.

Pinnotheres pisum (Linnaeus, 1767)

Pinnotheres pisum-Risso, 1827 : 16.
Pinnotheres Latreilii-Risso, 1827 : 16.
Pinnotheres Pisum-Hope, 1851 : 5.
Pinnotheres Latreillii-Hope, 1851 : 5.

Risso's identification of the species has never been questioned. He gave the female the name *Pinnotheres pisum* (L.), the male *P. Latreilii* Leach. The species is not mentioned in the manuscript notes.

Palicidae

Palicus caronii (P. Roux, 1830)

Cymopolia Caronii-Hope, 1851 : 11.
Cymopolia Caronii Risso, Ms., listed (d no. 9).

Risso did not mention this species in any of his publications, but among his manuscripts, in a list written by Polydore Roux and entitled « Crustacés pour M. Risso » (MS d no. 9), there is as no. « 131 *Cymopolia Caronii* nob. - Sicile ». Risso, after his 1827 book had been published, must therefore have become acquainted with the species.

Goneplacidae

Goneplax rhomboides (Linnaeus, 1758)

Ocypode Longimana-Risso, 1816 : 20.
Goneplax rhomboïdalis-Risso, 1827 : 13.
Gonoplax Rhomboides-Hope, 1851 : 7.
Goneplax Rhomboidalis Risso, Ms., description (c) mentioned (d no. 20).

Goneplax rhomboides is a well known and characteristic species, and no difficulty is attached in recognizing it from Risso's descriptions.

The manuscript description, originally was entitled *O[cipode]. Longimana,* but this name was replaced by *Goneplax rhomboidalis.* It is somewhat longer than the 1816 description but contains all essential details of the latter; afterwards parts were omitted and others added and the new text comes very close to the 1827 version. In a letter to P. Roux of which a concept is present among Risso's manuscript notes (MS d no. 20) he stated: « Le Goneplax Rhomboïdal est un joli Crustacé qui varie des teintes à diverses époques de sa vie & est fort brillant dans son état d'amour ».

Grapsidae

Pachygrapsus marmoratus (Fabricius, 1787)

Grapsus Varius-Risso, 1816 : 21.
Grapsus varius-Risso, 1827 : 11.
Grapsus Marmoratus-Hope, 1851 : 6.
Grapsus cinereus-Hope, 1851 : 6.
Grapsus varius Risso, Ms., description (c).

The identity of Risso's species was never in doubt. *Pachygrapsus marmoratus,* a very common littoral species in the Mediterranean, was well described by him. The manuscript description is almost exactly the same as the one published in 1816. Risso's (1816) Var. A and Var. B, which in 1827 he named Var. I and II respectively, are just colour variations.

Hope (1851: 6) cited as a synonym of *Grapsus marmoratus* the name *G. cinereus* Risso. So far as I know Risso has never described or mentioned a *Grapsus cinereus* and Hope's reference probably is a lapsus for *G. cinereus* Bosc, 1802.

Planes minutus (Linnaeus, 1758)

Grapsus Pelagicus-Hope, 1851 : 7.
Nautilograpsus Testudinum-Hope, 1851 : 7.
Grapsus minutus Risso, Ms., listed (d no. 9).

In none of his publications Risso dealt with the present species. A list among his manuscript notes (Ms d no. 9) written by P. Roux and entitled « Crustacés pour M. Risso » shows that Roux sent Risso a male and a female of « *Grapsus minutus* », evidently the present species, although Roux himself described the species both under the names *Grapsus pelagicus* and *G. testudinum* (cf. Roux, 1828, pl. 6).

It is possible that Hope's (1851) record of *Nautilograpsus testudinum* actually refers to the next species.

Euchirograpsus liguricus H. Milne Edwards, 1853 (pl. 5 fig. b)

Grapsus testudinum-Monod, 1931 : 115, 123, fig 4 (not *Grapsus testudinum* Roux, 1828).
Euchirograpsus liguricus-Monod, 1931 : 115, fig. 4.
Grapsus testudinum Risso, Ms., figure (f).

Risso did not publish on this species, and there is no description or even mention of it in his handwritten notes. There is, however, a beautiful figure of a specimen among the other carcinological illustrations in Risso's manuscripts. This figure bears the legend *Grapsus testudinum.* Monod (1931: fig. 4), who reproduced Risso's figure, already pointed out that this represented without any doubt *Euchirograpsus liguricus.* Risso thus knew the species long before it was officially published by H. Milne Edwards in 1853.

The name *Grapsus testudinum* used by Risso is not a new name but evidently refers to *Grapsus testudinum* P. Roux (1828, pl. 6 fig. 1-6), which is based on material of *Planes minutus* (L.) found on a marine turtle near Sicily. Risso thus made an incorrect identification. See also under the previous species.

Brachynotus sexdentatus (Risso, 1827)

Goneplax sexdentatus Risso, 1827 : 13.
Goneplax sexdentatus-Risso, 1844 : 94.
Cleistotoma Gemellarii-Hope, 1851 : 7.
Ocypode Longimana Var. A. Risso, Ms., description.

The original description of the species is short, but there is nothing in it that would not fit the present species apart from the indication of the measurements: « Long. 0,016, larg. 0,026 », which possibly is an error for « Long. 0,016, larg. 0,020 ». The identity of the species has never been questioned and the specific epithet

has been regularly used for it. Recently Zariquiey Alvarez (1968: 431) described a second Mediterranean species of the genus, *B. foresti*. Risso's description would fit either species and therefore it seems advisable that a neotype be selected for the present species (the original type material is lost) in order to settle its identity and to protect the name.

In the manuscripts of Risso's there is only a single mention of the present species, viz., under *Ocypode Longimana* (later changed to *Goneplax rhomboidalis*, see above). Following the description of *Ocypode Longimana* the manuscript reads as follows: « var. A. On trouve des individus [de cette espèce qui ont le] à têt sexdenté postérieurement, d'une teinte rose pale [tous] à pattes [sont] blanchâtres & les ongles bruns » (the words in brackets have been crossed out).

Parthenopidae

Parthenope macrochelos (Herbst, 1790)

Eurynome Aldrovandi Risso, 1827 : 22.
Eurynoma aldrovandii-Risso, 1844 : 94.
Lambrus Mediterraneus-Hope, 1851 : 10. (*L. Aldrovandi* given as a possible synonym).
Lambrus Aldrovandi-Monod, 1931 : 123.
Parthenope Buffo Risso, Ms., description.
Parthenope Aldrovandi Risso, Ms., description (c, d no. 6), mention and generic diagnosis (d no. 21).
Lambrus Aldrovandi Risso, Ms., figure (f).
Lambrus mediterraneus Risso, Ms., figure (f).

Eurynome Aldrovandi Risso has been identified by practically all subsequent authors with *Parthenope macrochelos* and there never was any problem about its synonymy. The figures of this species among Risso's manuscripts fully confirm its identity with Herbst's species. One of the figures is provided with the legend *Lambrus mediterraneus*. This name probably was used under the influence of P. Roux, who described the species as new under that name (Roux, 1828: pl. 1). The epithet *mediterraneus* P. Roux, 1828, has been used by many authors, notwithstanding both *macrochelos* Herbst, 1790 and *aldrovandi* Risso, 1827 were older. In the last decades, however, the epithet *macrochelos* has become generally accepted.

The manuscript description (in Ms. c) is almost identical to the one publisfed in 1827. Risso first intended to name the species « Parthenope Buffo, Parthénope crapaud », but changed this in the manuscript to « Parthenope aldrovandi, Parthénope d'Aldrovande ».

Parthenope angulifrons Latreille, 1825

Lambrus Angulifrors-Hope, 1851 : 10.
Lambrus Montgrandis-Monod, 1931 : 123.
Lambrus Montgrandis Risso, Ms., figure (f).

This species has not been dealt with in any of Risso's publications. Also there are no handwritten notes about it among his manuscripts, but there is a good figure with the legend « Lambrus Montgrandis ». The name *Lambrus montgrandis* was first used by P. Roux (1830: pl. 23), and Risso evidently took this name from Roux. It is interesting that the letter N. is placed by Risso after the name *Lambrus Montgrandis* on the figure, indicating thereby that he considered it a new species of himself. The possibility that the plate was received from P. Roux and that the inscription is his, does not hold, as on the same plate the figure of « *Lambrus Aldrovandi* N. » is given.

Majidae

Maja squinado (Herbst, 1788)

Maïa Squinado-Risso, 1816 : 44.
Maia Squinado-Risso, 1827 : 22.
Maja Squinado-Hope, 1851 : 7.
Maia squinado Risso, Ms., description (c).
Inachus Squinado Risso, Ms., description (d no. 26).

The name of this species has not been changed since Risso's time, and it is quite clear what species Risso meant. The manuscript description (c) is practically identical to that published in 1816; the description d no. 26 resembles that published in 1827.

See also the discussion of *Maia Dumerili* for this species (p. 63).

Maja crispata (Risso, 1827)

Maia crispata Risso, 1827 : 23.
Maia crispata-Risso, 1844 : 94.
Maja Crispata-Hope, 1851 : 7.
Maia crispata Risso, Ms., description (d no. 21).

Maja crispata is one of the forgotten species of Risso. The original (1827) description runs as follows :

« *Testa fusco-brunnea, pilosissima, spinulosa ; fronte spinis quatuor anterioribus ad basim conjunctis, posterioribus longioribus, divaricantibus.*

Cette espèce, d'un brun obscur, est bossue, parsemée de pointes tuberculeuses, et couverte de petits poils nombreux, ordinairement frisés; son front est muni de quatre pointes sur le devant, réunies à leur base, les postérieures sont assez longues et écartées ; les pattes son courtes.

La femelle porte des œufs brun rougeâtre. Long. 0,036, larg. 0,036. Séj. Régions des algues. App. Printemps, été ».

The description leaves somewhat to be desired, but as also indicated by all later authors it certainly is a species of *Maja*. H. Milne Edwards (1834: 328) remarked: « Il serait possible que le Maïa crépu de M. Risso (Hist. nat. de l'Eur. mérid., t. V, p. 23) ne fût autre que le M. verruqueux, mais les caractères que cet auteur y assigne ne sont pas suffisans pour résoudre la question ». Hope (1851: 7) assigned *Maja verrucosa* H. Milne Edwards definitely to the synonymy of *Maja crispata*. Later authors either ignored Risso's name or they (e.g., Carus, 1885: 507) referred it to the synonymy of *M. squinado* (Herbst). Risso's description is not very clear and might refer to either of the *Maja* species. The four anterior spines evidently are the two pseudorostral spines and the two preorbitals. Each pseudorostral is indeed fused at the base with a preorbital; the latter, however, is much shorter than the pseudorostral spine, therefore the sentence « les postérieures... » probably refers to the lateral spines of the carapace, which in *M. verrucosa* indeed are longer than in *M. squinado*. Risso gave the length of *M. crispata* as 36 mm and the carapace width as also 36 mm. He had an ovigerous female. Now in *M. squinado* ovigerous females are known from cl. 84 mm and more (cf. Zariquiey Alvarez, 1968 : 447), so that Risso's specimen can impossibly be *M. squinado*, but must be *M. verrucosa* as that species does not grow larger than 50 mm carapace length (Zariquiey Alvarez, 1968 : 447; Bouvier, 1940 : 323, gave the length as 38.5 mm).

For these reasons *Maja crispata* Risso, 1827, has to be considered a senior subjective synonym of *Maja verrucosa* H. Milne Edwards, 1833, and should be used for the species.

In Risso's manuscripts there are only two lines dealing with this species; these are identical with the latin dia-

gnosis of the published description. See also under the next species.

Pisa tetraodon (Pennant, 1777)

Maïa Hirticornis-Risso, 1816 : 46 (not *Cancer hirticornis* Herbst, 1804).
Inachus hirticornis-Risso, 1827 : 26.
Inachus hirticornis-Risso, 1844 : 94.
Pisa Hirticornis-Hope, 1851 : 8.
Pisa Tetraodon-Hope, 1851 : 8.
Maia hirticornis Risso, Ms., description (c).
Inachus hirticornis Risso, Ms., description (d no. 26).

Risso's description of this species is very clear and subsequent authors recognized its identity with *Pisa tetraodon* (e.g., H. Milne Edwards, 1834: 305). The name *Maia hirticornis* was not intended by Risso as a new name, but as a new combination of *Cancer hirticornis* Herbst (1804). Herbst's species, however, proves to be synonymous with *Cancer muscosus* Linnaeus, 1758 (= *Pisa muscosa*).

Var. A and B mentioned by Risso (1816), and which in 1827 were indicated by him as Var. I and II respectively, evidently differ from the typical form only in colour.

Risso's two manuscript descriptions are very similar to the text that he published in 1816. At the end of the description in manuscript *c* a note is added: « Nous avons une petite Maia vert sale à tet arrondi avec des poils frisés, qui diffère assez de l'irticorne... ». This might refer to *Maja crispata.*

Pisa corallina (Risso, 1816)

Maïa Corallina Risso, 1816 : 45, pl. 1 fig. 6.
Inachus corallinus-Risso, 1827 : 26.
Inachus corallinus-Risso, 1844 : 94.
Pisa Corallina-Hope, 1851 : 8.
Maia Corallina Risso, Ms., description (c).
Inachus Corallina Risso, Ms., description (d no. 26).

The status of the *Pisa* species of the *tetraodon*-group has long been under discussion. Authors in the previous century (e.g. Heller, 1863: 44-46) recognized *Pisa tetraodon* and *P. corallina* as two distinct species. Pesta (1918: 338-342) gave a review of the problem and concluded that only one species, *Pisa tetraodon,* occurs in this group, and that the other so-called species were just extreme variations. Zariquiey Alvarez (1968: 448-453), however, after a prolonged study of living and preserved material, arrived at the conclusion that in the Mediterranean three distinct species of the *Pisa tetraodon* complex are represented: *P. tetraodon* (Pennant, 1777), *P. corallina* (Risso, 1816) and *P. muscosa* (Linnaeus, 1758). Zariquiey's opinion is accepted here as fully convincing.

Risso's manuscript descriptions are practically the same as the one published in 1816.

Pisa armata (Latreille, 1803)

Maïa Armata-Risso, 1816 : 47.
Pisa armata-Risso, 1827 : 24.
Pisa Armata-Hope, 1851 : 8.
Maia Armata Risso, Ms., description (c).
Pisa armata Risso, Ms., mention and generic diagnosis (d no. 21).
Inachus armatus Risso, Ms., description (d no. 26).

The confusion that existed in the *Pisa armata*-group was solved by the excellent study of Pesta (1913), whose conclusions have been accepted by all subsequent authors. That Risso's *Maïa* (or *Pisa*) *armata* indeed belongs to Latreille's species is shown by his definition of the species which describes the carapace as having « angulis posticis mucronatis », a character which distinguishes *Pisa armata* from the closely related *Pisa nodipes* (Leach, 1815).

Risso's (1827: 24) remark that his Var. I, in which the individuals have the colour mixed with reddish and pale yellow, perhaps should be assigned to « l'*Inachus musirus* de M. Otto » (= *Inachus musivus* Otto, 1821, = *Pisa nodipes* (Leach, 1815)), gives too little information about these specimens to make their status certain. It is of course possible that Risso, under the name *Pisa armata* confused the two species *P. armata* and *P. nodipes.* His Var. I of 1827 is the same as his Var. A of 1816.

The manuscript descriptions (in Ms. c and d) are very similar to the one published in 1816; the description of Ms. d has been amended, so that it comes close to the 1827 version.

Herbstia condyliata (Fabricius, 1787)

Maïa Condyliata-Risso, 1816 : 42.
Mithrax Herbsti Risso, 1827 : 25.
Mithrax herbestii-Risso, 1844 : 94.
Herbstia Condyliata-Hope, 1851 : 8.
Mithrax Herbesti Monod, 1931 : 123.
Maia condyliata Risso, Ms., description (c).
Mythrax Chondilyatus Risso, Ms., mention and generic diagnosis (d no. 21).
Mithrax Herbesti Risso, Ms., figure (f).

In 1827, Risso, without giving his reasons, introduced the new name *Mithrax Herbsti* for the species that in 1816 he had described under the name *Maïa condyliata,* and which indeed is identical with *Cancer condyliatus* Fabricius, 1775. Later authors treated *Mithrax herbsti* Risso as a synonym of *Herbstia condyliata* (Fabr.). The published and manuscript descriptions, as well as the unpublished figure, show that they are right in this.

Lissa chiragra (Fabricius, 1775)

Maïa Chiragra-Risso, 1816 : 47.
Maïa Lutea Risso, 1816 : 48.
Lissa chiragra-Risso, 1827 : 24.
Lisa Chiragra-Hope, 1851 : 8.
Lissa Lutea-Hope, 1851 : 8.
Maia Chiragra Risso, Ms., description (c).
Maia Lutea Risso, Ms., description (c).
Lissa chiragra Risso, Ms., description (d no. 26).

There are no problems about this species. Risso's descriptions are clear and have been accepted by all authors. *Maja lutea* Risso, 1816, evidently is based on a colour aberration, as was recognized by Risso himself, who in 1827 synonymized *Maia lutea* with *Lissa chiragra.* The manuscript descriptions do not differ essentially from the published ones.

Under *Maia lutea* Risso (1816: 48) referred to Darluc's mention of this species. The entire information given by Darluc (1786: 192) consists of the following two lines: « *La Favouyo jauno,* le Crabe jaune. Il n'est pas commun ». Hope (1851: 8) even went so far as to cite Darluc as the author of *Lissa lutea.*

Eurynome aspera (Pennant, 1777)

Eurynome scutelatus Risso, 1827 : 21, pl. 1 fig. 2.
Eurynoma scutellata-Risso, 1844 : 94.
Lambrus scutellatus-Monod, 1931 : 123.

Eurynome Scutellatus Risso, Ms., 3 descriptions (c, d no. 21; one, as *Eurinome S*, in Ms. c), listed (d no. 6), figure (f).

Eurynome scutelatus was considered by H. Milne Edwards (1834: 352) to be possibly identical with *E. aspera*, but according to him Risso « ne l'a pas fait connaître avec assez de détails pour que nous puissions le rapporter avec certitude à ce genre [= *Eurynome*], ou le distinguer de l'Eurynome rugueux [= *E. aspera*] ». Heller (1863: 54) definitely synonymized the two and has been followed by all subsequent authors.

Risso's unpublished notes and figure provide no new data about the species.

Anamathia rissoana (Roux, 1828)

? Amathia Genyana Hope, 1851 : 10 (nomen nudum).

Hope (1851: 10) in his catalogue mentioned two species of *Amathia* Roux, 1828 (a preoccupied generic name, which is now replaced by *Anamathia* S.I. Smith, 1885), viz., *Amathia Rissoana* Roux and *Amathia Genyana* Risso. *Anamathia rissoana* is a well known species and at present is the only species of the genus *Anamathia* known to occur in the Mediterranean. *Amathia Genyana*, however, is a nomen nudum, which I have been unable to find referred to anywhere else in the literature, while it does not occur, so far as I can find, in any of Risso's publications or in his available manuscripts. It is possible that the name *Amathia genyana* is based on a specimen of the Mediterranean species of *Anamathia*, but lack of any information about Risso's supposed species, makes all speculation rather sterile.

Acanthonyx lunulatus (Risso, 1816)

Maïa Lunulata Risso, 1816 : 49, pl. 1 fig. 4.
Libinia lunulata-Risso, 1827 : 29.
Libinia lunulata-Risso, 1844 : 94.
Acanthonyx Lunulata-Hope, 1851 : 9.
Maia Lunulata Risso, Ms., description (c).
Libinia Lunulata Risso, Ms., mention and generic diagnosis (d no. 21), description (d no. 26).
Inachus Lunulatus Risso Ms., description (d no. 26).
Without name Risso, Ms., figure (f).

Risso's descriptions and figures (both published and unpublished) leave not the least doubt as to the identity of this species and it has been recognized by all subsequent authors.

Inachus dorsettensis (Pennant, 1777)

Macropus Parvirostris Risso, 1816 : 39.
Doclea fabriciana Risso, 1827 : 28.
Macropus Parvirostris-Hope, 1851 : 10.
Macropus parvirostris-Monod, 1931 : 133.
Macropodia parvirostris Risso, Ms., description (c).
Macropus parvirostris Risso, Ms., description (h).
Doclea Latrillia Risso, Ms., description (d no. 6, first as *Doclea Herbstii*).

The species, that was described by Risso (1816) as new under the name *Macropus parvirostris* and in 1827 was given by him the new name *Doclea Fabriciana*, is generally considered a species dubia. H. Milne Edwards (1834: 290) remarked: « Le *Cancro brachichelo congener*, figuré par Aldrovande, p. 204, appartient évidemment au genre Inachus, mais ne peut être déterminé spécifiquement. Il en est de même du *Cancre a court bras* de Rondelet (liv. 18, chap. 20, p. 408) et de la *Doclea Fabriciana* de M. Risso (*Hist. nat. de l'Eur. mérid.*, t. 5, p. 28), que cet auteur avait d'abord décrit sous le nom de *Macropus parvirostris* (*Crust. de Nice*, p. 39, et Blainville, *Faune française*, Pl. 8, fig. 2), et à laquelle il rapporte les figures précitées d'Aldrovande et de Rondelet ». As usual H. Milne Edwards' remarks are very much to the point. Risso's two descriptions show that he had a specimen of *Inachus* before him when drawing these descriptions up, and his references to Aldrovandus and Rondelet confirm this, but it is impossible to decide which species is meant. Aldrovandus and Rondelet's descriptions and figures are likewise insufficient to identify their material beyond the genus. Of the manuscript descriptions the one (in MS. c) under *Macropodia parvirostris* is practically identical with the 1816 description, while the one named *Doclea Latrillia* (which first was named *Doclea Herbstii*, but that name is struck out) conforms quite well with the 1827 description. The manuscript description under the name *Macropus parvirostris*, which is dated 1811 (manuscript h), is somewhat different; it runs as follows:

« Ce Macrope a le têt subcordiforme, garni de six longues épines dont celles du milieu sont plus rélévées et coniques. Les bords latéraux sont lisses, ornés d'une seule petite pointe près des yeux. Le front est court, terminé par deux petites épines aigues. Les yeux peu proéminents sont rougeâtres, et situés dans deux fossules bombées. Les antennes extérieures sont soyeuses, unies, renflées à leur base, les intérieures coudées, d'un rouge vif, plus longues que le rostre. Les palpes extérieurs sont aplatis, les intérieurs linéaires. L'abdomen est lisse, garnis de deux appendices. Les pinces sont courtes, arrondies à cinq articulations, terminées par des longues dents ouvertes. Le premier paire des pattes sont très longues, plus épaisses que les pinces, et couvertes des poils rudes. Les autres sont petites, lisses, aranéiformes, terminées par de fins crochets aigus. La couleur de ce Macrope est d'un rouge corail, avec un duvet rousseâtre qui en ternit l'éclat. Sa longueur et largeur sont de 20 millimètres. »

The specimen described by Risso is a male, judging by the « open » fingers of the chela and by the fact that the abdomen has two appendages (evidently the male gonopods). Of the Mediterranean species of *Inachus* that can be excluded from the possibility of being the same as Risso's species are : (1) *Inachus phalangium* (Fabricius, 1775), which has no large intestinal spine and in which the rostrum does not end in two sharp spines. (2) *Inachus thoracicus* Roux, which has more than 6 long spines on the carapace, and in which the male has the remarkable and conspicuous callosities on the thoracic sternum around the abdomen, which are so striking that Risso in describing the abdomen could not have overlooked them. (3) the same is true for *Inachus aguiarii* Brito Capello, 1876. (4) *Inachus leptochirus* Leach, 1817, which has in the male a single callosity on the thoracic sternum at the tip of the abdomen; this callosity, it is true, is smaller and easier to overlook than the ones in the previous two species. Furthermore the branchial region has two tubercles at each side, of which only the posterior could be termed a long spine. Also this species is one of the rarer *Inachus* species of the Mediterranean. Though the process of elimination only two species remain as candidates for *Macropus parvirostris*, both being quite common in the Mediterranean : *Inachus dorsettensis* (Pennant, 1777) and *Inachus communissimus* Rizza, 1839. In both the mesogastric and cardiac spines are long and conspicuous, while on either branchial region there are two distinct but smaller spines; the protogastric region has no spines at all but just a transverse row of 4 small, be it distinct, tubercles. Also in the other points, the descriptions given by Risso agree well with these two species, and it seems certain that *Macropus parvirostris* is identical with one

of the two. The main difference between *Inachus communissimus* and *I. dorsettensis* is that the latter is slenderer: the ratio between carapace length and carapace width in *I. communissimus* is 0.9 in *I. dorsettensis* it is 1.1 Risso gave for *Macropus parvirostris* as carapace length 20 mm and as carapace width also 20 mm. Therefore, the known data of Risso's species make it impossible to decide whether it is conspecific with *I. dorsettensis* or with *I. communissimus*. As the epithet *parvirostris* (and also the epithet *fabriciana*) is older than that of *communissimus*, it will remain a threat to the latter and to the stability of the nomenclature of the group. In order to definitely solve this problem therefore, a neotype for *Macropus parvirostris* Risso (1816) and at the same time for *Doclea fabriciana* Risso (1827) should be selected in such a way that both names fall as junior subjective synonyms of *Cancer dorsettensis* Pennant, 1777, and can do no nomenclatural harm.

Inachus thoracicus (Roux, 1830)

Inachus Thoracicus-Hope, 1851 : 9.
Inachus thoracicus-Risso, Ms., listed (d no. 9).

Risso has not published anything concerning this species and there are no handwritten descriptions of it by him. Among Risso's papers, however, there is a list written by P. Roux and entitled « Crustacés pour Mr. Risso » (Ms. d no. 9) in which is mentioned « 130. Inachus thoracicus ♂ nob. », thus indicating that Risso received a male specimen of this species from P. Roux.

Inachus phalangium (Fabricius, 1775)

Macropus Aracnides Risso, 1816 : 40.
Macropodes arachnides-Risso, 1827 : 27.
Inachus Dorynchus-Hope, 1851 : 9.
Macropus Arachnoides-Hope, 1851 : 10.
Macropodia Aracnides Risso, Ms., description (c).

Risso's *Macropus aracnides* has been completely ignored by subsequent authors. Neither H. Milne Edwards (1834), Heller (1863), nor Carus (1885) even mention the species. Hope (1851) emended the spelling of the specific epithet to *arachnoides* and cited Lamarck as the authority, but Lamarck has not described nor even mentioned such a species in his works; Risso found the name *arachnides* as a MS name by Lamarck in the collection of the Paris Museum. In Risso's manuscript there is a description of the species, which is slightly different from the published accounts:

« M[acropodia]. Arachnide Lam. M[acropodes]. Aracnides Lam. M[acropodia]. testa subtrigona, inæquali, glabra, postice spinosa, rostro brevi. v. Lam. col. du Mus. d'hist. naturelle de Paris.

Monsieur de Lamarck a distingué cette espèce de Macrope que je considerais comme une variété du précédent [= *Macropus parvirostris*]. Son test est presque triangulaire, un peu bombé sur le devant, un peu glabre, parsemé de quelques pointes sur les angles postérieurs. Son front est peu avancé presque arrondi. Les pinces sont grosses, grandes, presque lisses, les pattes longues effilées, parsemées de poils. La femelle porte des œufs d'un rouge pale en May.

Diment. Long. 0036 larg. 0016. Séjour. Dans les Cryptogames marines ».

The description given by Risso is quite meagre. The fact that he considered it a variety only of *Inachus dorsettensis* is an important indication. His statement that the rostrum is « peu avancé, presque arrondie » would fit well for *Inachus phalangium*, but not for any of the other European species of *Inachus* or *Macropodia*, in which the rostrum either ends in one or two sharp points and often is very long. The rest of the description does fit *Inachus phalangium* rather well, except for the measurements; carapace length 36 mm, carapace width 16 mm. As these measurements do not fit any spider crab, they must, at least partly, be erroneous.

All in all it seems most likely that *Macropus arachnides* is a synonym of *Inachus phalangium* (Fabr.), but see also under the next species.

Macropodia longirostris (Fabricius, 1775)

Macropus Longirostris-Risso, 1816 : 39.
Macropodes longirostris-Risso, 1827 : 27.
Macropus Longirostris-Hope, 1851 : 9.
Macropodia Longirostris Risso, Ms., description (c).

Risso's description of *Macropus* (or *Macropodes*) *longirostris* is such that it fits practically any *Macropodia*, and it is very likely that more than one species were confused by him under that name. Also his references to previous literature point in that direction. His manuscript description is very similar to the one published in 1816.

In a concept of a letter (Ms. d no. 20) to Polydore Roux, found among Risso's manuscript notes, he wrote: « Vous avez parfaitement raison [struck out and replaced by: Il y a aucun inconveniant] de rapporter mes Macropodes aux Macropus tenuirostris & phalangium de Leach. Le nom que je lui avais donné étoient ceux de la collection du Muséum de Paris ». At that time (cf. H. Milne Edwards, 1834: 279), the name *Macropodia phalangium* (sensu Leach) was used for *M. rostrata* (Linnaeus). As pointed out above, Risso's (1827) two species of *Macropodes* were *M. longirostris* and *M. arachnides*. If Risso's remark to Roux means that his *Macropus arachnides* is identical with *Macropodia rostrata*, than the interpretation given above is incorrect, and is also Risso's indication that the rostrum is « presque arrondi » erroneous.

For the time being it seems best to accept Risso's identification of *Macropus* (or *Macropodes*) *longirostris* with *Macropodia longirostris* (Fabr.) as correct and to consider his *Macropus arachnides* a synonym of *Inachus phalangium* (Fabr.).

Risso's (1816) variety of *Macropus Longirostris* is based only on colour.

Achaeus gordonae Forest & Zariquiey Alvarez, 1955 (pl. 6 fig. c)

Acheus gerbii Risso, 1844 : 94 (nomen nudum).
Achaeus Gerbe Hope, 1851 : 9 (nomen nudum).
Achaeus Gerbe Monod, 1931 : 123 (nomen nudum).
Achaeus Gerbe Risso, Ms., figure (f).

Among the manuscript notes of Risso's there is a figure of *Achaeus gordonae* with the legend *Achaeus Gerbe*. It shows the animal in dorsal view with a separate figure of the abdomen. The figure is accurate enough to recognize the specific identity of the animal. No descriptive notes on the species could be found in Risso's papers. The name *Acheus gerbii* has once been published by Risso himself, viz., in 1844 as a nomen nudum. Also Hope, who evidently had access to Risso's notes, listed the name *Achaeus Gerbe* in his list of Italian Crustacea, while Monod (1931) in his enumeration of Risso's manuscripts also mentioned the name. Neither Risso, nor Hope, nor Monod provided any information on the species so that in all three cases *Achaeus Gerbe* is a nomen nudum.

Crustacea Stomatopoda

Squilla mantis (Linnaeus, 1758)

Squilla Mantis-Risso, 1816 : 113.
Squilla mantis-Risso, 1827 : 85.
Squilla Mantis-Hope, 1851 : 20.

Risso published good descriptions of the present species. He left no manuscript notes on it.

Meiosquilla desmaresti (Risso, 1816)

Squilla Desmaresti Risso, 1816 : 114, pl. 2 fig. 8.
Squilla Desmaresti-Risso, 1827 : 86.
Squilla desmaresti-Risso, 1844 : 96.
Squilla Desmarestii-Hope, 1851 : 21.
Squilla maris Monod, 1931 : 133 (nomen nudum).
Squilla Mars Risso, Ms., description (h).

Meiosquilla desmaresti, better known as *Squilla desmaresti,* is a well known species and there has never been any doubt about its identity. In Risso's manuscript (h), dating from 1811, there is a description of *Squilla Mars,* which evidently is based on the present species:

« Cette belle Squille a le corps oblong, d'un marron clair, pointillé, et nuancé de jaune. Le corselet est convexe, silloné, sans épines. La tête est petite; les yeux pediculées, marbrés de gris, prunelle noire. Les pièces latérales sont linéaires, ciliées de rose. Les antennes extérieures sont longues, soyeuses, les premiers articles courts. Les extérieures [should be intérieures] ont trois filets, placés sur un long pédicule quadriarticulé. Les palpes sont comprimés, inégaux, terminés par un crochet aigu. Les pinces longues à six articulations inégales, comprimées, la dernière armée de cinq pointes subtiles en forme de peigne. Les pattes sont courtes, jaunâtres, poileuses à leur sommet. L'abdomen est convexe, arrondi, composé de dix segmens lisses et uni au milieu, ornés sur leurs bords latéraux de trois lignes rélévées longitudinales formant deux sillons de chaque côté. Les écailles caudales sont composées de trois pièces, les extérieures linéaires, et aiguillonées. Les intermédiaires solides à deux piquants presque égaux et les autres ciliées de rose. Plaque du milieu terminée en pointe sans aucune tache, armée sur ses bords de six grosses épines. Cette espèce parvient à 90 millimètres de longueur sur vingt de largeur. La femelle a les appendices plus larges ».

So far as I know the epithet *mars* has never been used in print for a stomatopod; only Monod (1931) used it in the spelling *maris.* It seems probable that the species was originally intended by Risso to be dedicated to his friend the lawyer Mars (see under *Peneus Mars,* Risso, 1816: 96).

Platysquilla eusebia (Risso, 1816)

Squilla Eusebia Risso, 1816 : 115.
Squilla eusebia-Risso, 1827 : 87, pl. 4 fig. 15.
Squilla eusebia-Risso, 1844 : 96.
Squilla Eusebia-Hope, 1851 : 21.
Squilla Eusebia Risso, Ms., listed (d no. 6).

As with the two other Stomatopods, there are no problems with the present species, which has been correctly recognized and accepted by all subsequent authors. In Risso's manuscript notes the name *Squilla eusebia* is only found in the MS of the explanation of the plates of Risso's 1827 paper.

4. NEW GENERA PROPOSED BY RISSO (PUBLISHED AND UNPUBLISHED)

Risso introduced 18 new generic names in his papers, 17 of these have been published, one was found only in his manuscripts. Of all these names only a single one, *Lysmata,* is accepted by modern authors, the others are either nomina nuda, junior homonyms or junior synonyms, or they are suppressed under the plenary powers of the International Commission on Zoological Nomenclature.

The 18 names are dealt with here under the valid name of the genus to which they belong.

Aristeus Duvernoy, 1840

Peratus Risso, Ms. This name, which has never been published by Risso, was intended by him for a group of three species: *Penaeus antennatus* Risso, 1816, *Sicyonia duvernoyi* Risso, Ms., and *Sicyonia genyani* Risso, Ms. The former two are synonyms of *Aristeus antennatus* (Risso, 1816), the third is *Funchalia woodwardi* Johnson, 1868. Risso's supposed new genus is discussed on p. 42 above. *Peratus* Mulsant & Verreaux, 1877, for a genus of birds, is not invalidated by Risso's manuscript name.

Gnathophyllum Latreille, 1819

Drimo Risso, 1827: 70. Type species, by monotypy: *Alpheus elegans* Risso, 1816. A junior objective synonym of *Gnathophyllum* Latreille, 1819. See p. 49 above. The names *Grimo* Risso, Ms., and *Doto* Risso, Ms., both are lapsus for *Drimo.*

Alpheus Fabricius, 1798

Autonomaea Risso, 1816: 166. Type species, by monotypy: *Autonomaea olivii* Risso, 1816 (= *Cancer glaber* Olivi, 1792). A junior subjective synonym of *Alpheus* Fabricius, 1798.

Nauplius Risso, 1844: 95. Type species, by present selection: *Nika variegata* Risso, 1816 (= *Alpheus dentipes* Guérin, 1832). A junior subjective synonym of *Alpheus* Fabricius, 1798, and a junior homonym of *Nauplius* O.F. Müller, 1776.

Ligur Sarato, 1885

Lybia Risso, 1844: 95. Type species, by monotypy: *Palemon ensiferus* Risso, 1816. A junior homonym of *Lybia* H. Milne Edwards, 1834 (Brachyura).

Lysmata Risso, 1816

Melicerta Risso, 1816: 109. Type species, selected by H. Milne Edwards, 1841, in: Cuvier, Règne Animal (ed. 3, discip. ed.) 18(15): pl. 54 fig. 3 (for *Lysmata*): *Melicerta seticaudata* Risso, 1816. A junior homonym of *Melicerta* Schrank, 1803 (Vermes).

Lysmata Risso, 1816: 175. A replacement name for the invalid *Melicerta* Risso, 1816.

Processa Leach, 1815

Thalassalpes (Risso, Ms) Bosc, 1813 : 233. Type species, selected by Holthuis, 1954, Bull. zool. Nomencl., 9: 335: *Nika edulis* Risso, 1816. A name suppressed under the plenary powers of the International Commission on Zoological Nomenclature in Opinion 434 (ICZN, 1956: 405).

The name *Thalassalpes* was used by Risso for the present genus in the original manuscript of his « His-

toire naturelle des Crustacés des environs de Nice » which he had submitted in 1812 to the Institut de France in Paris. A reference report on this manuscript was made to the Institut by L.A.G. Bosc. This report was published (Bosc, 1813) and in it several of Risso's generic names were mentioned with enough characters to make them available names. One of these names is *Thalassalpes,* of which no species were mentioned, but which, judging by Bosc's remarks, cannot be anything but the genus that Risso (1816) later named *Nika.* Therefore Holthuis (1954 b: 335) selected *Nika edulis* Risso to be the type species of *Thalassalpes. Thalassalpes* has been entirely overlooked or ignored by contemporary and subsequent authors (including Risso himself), and although it is the oldest available name for the genus, its reintroduction to replace the generic name *Processa* Leach, 1814, would cause a great confusion in nomenclature. For this reason the International Commission on Zoological Nomenclature decided to suppress this name, at the same time as it did the generic name *Gerbios* Bosc (see below).

Nika Risso, 1816: 84. Type species, selected by H. Milne Edwards, 1840, in Cuvier, Règne Animal, (ed. 3, discip. ed.) 18(14): pl. 52 fig. 1: *Nika edulis* Risso, 1816. A junior subjective synonym of *Processa* Leach, 1815. The generic name *Nika* Risso, although accepted by most authors in the previous century, had to give way to its older synonym *Processa* Leach, which is now in general use for the genus.

Parapandalus Borradaile, 1899

Nisea Risso, 1844: 95 (nomen nudum). Type species, by monotypy: *Nisea formosa* Risso, 1844: 95 (nomen nudum; = *Parapandalus narval* (Fabr.)). Both the generic name *Nisea* and the specific name *Nisea formosa* are nomina nuda and thus unavailable. *Nisea* de Serres, 1840, for a genus of Mollusca is not invalidated by *Nisea* Risso.

Pontocaris Bate, 1888

Egeon (Risso Ms) Bosc, 1813 : 233. Type species, by monotypy: *Cancer cataphractus* Olivi, 1792. A junior homonym of *Egeon* Montfort, 1808 (Protozoa).

The name *Egeon* as used by Risso in 1816 actually is not a new name but just a later usage of *Egeon* Bosc, 1813.

Upogebia Leach, 1814

Gerbios (Risso Ms) Bosc, 1813 : 233. Type species, by selection by Holthuis, 1954, Bull. zool. Nomencl., 9: 335: *Thalassina littoralis* Risso, 1816. The generic name *Gerbios,* being overlooked by practically all carcinologists, formed a threat to the generally accepted name *Upogebia* Leach, 1814, of which it is a senior subjective synonym. Therefore it was suppressed under the plenary powers of the International Commission on Zoological Nomenclature, in its Opinion 434 (ICZN, 1956: 405).

Callianassa Leach, 1814

Gebios Risso, 1822 : 243. Type species, by monotypy : *Gebios davianus* Risso, 1822: 243 (= *Callianassa tyrrhena* (Petagna, 1796)). A junior subjective synonym of *Callianassa* Leach, 1814.

Scyllarus Fabricius, 1775

Chrysoma Risso, 1827: 88. Type species, by monotypy: *Chrysoma mediterranea* Risso, 1827: 88 (= *Scyllarus arctus* (L.)). A junior subjective synonym of *Scyllarus* Fabricius, 1775; based on a larval stage.

Galathea Fabricius, 1793

Melia (Risso Ms) Bosc, 1813 : 233. Type species, selected by Holthuis, 1954, Bull. zool. Nomencl., 9: 33: *Cancer strigosus* Linnaeus, 1761. An objective junior synonym of *Galathea* Fabricius, 1793.

Calypso Risso, 1816 : 74. Type species, by monotypy : *Calypso periculosa* Risso, 1816 : 74 (= *Galathea strigosa* (L.)). A subjective junior synonym of *Galathea* Fabricius, 1793. See above, p. 60.

Janira Risso, 1816: 175. Replacement name for *Calypso* Risso, 1816. Junior subjective synonym of *Galathea* Fabricius, 1793, and junior homonym of *Janira* Leach, 1814 (Isopoda). See above, p. 60.

Potamon Savigny, 1816

Potamobius (Leach Ms) Risso, 1827 : 14. Type species, by monotypy: *Cancer fluviatilis* Herbst, 1785. A junior objective synonym of *Potamon* Savigny, 1816, and a junior homonym of *Potamobius* (Leach Ms) Samouelle, 1819 (Decapoda, Astacidae). See above, p. 69.

5. — LIST OF RISSO'S MANUSCRIPTS DEALING WITH DECAPOD AND STOMATOPOD CRUSTACEA

In the following list the eight manuscripts of Risso which contain information on Decapod and Stomatopod Crustacea are enumerated; they are indicated with the letters a to h, and under these letters (as Ms. a, Ms. b, etc.) they are referred to in the text of the present paper. All these manuscripts are rather extensively dealt with in Monod's (1931) paper. As Monod treated all of Risso's available manuscripts, his numbering of them of necessity had to be rather elaborate and is too cumbersome to be used in the present paper: our Ms. a to Ms. e are the manuscripts indicated by Monod as III E 1 a to III E 1 e respectively; our Ms. f is Monod's III E 2; our Ms. g is his I c; and our Ms. h is his IX 4.

a. A notebook (190 × 280 mm) of 10 pages, entitled « Enumeratio Crustaceorum in mari Nicaea observata ab A.R. », dating from after 1827, as the four Decapoda treated in it (*Cancer wagneri, Xantho sculptus, Calappa webbiana* and *Hippolyte carneus*) are not mentioned in Risso's 1827 paper. See Monod, 1931: 122, no. III E 1 a.

b. A notebook (125 × 175 mm) of 39 pages, entitled « Famille des Salicoques » dating from after 1827, and probably after 1840, containing descriptions of several species of shrimps. It is evidently unfinished as some pages carry only the name of a genus or species at the top, the rest of these pages being blank. Monod, 1931: 122, no. III E 1 b.

c. A notebook (230 × 340 mm) of 36 pages, entitled « Histoire naturelle des Crustacés des environs de Nice », being an incomplete manuscript of Risso's (1816) publication. The descriptions are practically the same as those published in 1816, some, through additions and deletions, are made more similar to those of Risso's 1827 paper. Monod, 1931: 122, no. III E 1 c.

d. A bundle of 42 miscellaneous pieces of various sizes (scribbles, drafts of letters, diagnoses, descriptions, lists, sketches, etc.), numbered by Dr. Monod as « pièce 1 », « pièce 2 » etc. In the present paper these pieces are indicated as Ms. d no. 1, Ms. d no. 2, etc. Monod, 1931: 122, no. III E 1 d.

e. Three pieces (6 pages in all) containing five attempts to list in various tabular forms the Natantia of the Nice area, indicating ordo (or legio), sectio, divisio, genus and species. In some of these tables characters of the divisions are indicated. These five lists are entitled « Familia Crustacea Salicoqui in mari Nicaeensi observavit ab A.R. », « [Nova] Distributio Crustaceorum Salicoqui in mari Nicaense observavit ab A.R. », or « Nouvelle distribution des genres & espèces de Crustacés Salicoques observés dans la Mer de Nice par A. Risso ». These lists evidently date from after 1827 as they contain species and genus names not included in Risso's (1827) book. Monod, 1931: 122, no. III E 1 e.

f. A hard cover notebook (200 × 250 mm) with 7 groups of coloured figures of Crustacea, the first five dealing with Decapoda: (1) Penaeidae (7 pls.), Stenopodidae (1 pl.) and Sergestidae (1 pl.); (2) Oplophoridae (2 pls.), and Pandalidae (4 pls.); (3) Palaemonidae (3 pls.), Hippolytidae (4 pls.), miscellaneous Caridea (2 pls.); (4) Nephropidae (1 pl.), Axiidae (1 pl.), Paguridae (2 pl.); (5) Brachyura (12 pls.). In the sixth cahier, dealing with Isopoda and Copepoda, a figure of *Callianassa tyrrhena* is entered by accident. Monod, 1931: 123, no. III E 2. Monod listed by name all the species shown on the illustrations. Many of these watercolours seem to have been painted by Philippe Gény, certainly those numbered by Monod (1931 : 123) as no. 5, 12, 14, 15, and 16, and most likely also those numbered 1, 3, 4, 6, 7, 10, 16-18, 20-22, 24 and 25.

g. A notebook (135 × 260 mm) of 60 pages entitled « Poissons, Crustacés, Radiaires & Vers observés depuis la publication de l'histoire naturelle des principales productions de l'Europe méridionale. Par A.R. 1840 ». In this manuscript the Crustacea occupy pp. 31-43; the five species of Decapoda are *Cancer wagneri* (p. 31), *Xantho sculptus* (p. 32), *Calappa webbiana* (p. 33), *Hippolytes incarnatus* (p. 34), and *Peneus genyanus* (p. 34 bis). Of each species a neatly written full description is provided. Monod, 1931: 106-107, no. Ic.

h. A notebook (250 × 200 mm) of 54 pages, entitled : « Premier mémoire zoologique sur différentes espèces d'êtres organisés, observés dans les environs de Nice. Par A. Risso, Membre associé de plusieurs Sociétés Savantes. 1811 ». This was intended as a precursor to Risso's 1816 publication, as shown by Risso's remark on p. 30 of this manuscript: « Dans l'histoire naturelle des Crustacés de nos mers que je me propose de publier... ». Crustacea are dealt with on pp. 29 to 44 (the Isopoda, pp. 38-44, are ranged under Insecta; only the Decapoda and Stomatopoda are here indicated as Crustacea and occupy pp. 29 to 37). Full and neatly written descriptions are provided of each species: *Portunus longipedes* (p. 30), *Dorippe triaculeatus* (p. 31), *Macropus parvirostris* (p. 32), *Palemon vedianti* and *P. oratelli* (both on p. 33), *P. sogiontii* (p. 34), *Squilla mars* (p. 35), *Peneus antennatus* (p. 36). Monod, 1931: 133, no. 4.

LITERATURE

ALDROVANDUS, U. (1606). — De Reliquis Animalibus exanguibus libri quatuor, post mortem eius editi: Nempe' de Mollibus, Crustaceis, Testaceis, et Zoophytis, pp. 1-593, figs.

BALSS, H. (1913). — Ueber fossile Galatheiden. *Centralbl. Mineral. Geol. Paläontol.*, 1913, pp. 155-160, fig. 1.

BARCELÓ Y COMBIS, F. (1875). — Catálogo de los Crustáceos marinos observados en las costas de las islas Baleares. In: Barceló y Combis, F., Apuntes para la fauna Balear. *An. Soc. Esp. Hist. nat.*, vol. 4, pp. 59-68.

BELON, P. (1553). — De aquatilibus, libri duo cum iconibus ad vivum ipsorum effigien, quoad eius fieri potuit, expressis, pp. 1-448, figs.

BELON, P. (1555). — La nature & diversité des poissons, avec leurs pourtraicts, representez au plus près du naturel, 38 pp., pp. 1-448, figs.

BOLIVAR, I. (1892). — Lista de la colleción de crustáceos de España y Portugal del Museo de Historia Natural de Madrid. *Act. Soc. Esp. Hist. nat.*, vol. 21, pp. 124-141.

BOLIVAR, I. (1916). — Los Crustáceos de las Baleares. *Bol. Soc. Esp. Hist. nat.*, vol. 16, pp. 246-253.

BOSC, L.A.G. (1813). — Essai historique sur les Crustacés de la mer de Nice, par M. Rizzo. (Extrait d'un rapport fait à l'Institut par M. Bosc). *Nouv. Bull. Sci. Soc. philom. Paris*, vol. 3, pp. 233, 234.

BOSCÁ SEYTRE, A. (1916). — Fauna Valenciana (en resumen). In: Carreras y Candi, F., Geografia general del Reino de Valencia, pp. 421-549, figs.

BOURGUIGNAT, M.J.R. (1861). — Etude synonymique sur les Mollusques des Alpes Maritimes publiés par A. Risso en 1826, pp. 1-84, frontisp., pl. 1.

BOUVIER, E.L. (1922). — Observations complémentaires sur les Crustacés décapodes (abstraction faite des Carides) provenant des campagnes de S.A.S. le Prince de Monaco. *Résult. Camp. sci. Monaco*, vol. 62, pp. 1-106, pls. 1-6.

BOUVIER, E.L. (1940). — Décapodes marcheurs. Faune de France, vol. 37, pp. 1-404, text-figs. 1-222, pls. 1-14.

BRÜNNICH, M.T. (1768). — Ichthyologia Massiliensis, sistens piscium descriptiones eorumque apud incolas nomina. Accedunt Spolia Maris Adriatici, 14 pp., pp. 1-110.

BUEN, O. de (1887). — Materiales para la fauna carcinológica de Espana. *An. Soc. Esp. Hist. nat.*, vol. 16, pp. 405-434.

BUEN, O. de (1916). — Los Crustáceos de Baleares. *Bol. Soc. Esp. Hist. nat.*, vol. 16, pp. 355-367.

BURKENROAD, M.D. (1936). — The Aristaeinae, Solenocerinae and pelagic Penaeinae of the Bingham Oceanographic Collection. Materials for a revision of the oceanic Penaeidae. *Bull. Bingham oceanogr.* Coll., vol. 5 pt. 2, pp. 1-151, figs. 1-71.

CARUS, J.V. (1885). — Coelenterata, Echinodermata, Vermes, Arthropoda. Prodromus faunae Mediterraneae sive descriptio animalium Maris Mediterranei incolarum quam comparata silva rerum quatenus innotuit adiectis locis et nominibus vulgaribus eorumque auctoribus in commodum zoologorum congessit, vol. 1, pp. i-xi, 1-524, addenda.

COCCO, A. (1832). — Su di alcuni nuovi crustacei de' mari di Messina. Lettera del dott. Anastasio Cocco al celebre dott. William Elford Leach uno de' conservatori del Museo Britannico in Londra. *Effem. sci. lett. Sicilia,* vol. 2, pp. 203-209, 1 pl.

COSTA, O.G. & A. (1838-1871). — Crostacei ed Aracnedi. Fauna del Regno di Napoli ossia enumerazione di tutti gli animali che abitano le diverse regioni di questo regno e le acque che le bagnano contenente la descrizione de nuovi o poco esattamente conosciuti, pp. 1-4, 1-8, 1-4, 1-8, 1-10, 1-12, 1-4, 1-8, 1-26, 1-2, 1-2, 1-8, 1-28, 1-14, 1-10, 1-2, 1-4, 1-4, 1-5, 1-8, 1-8, 1-2, 1-2, 1-6, 1-2, 1-4, 1-4, 1-6, 1-6, 1-6, 1-3, 1-4, 1-6, 1-12, 1-7, 1-4, 1-2, 1-6, 1-30, 31 pls.

DARBOUX, G. & STEPHAN, P. (1908). — Capture de Palinuriens longicornes dans le golfe de Marseille. *Feuilles jeun. Natural.,* vol. 38, pp. 16, 17.

DARLUC, M. (1786). — Histoire naturelle de la Provence, contenant ce qu'il y a de plus remarquable dans les Règnes Végétal, Minéral, Animal & la partie géoponique, vol. 3, pp. i, ii, 1-373.

DESMAREST, A.G. (1823). — Malacostracés. Dict. Sci. nat., vol. 28, pp. 138-425. Atlas, vol. 4, 58 pls.

DESMAREST, A.G. (1825). — Considérations générales sur la classe des Crustacés, et description des espèces de ces animaux, qui vivent dans la mer, sur les côtes ou dans les eaux douces de la France, pp. i-xix, 1-446, pls. 1-56, 5 tabs.

DESMAREST, A.G. (1826). — Potamobia. (Crust.). Dict. Sci. nat., vol. 43, p. 97.

DESMAREST, A.G. (1826). — Potamophile, Potamophilus (Crust.). Dict. Sci. nat., vol. 43, p. 97.

DESMAREST, A.G. (1830). — Bosc, L.A.G., Manuel de l'histoire naturelle des Crustacés, contenant leur description et leurs mœurs, ed. 2, vol. 2, pp. 1-306, pls. 1-18 bis.

DOHRN, P.F.R. & HOLTHUIS, L.B. (1950). — Lysmata nilita, a new species of prawn (Crustacea Decapoda) from the western Mediterranean. *Pubbl. Staz. zool. Napoli,* vol. 22, pp. 339-347, text-fig. 1, pls. 9, 10.

DRACH, P. & FOREST, J. (1953). — Description et répartition des Xantho des mers d'Europe. *Arch. Zool. expér. gén.*, vol. 90, pp. 1-35, figs. 1-24.

FABRICIUS, J.C. (1775). — Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus, pp. 1-832.

FOREST, J. (1955). — Crustacés Décapodes, Pagurides. *Rés. sci. Expéd. océanogr. Belge Atlantique Sud,* vol. 3, pt. 4, pp. 21-147, text-figs. 1-32, pls. 1-6.

FOREST, J. (1957). — Sur la validité et le nom des deux espèces d'Atelecyclus (Crustacea Decapoda Brachyura). *Bull. Mus. Hist. nat. Paris,* ser. 2, vol. 29, pp. 469-474, figs. 1, 2.

FOREST, J. (1958). — Sur la nomenclature des Pagures des mers Françaises. *Bull. Mus. Hist. nat. Paris,* ser. 2, vol. 30, pp. 94-100.

GÉNY, P. (1873). — Description morphologique d'une nouvelle espèce de Crustacé. *Ann. Soc. Lettres Sci. Arts Alpes-Maritimes,* vol. 2, pp. 162-164, pl. A fig. 2.

GLAESSNER, M.F. (1929). — Crustacea Decapoda. In: Pompeckj, J.F., Fossilium Catalogus I: Animalia, vol. 41, pp. 1-464.

HANSEN, H.J. (1922). — Crustacés décapodes (Sergestides) provenant des campagnes des yachts Hirondelle et Princesse-Alice (1885-1915). *Rés. camp. sci. Monaco,* vol. 64, pp. 1-232, pls. 1-11.

HELLER, C. (1863). — Die Crustaceen des südlichen Europa. Crustacea Podophthalmia. Mit einer Uebersicht über die horizontale Verbreitung sämmtlicher europäischer Arten, pp. i-xi, 1-336, pls. 1-10.

HOLTHUIS, L.B. (1947). — The Hippolytidae and Rhynchocinetidae collected by the Siboga and Snellius Expeditions with remarks on other species. The Decapoda of the Siboga Expedition. Part IX. Siboga Exped., mon. 39a8, pp. 1-100, figs. 1-15.

HOLTHUIS, L.B. (1947 a). — Nomenclatorial notes on European macrurous Crustacea Decapoda. *Zool. Meded. Leiden,* vol. 27, pp. 312-322, fig. 1.

HOLTHUIS, L.B. (1950). — Subfamily Palaemoninae. The Palaemonidae collected by the Siboga and Snellius Expeditions with remarks on other species. I. The Decapoda of the Siboga Expedition. Part X. Siboga Exped., mon. 39a9, pp. 1-268, figs. 1-52.

HOLTHUIS, L.B. (1951). — The Caridean Crustacea of tropical West Africa. *Atlantide Rep.,* vol. 2, pp. 7-187, figs. 1-34.

HOLTHUIS, L.B. (1954). — C.S. Rafinesque as a carcinologist, an annotated compilation of the information on Crustacea contained in the works of that author. *Zool. Verhand. Leiden,* no. 25, pp. 1-43, figs. 1-4.

HOLTHUIS, L.B. (1954 a). — The names of the European species of the genus Xantho Leach, 1814 (Crustacea Decapoda Brachyura). *Proc. Kon. Nederl. Akad. Wetensch.,* ser. C vol. 57, pp. 103-107.

HOLTHUIS, L.B. (1954 b). — Proposed use of the plenary powers to validate the generic names « Upogebia » Leach, 1814, and « Processa » Leach, 1815 (Class Crustacea, Order Decapoda). *Bull. zool. Nomencl.,* vol. 9, pp. 334-340.

HOLTHUIS, L.B. (1955). — The recent genera of the caridean and stenopodidean shrimps (Class Crustacea, order Decapoda, supersection Natantia) with keys for their determination. *Zool. Verhand. Leiden,* no. 26, pp. 1-157, figs. 1-105.

HOLTHUIS, L.B. (1961). — Report on a collection of Crustacea Decapoda and Stomatopoda from Turkey and the Balkans. *Zool. Verhand. Leiden,* no. 47, pp. 1-67, text-figs. 1-15, pls. 1, 2.

HOLTHUIS, L.B. & GOTTLIEB, E. (1956). — Two interesting crabs (Crustacea Decapoda, Brachyura) from Mersin Bay, S.E Turkey. *Zool. Meded. Leiden,* vol. 34, pp. 287-299, text-figs. 1, 2, pls. 4, 5.

HOLTHUIS, L.B. & GOTTLIEB, E. (1958). — An annotated list of the decapod Crustacea of the Mediterranean coast of Israel, with an appendix listing the Decapoda of the eastern Mediterranean. *Bull. Research Council Israel,* vol. 7 B, pp. 1-126, text-figs. 1-15, pls. 1-3.

HOPE, F.G. (1851). — Catalogo dei Crostacei Italiani e di molti altri del Mediterraneo, pp. 1-48, 1 pl.

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE (I.C.Z.N.), 1956. — Opinion 434. Use of the plenary powers to secure that the names Upogebia [Leach], [1814], and Processa Leach, [1815], shall be the oldest available names for the genera in question and that the family-group names based upon those generic names shall be the oldest available names for the family-group taxa concerned. Opin. Decl. Int. Comm. zool. Nomencl., vol. 14, pp. 403-424.

ICZN, (1958). — Opinion 507. Use of the plenary powers to secure that the generic name Panulirus White, 1847 (Class Crustacea, Order Decapoda) shall be the oldest available name for the genus concerned. Opin. Decl. Int. Comm. zool. Nomencl., vol. 18, pp. 197-210.

ICZN, (1958 a). — Opinion 522. Suppression under the plenary powers (i) of certain names published by C.S. Rafinesque for genera and species of the orders Decapoda and Stomatopoda (Class Crustacea) in the period 1814-1818 and (ii) of certain specific names currently regarded as senior subjective synonyms of the names of the type species of Homola Leach, 1815, and Lissa Leach, 1815, respectively both being genera assigned to the first of the foregoing orders. Opin. Decl. Int. Comm. zool. Nomencl., vol. 19, pp. 209-248.

ICZN, (1961). — Opinion 606. Dentipes (gen. Alpheus) Guérin, 1832 (Crustacea, Decapoda); validation under the plenary powers. *Bull. zool. Nomencl.*, vol. 18, pp. 258-259.

ICZN, (1961 a). — Opinion 611. Parapenaeus S.I. Smith, 1885 (Crustacea, Decapoda); validation under the plenary powers and interpretation of Peneus membranaceus Risso, 1816. *Bull. zool. Nomencl.*, vol. 18, pp. 306-311, pl. 4.

KEMP, S. (1910). — The Decapoda Natantia of the coasts of Ireland. *Sci. Invest. Fish. Br. Ireland,* 1908 pt. 1, pp. 3-190, pls. 1-23.

LATREILLE, P.A. (1816). — Les Crustacés, les Arachnides et les Insectes. In: G. Cuvier, Le règne animal distribué d'après son organisation, pour servir de base à l'histoire naturelle des animaux et d'introduction à l'anatomie comparée, ed. 1, vol. 3, pp. i-xxix, 1-653.

LATREILLE, P.A. (1819). — Salicoques, Carides, Latr. Nouveau Dictionnaire d'Histoire Naturelle, vol. 30, pp. 68-73.

LATREILLE, P.A. (1829). — Crustacés, Arachnides et partie des Insectes. In: G. Cuvier, Le règne animal distribué d'après son organisation, pour servir de base à l'histoire naturelle des animaux et d'introduction à l'anatomie comparée, ed. 2, vol. 4, pp. i-xxvii, 1-584.

LEACH, W.E. (1815-1875). — Malacostraca podophthalmata Britanniae; or descriptions of such British species of the Linnean genus Cancer as have their eyes elevated on footstalks, 124 pp., pls. 1-45.

LEBOUR, M.V. (1936). — Notes on the Plymouth Processa (Crustacea). *Proc. zool. Soc. London,* 1936, pp. 609-617, pls. 1-6.

LINNAEUS, C. (1758). — Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis, ed. 10, vol. 1, pp. 1-824.

LINNAEUS, C. (1767). — Systema naturae per regna tria naturae, secundum classes, ordines, genera, species, cum characteribus, differentiis, synonymis, locis, ed. 12 vol. 1, pp. 533-1327.

LO BIANCO, S. (1903). — Le pesche abissali eseguite da F.A. Krupp col yacht Puritan nelle adiacenze di Capri ed in altre località del Mediterraneo. *Mitt. zool. Stat. Neapel,* vol. 16, pp. 109-280, pls. 7-9.

LUCAS, H. (1838). — Nika, Nika. Dict. pittor. Hist. nat., vol. 6, pp. 57-58.

MILNE EDWARDS, H. (1834-1840). — Histoire naturelle des Crustacés, comprenant l'anatomie, la physiologie et la classification de ces animaux; vol. 1 (1834), pp. i-xxxv, 1-468; vol. 2 (1837), pp. 1-531; vol. 3 (1840), pp. i, ii, 1-638; atlas, pp. 1-32, pls. 1-42.

MONOD, Th. (1931). — Inventaire des manuscrits de Risso conservés à la bibliothèque du Muséum d'Histoire Naturelle. *Arch. Mus. Hist. nat. Paris,* ser. 6, vol. 7, pp. 103-133, figs. 1-10.

MONTICELLI, F.S. & LO BIANCO, S. (1902). — Su la probabile larva di Aristeus antennatus Risso. *Monit. zool. Ital.,* vol. 13, suppl., pp. 30, 31.

NATALE, G. de (1850). — Descrizione zoologica d'una nuova specie di Plojaria e di alcuni Crostacei del porto di Messina con poche considerazioni generali sulla natura delle appendici aculeiformi delle pianti e degli animali, pp. 1-31, appendix, pls. 1, 2.

NOUVEL, H. & HOLTHUIS, L.B. (1957). — Les Processidae (Crustacea Decapoda Natantia) des eaux européennes. *Zool. Verhand. Leiden,* no. 32, pp. 1-53, figs. 1-220.

OLIVI, G. (1792). — Zoologia Adriatica ossia catalogo ragionato degli animali del golfo e delle lagune di Venezia; preceduto da una dissertazione sulla storia fisica e naturale del golfo; e accompagnato da memorie, ed osservazioni di fisica, storia naturale ed economia, pp. 1-334, i-xxxii, pls. 1-9.

OSTROUMOFF, A. (1896). — Comptes-rendus des dragages et du plancton de l'expédition de « Selianik ». *Bull. Acad. Sci. Petersbourg,* ser. 5, vol. 5, pp. 33-92. In Russian.

OTTO, A.G. (1821). — Conspectus animalium quorundam maritimorum nondum editorum pars prior, pp. 1-20.

PESTA, O. (1913). — Kritik adriatischer Pisa-Arten aus dem Formenkreis armata-gibbsi-nodipes. *S.B. Akad. Wiss. Wien, mathem.-naturwiss. Kl.,* vol. 122, pp. 1213-1223, figs. 1, 2.

PESTA, O. (1918). — Die Decapodenfauna der Adria. Versuch einer Monographie, pp. i-x, 1-500, text-figs. 1-150, map 1.

PETAGNA, V. (1792). — Institutiones entomologicae, pp. i-xii, 1-718, pls. 1-10.

RAFINESQUE, C.S. (1814). — Précis des découvertes et travaux somiologiques de Mr. C. S. Rafinesque-Schmaltz entre 1800 et 1814. Ou choix raisonné de ses principales découvertes en zoologie et en botanique, pour servir d'introduction à ses ouvrages futurs, pp. 1-55.

RIGGIO, G. (1900). — Contributo allo carcinologia del Mediterraneo. (Sunto). *Monit. zool. Ital.,* vol. 11, suppl., pp. 19, 20.

RIGGIO, G. (1904, 1905). — Nota sopra alquanti Crostacei del mare di Messina. Contributo alla carcinologia del Mediterraneo. I. *Natural. Sicil.,* vol. 17, pp. 93-96, 117-120, 134-140 (1904); pp. 179-186, 208-216, 237-242, 254-263, 274-287, pls. 2, 4, 5 (1905).

RISSO, A. (1813). — See Bosc, L.A.G., 1813.

RISSO, A. (1816). — Histoire naturelle des Crustacés des environs de Nice, pp. 1-175, pls. 1-3.

RISSO, A. (1822). — Mémoire sur quelques nouveaux Crustacés observés dans la mer de Nice. *Journ. Phys. Chim. Hist. nat. Arts,* vol. 95, pp. 241-248.

RISSO, A. (1827). — Histoire naturelle des principales productions de l'Europe méridionale et particulièrement de celles des environs de Nice et les Alpes Maritimes, vol. 5, pp. i-vii, 1-403, [pls. 1-10], figs. 1-62.

RISSO, A. (1827 a). — Observations sur quelques nouvelles espèces de Crustacées de la mer de Nice. *Nova Acta Acad. Leop. Carol.,* vol. 13, pp. 817-822, pl. 42.

RISSO, A. (1841). — Nouveau guide du voyageur dans Nice et notices sur l'histoire civile et naturelle de cette ville, ed. 1. [Not seen].

RISSO, A. (1844). — Nouveau guide du voyageur dans Nice et notices sur l'histoire civile et naturelle de celle ville, ed. 2. Crustacés : pp. 93-99.

ROGER, E.J. (1938). — Quelques observations au sujet d'un Crustacé Décapode Macroure assez rare: Funchalia woodwardi Johnson. *Bull. Soc. zool. France,* vol. 63, pp. 23-32, figs. 1-4.

RONDELET, G. (1554). — Libri de piscibus marinis, in quibus verae piscium effigies expressae sunt. Quae in tota piscium historia contineantur, indicat elenchus pagina nona et decima, pp. 1-583, figs.

RONDELET, G. (1555). — Universae aquatilium historiae pars altera, cum veris ipsorum imaginibus, pp. 1-242, figs.

ROUX, P. (1828-1830). — Crustacés de la Méditerranée et de son littoral, pls. 1-45.

ROUX, P. (1831). — Mémoire sur la classification des Crustacés de la tribu des Salicoques, pp. 1-39.

SAMOUELLE, G. (1819). — The entomologist's useful compendium; or an introduction to the knowledge of British insects, comprising the best means of obtaining and preserving them, and a description of the apparatus generally used; together with the genera of Linné, and the modern method of arranging the classes Crustacea, Myriapoda, spiders, mites and insects, from their affinities and structure, according to the views of Dr. Leach. Also an explanation of the terms used in entomology; a calendar of the times of appearance and usual situations of near 3,000 species of British insects; with instructions for collecting and fitting up objects for the microscope, ed. 1, pp. 1-496, pls. 1-12.

SERÈNE, R. & ROMIMOHTARTO, K. (1969). — Observations on the species of Dorippe from the Indo-Malayan region. *Marine Res. Indonesia,* no. 9, pp. 1-35, text-figs. 1-29, pls. 1-6.

STEPHENSEN, K. (1923). — Decapoda-Macrura excl. Sergestidae. *Rep. Danish oceanogr. Exped. Mediterranean,* vol. 2, pt. D 3, pp. 1-85, figs. 1-27, maps 1-8.

TILESIUS G.G. à (1796). — Verzeichnis verschiedener Fische und Krebse des Adriatischen Meerbusens, pp. i-viii, 1-189.

VATOVA, A. (1928). — Compendio della flora e fauna del Mare Adriatico presso Rovigno con la distribuzione geografica delle specie bentoniche. *Mem. Com. Talassogr. Ital.,* vol. 143, pp.1-614, pls. 1-68.

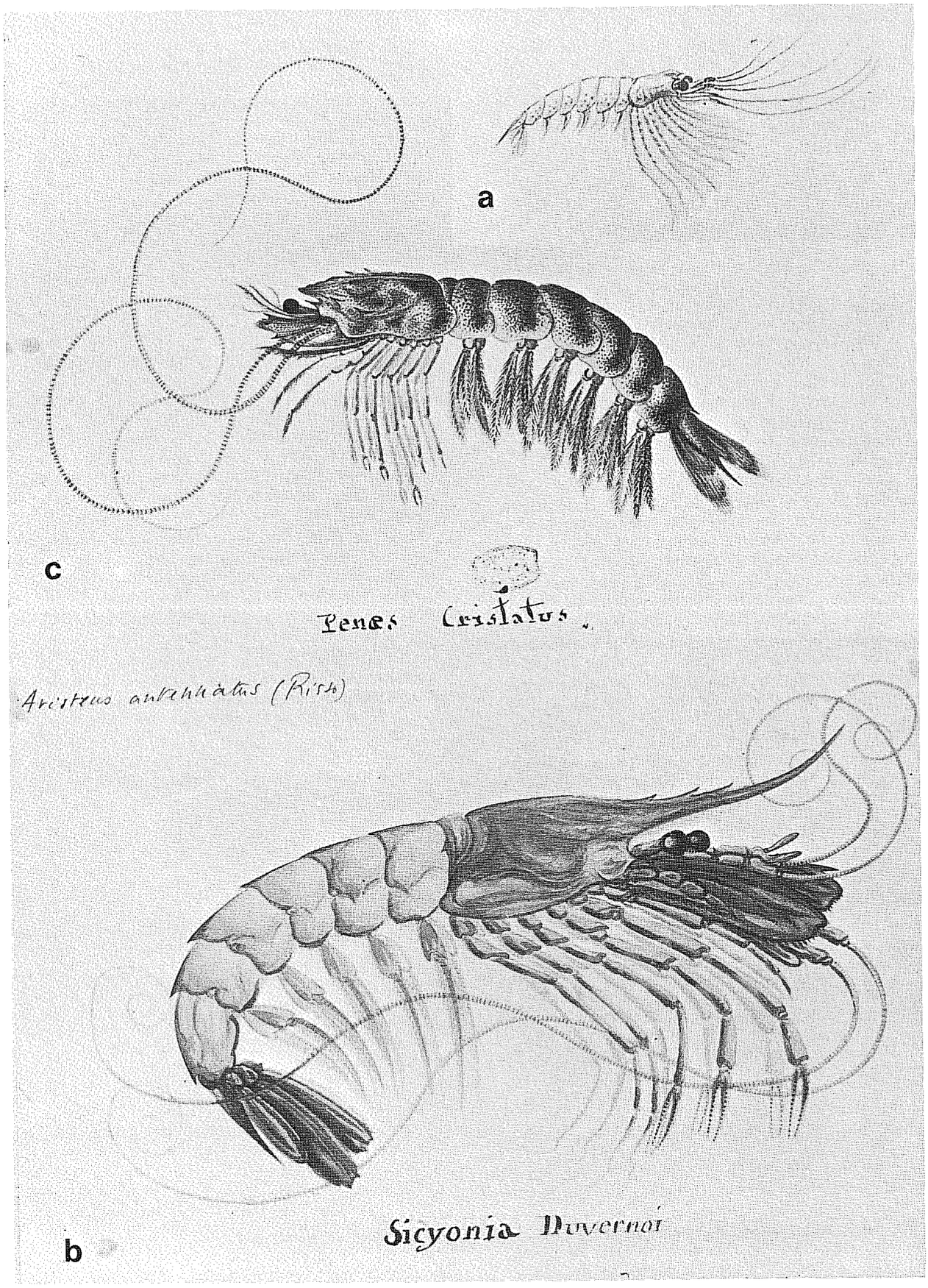
VERANYI, G.B. (1846). — Catalogo degli animali invertebrati marini del Golfo di Genova e Nizza, pp. 1-30, pls. 2-4.

VERANYI, G.B. (1862). — Zoologie des Alpes-Maritimes ou catalogue des animaux observés dans le département. In: J. Roux, Statistique générale du département des Alpes-Maritimes, pp. 1-102.

WHITE, A. (1847). — List of the specimens of Crustacea in the collection of the British Museum, pp. i-viii, 1-143.

ZARIQUIEY ALVAREZ, R. (1951). — Sobre el género Porcellana Lamarck, 1801. Decápodos españoles. IV. *Publ. Inst. Biol. apl. Barcelona,* vol. 9, pp. 131-139, figs. 1, 2.

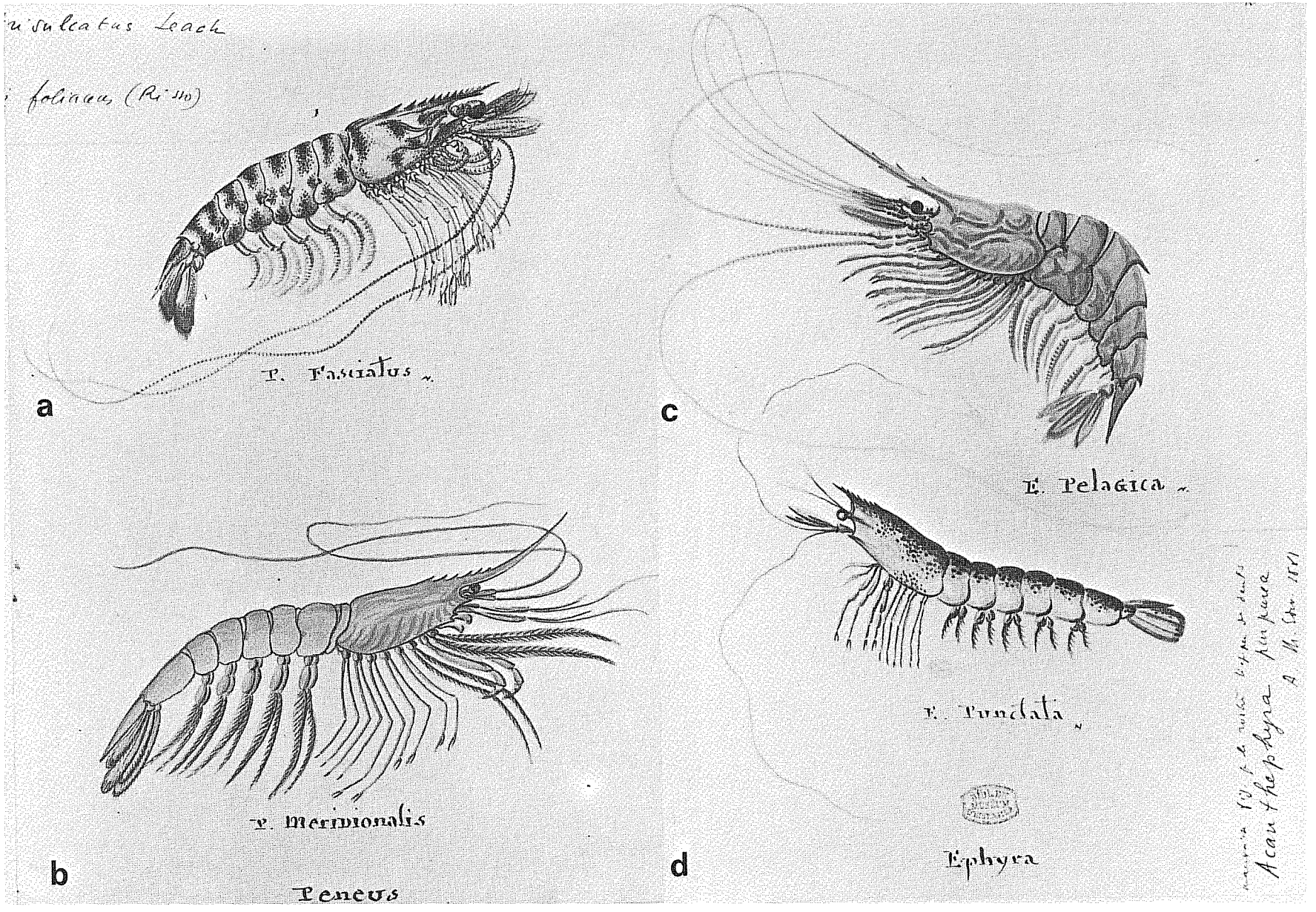
ZARIQUIEY ALVAREZ, R. (1968). — Crustáceos Decápodos Ibéricos. Invest. Pesqueras Barcelona, vol. 32, pp. i-xv, 1-510, figs. 1-164.



Pl. 1.

Figures in Risso's manuscripts

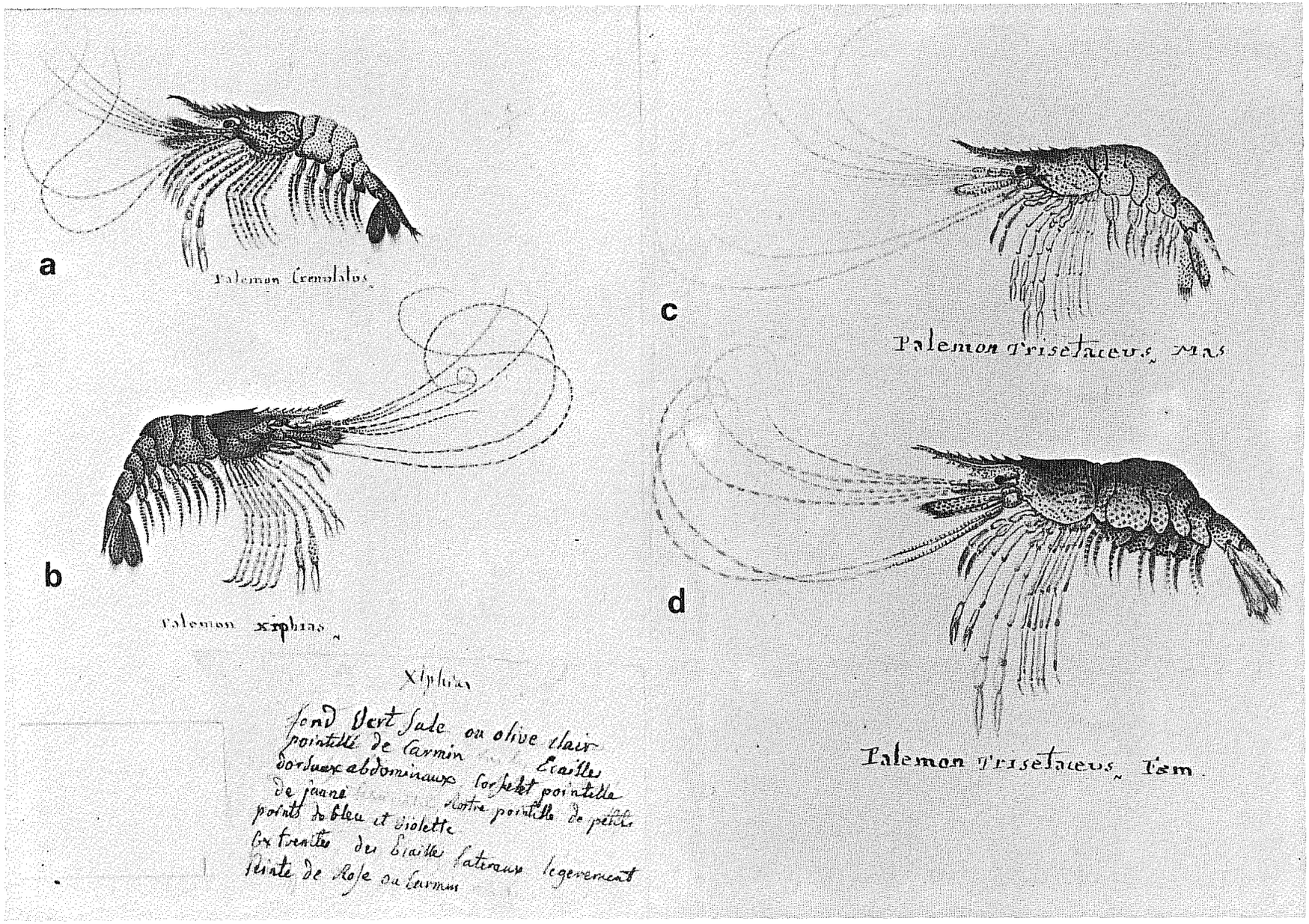
Fig. a, *Sergestes arcticus* Krøyer; b, *Aristeus antennatus* (Risso), as *Sicyonia duvernoi;* c, *Penaeus kerathurus* (Forskål), as *Penaes cristatus.*



Pl. 2

Figures in Risso's manuscripts

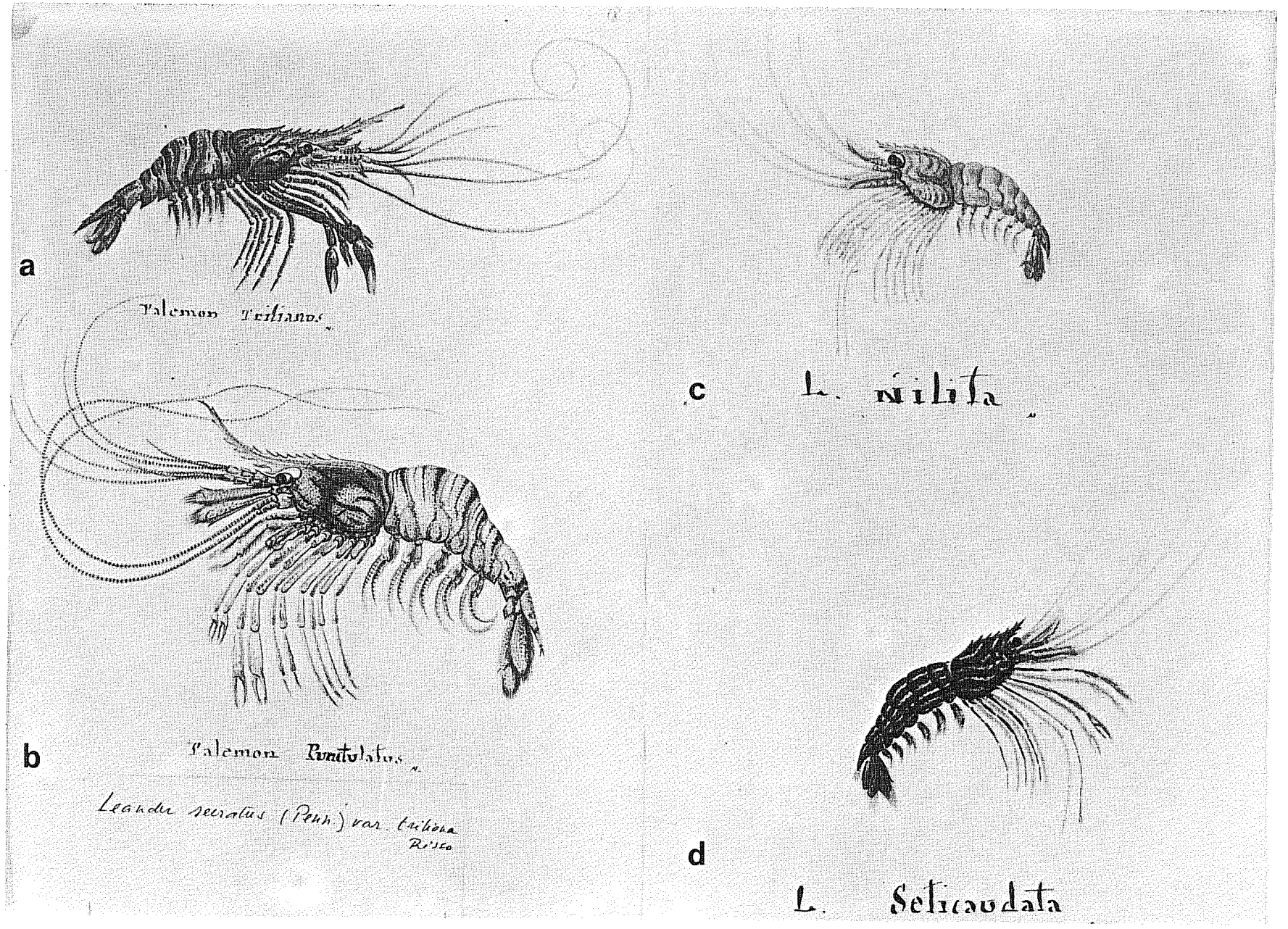
Fig. a, *Penaeus kerathurus* (Forskål), as *Peneus fasciatus;* b, *Aristaeomorpha foliacea* (Risso), as *Peneus meridionalis;* c, *Acanthephyra pelagica* (Risso), as *Ephyra pelagica;* d, *Penaeus kerathurus* (Forskål), as *Ephyra punctata.*



Pl. 3

Figures in Risso's manuscripts

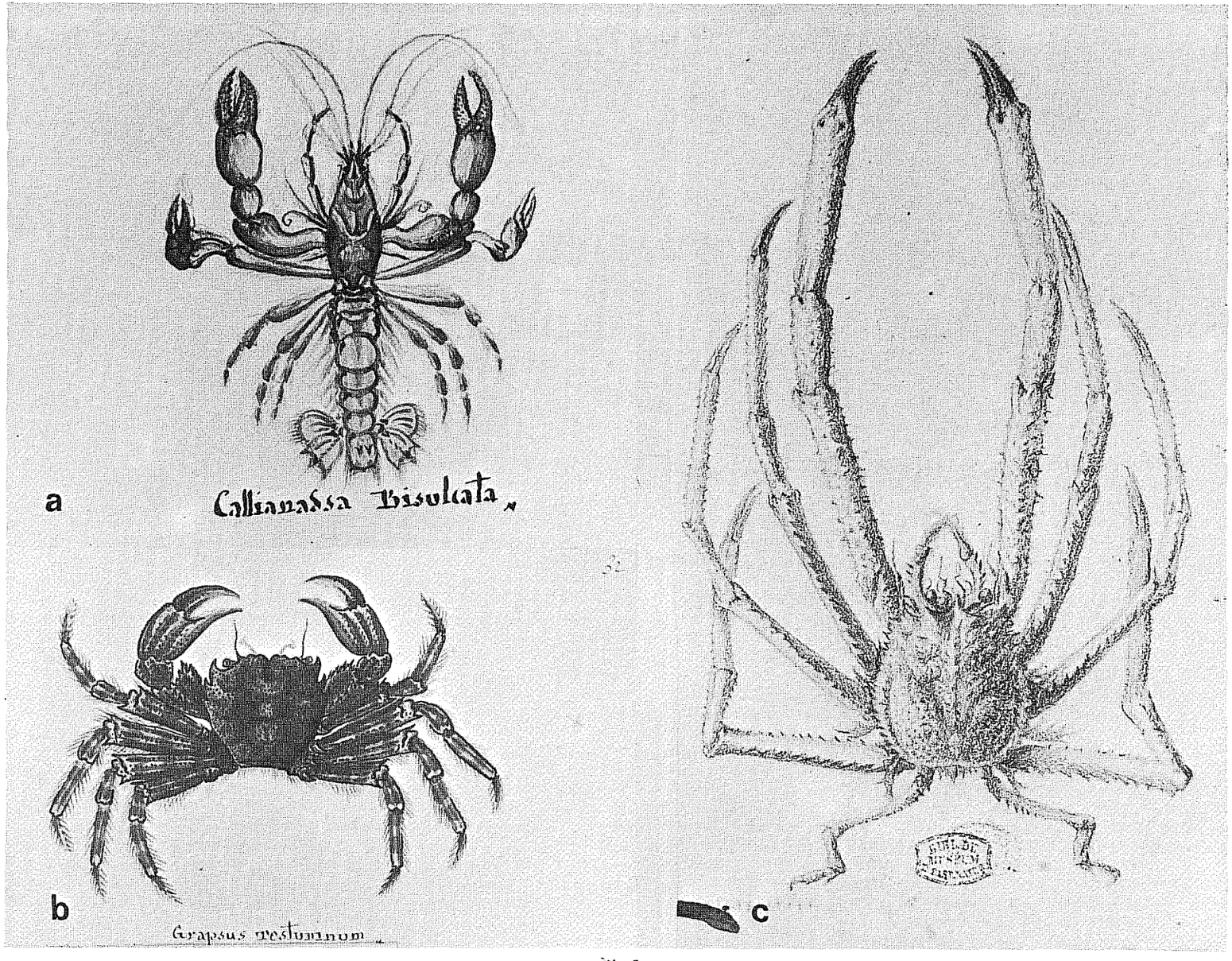
Fig. a-d, *Palaemon xiphias* Risso. a, as *Palemon crenulatus;* b, as *Palemon xiphias;* c, as *Palemon trisetaceus,* mas; d, as *Palemon trisetaceus,* faem.



Pl. 4

Figures in Risso's manuscripts

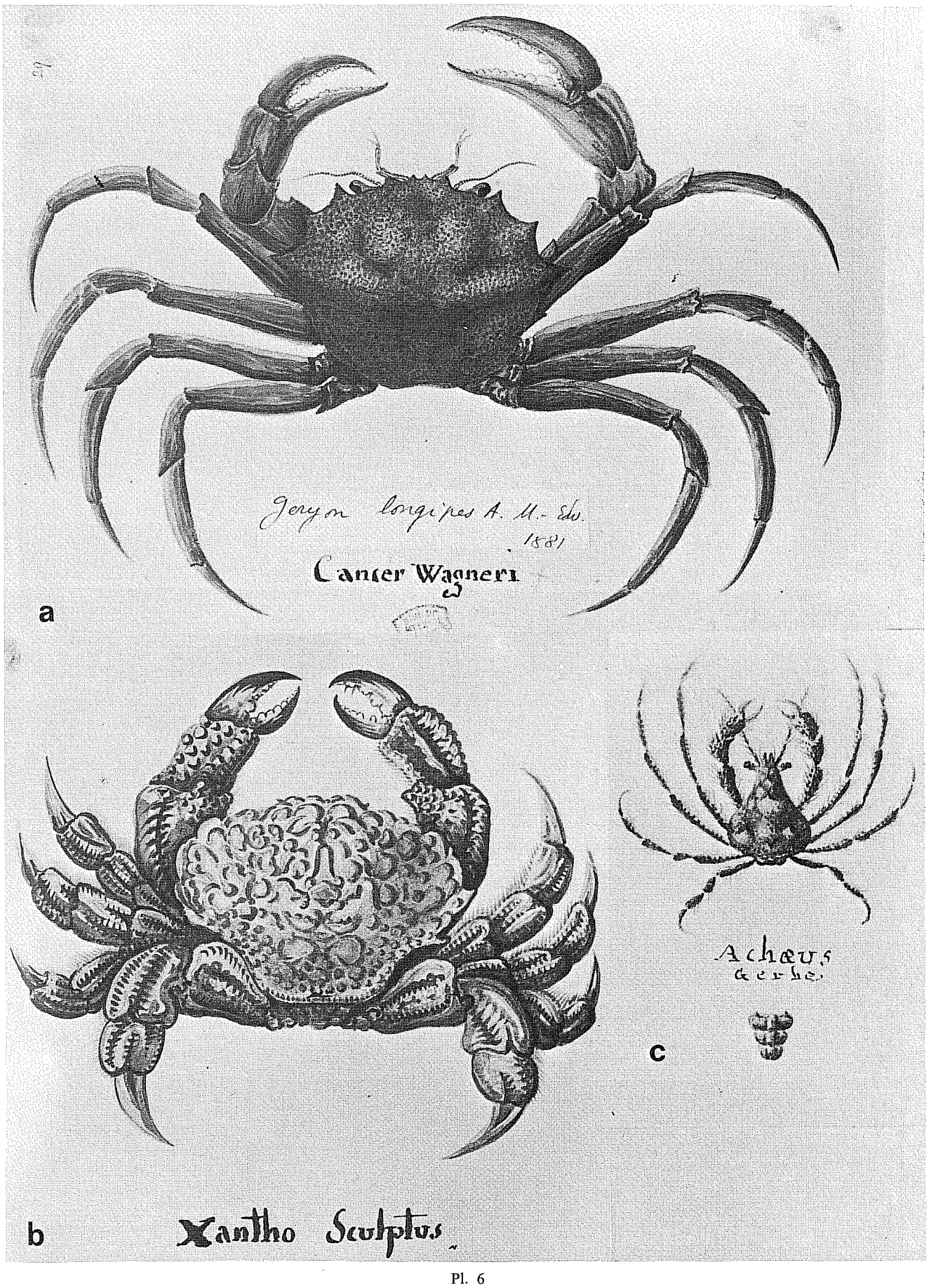
Fig. a, *Palaemon serratus* (Pennant), as *Palemon trilianus;* b, *Palaemon serratus* (Pennant), as *Palemon punctatus;* c, *Lysmata nilita* Dohrn et Holthuis; d, *Lysmata seticaudata* (Risso).



Pl. 5

Figures in Risso's manuscripts

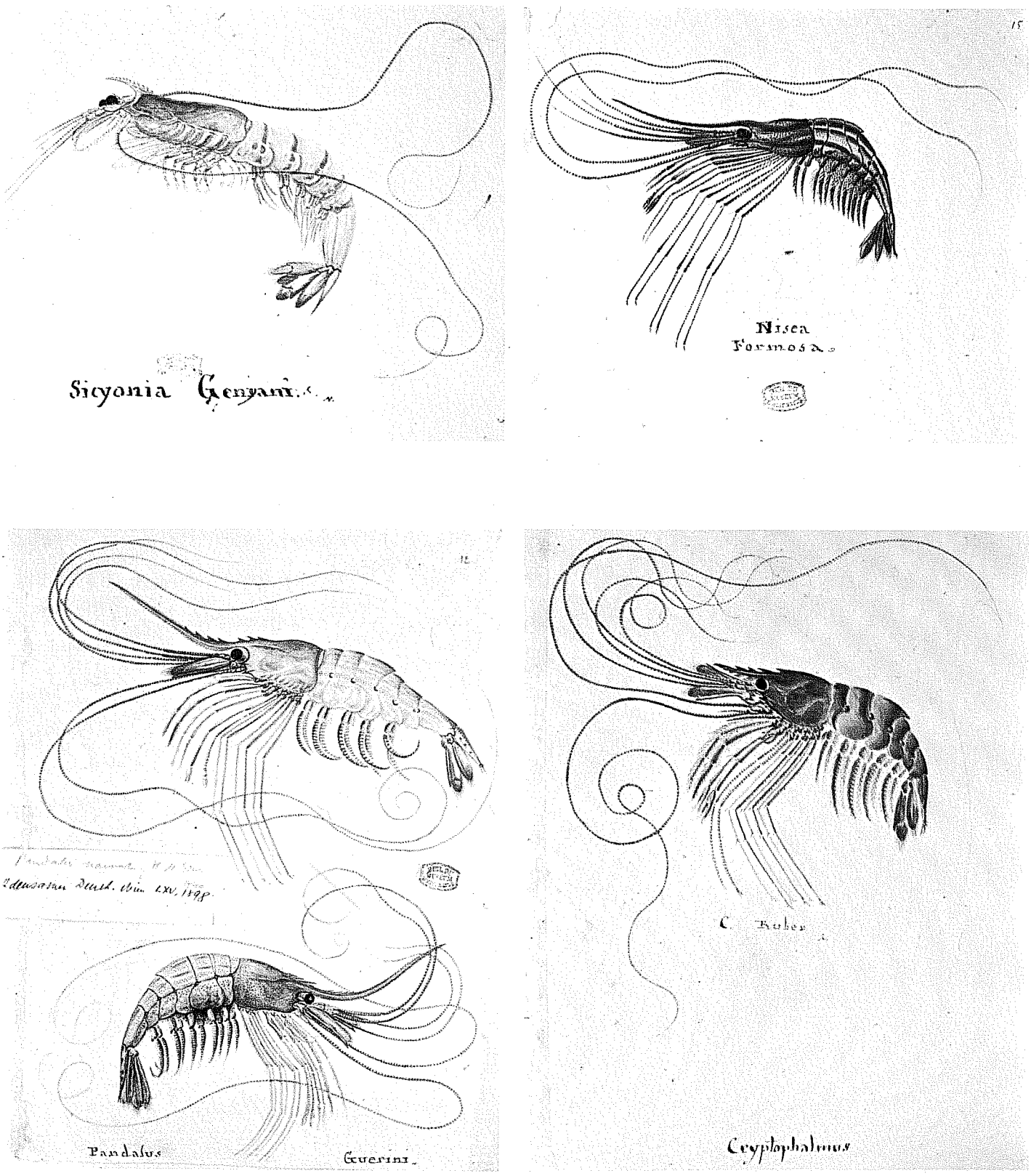
Fig. a, *Axius stirhynchus* Leach, as *Callianassa bisulcata;* b, *Euchirograpsus liguricus* H. Milne Edwards, as *Grapsus testudinum;* c, *Paromola cuvieri* (Risso).



Pl. 6

Figures in Risso's manuscripts

Fig. a, *Geryon longipes* A. Milne Edwards, as *Cancer wagneri;* b, *Zosimus aeneus* (L.), as *Xantho sculptus;* c, *Achaeus gordonae* Forest & Zariquiey, as *Achaeus gerbe.*



Pl. 7

Figures in Risso's manuscripts

Fig. a, *Funchalia woodwardi* Johnson, as *Sicyonia genyana;* b, *Plesionika edwardsii* (Brandt), as *Pandalus guerini;* c, *Parapandalus narval* (Fabricius), as *Nisea formosa;* d, *Ligur ensiferus* (Risso), as *Cryptophalmus ruber.*