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ERVÉ C.N.R.S. — RÉSER C.N.R

ande : 72 — Art. N° 127

Périodique : Brit. Ass. Adv. Sci 13: 130-193

B. E.

in Signalétique : R 255

ence : 1. Legakis — Zoologic Univ — Thessaloniki Grèce

Autours : Forbes E.

TOCOPIE SUR PAPIER

Titre de l'Article : Report on the Mollusca and Radiata of the Aegean Sea and on their distribution, considered as bearing on Geology.

PLANCHES, FIG.

Format approximatif 21 × 29,7

e pages : Bandes

Année	Tome	N° ou Mois	1re page	Dernière
1843	13		130	193

Fiche de travail à joindre au Bulletin de Commande

EN CAS DE RÉCLAMATION : REPORTER LE NUMÉRO DE COMMANDE DANS LE CADRE CI-DESSOUS, LE DÉTACHER ET L'ADRESSER AU
CHEF DU SERVICE PHOTOGRAPHIQUE - CENTRE DE DOCUMENTATION
26, rue BOYER - 75971 PARIS CEDEX 20

COMMANDE ENREGISTREE AU C.N.R.S. sous le N° ...... Art ......

X

Opérateur
Contrôle

MOTIF DE LA RECLAMATION EVENTUELLE:

NOMBRE DE PAGES — DATE DE LIVRAISON 11.73

064

Species.	Range.	Found living at	Ground.	Freq.	Geographical Distribution.
Lima, Brug.	fathoms.	fathoms.			
elongata, *Forb.*.....	55–140	55	nullipore, mud.	f.	
cuneata, *Forb.*	40	0	nullipore.	r.	
crassa, *Forb.*.....	70–150	0	nullipore, mud.	f.	
Pecten, Brug.					
jacobæus, *Lam.* ...	12–70	25	nullipore.	r.	Lus., Can.
dumasii, *Payr.*	70–150	0	nullipore, mud.	l.	
pes felis, *Lam.*	60–69	0	nullipore.	r.	
sulcatus, *Lam.*	7	0		l.	
opercularis, *Lin.* ...	10–70	31–55	nullipore, &c.	a.	Lus., Celt., N.
varius, *Lin.*	7–55	25–55	nullipore, &c.	f.	Lus., Celt., N.
pusio, *Lam.*	10–69	40	weed.	f.	Lus., Can.
polymorphus, *Bronn.*	8–69	28–41	weed, &c.	a.	Eux.
hyalinus, *Phil.*	6–60	6–40	sand.	a.	
testæ, *Bivon*.....	29–69	30–50	weed.	f.	
similis, *Laskey*	27–185	40–70	mud.	a.	Celt., North.
fenestratus, *Forb.*...	45–140	0	mud, nullipore.	f.	
concentricus, *Forb.*.	70–185	0	mud.	f.	
hoskynsii, *Forb.* ...	185–200	0	mud.	l.	
Spondylus, Lam.					
gadæropus, *Lin.* ...	½–14	1	rock.	l.	Can.
gussonii, *Costa*.....	105	105	nullipore.	r.	
Ostrea, Lin.					
plicatula, *Lin.*	lit.–30	lit.	rock, &c.	l.	
cochlea, *Poli*	60–110	0	nullipore.	r.	Can.
Anomia, Brug.					
ephippium, *Lin*.....	20–40	20	weed, &c.	l.	Lus., Celt., N.
polymorpha, *Phil*....	20–140	20–30	weed, &c.	l.	Lus., Celt., N.

Mollusca Tunicata.

Of the simple Ascidians seventeen species were met with. Five of them were Pelagic species, among which *Salpa maxima* and *S. democratica* were the most abundant, especially in the spring of the year, when great numbers of them approached the surface in fine weather in the afternoon. The remainder were fixed species, chiefly belonging to the genera *Phallusia*, *Ciona*, and *Cynthia*, some of which were found as deep as fifty-five fathoms; they were most abundant between twenty and forty fathoms, generally on weedy ground. A number of compound Ascidians were also met with in similar depths of water*.

Radiata.

Arachnodermata.

There are fifty-seven species of acalephous animals recorded as inhabitants of the Mediterranean sea; but few of these occur in the Ægean. Though

* The working out of the species procured of this difficult tribe and of some of the radiate families, especially the smaller Zoophytes, demands more disposable time than the reporter's professional avocations (at present) permit; he is constrained therefore reluctantly to give only a general sketch in these departments, hoping at some future meeting to present supplementary details.

continually on the look-out for these beautiful creatures only fifteen species were met with, mostly described forms. The sheltered bays of Asia Minor and the squally seas of the Cyclades were alike unprolific; twice only were considerable numbers met with; once in the Gulf of Scopæa, where during the winter months great numbers of *Aurelia*, most species of which genus are gregarious, assembled, and once in the bay of Smyrna, where the presence of gigantic *Rhizostomæ* afforded full occupation for several days, in September 1842. In neither case were the individuals widely spread, but confined to a limited space. Besides the two species named, six other members of the order *Pulmograda* were met with in the months of July, August and December. Of the *Ciliograda*, the *Beroe forskälii* was taken in May 1841, off the island of Milo, and in company with it a single example of the *Cestum veneris*. A few days after a *Cydippe* was seen, but not taken, in the bay of Syra. Of the *Physograda*, several examples of a large *Stephanomia* were met with in the Gulf of Macri, in December, where they were seen floating a few feet below the surface, about 3 p.m. on sunny days. Of the *Diphydæ* occasional individuals were seen, probably species of *Calpe* or *Pyramis*. Of the *Cirrhigrada*, *Velella spirans* was collected by Lieut. Spratt on the shore at Rhodes, in December 1842, and *Porpita glandifera* occurred once on the sandy shore between Patara and the mouth of the Xanthus in February 1842.

We must attribute the great abundance of *Medusæ* in the western Mediterranean, as compared with their scarcity in the eastern, to the oceanic influence in the former. They abound near the gut of Gibraltar, a locality prolific in species as well as individuals. Their numbers decrease as we approach the shores of Greece. In the Ægean, as we have seen, they play an unimportant part. The few gregarious species extend their range to the Black Sea, where great herds of *Aureliæ* are not unfrequently met with. Pelagic as these animals are, there is reason to believe that the range of the species is extremely limited, and that they afford a valuable means of defining zoological provinces in the open sea.

Arachnodermata.

	No. of Ægean Sp.	No. of Medit. Sp.	Date when taken.	Locality.
PULMOGRADA.	8	29		
Rhizostoma, Cuv.	1	1		
cuvieri?, *Eschs*.....	.....	.....	Sept. 1842.	Bay of Smyrna.
Cephea, Peron	1	1		
tuberculata, *Macri*. .	.....	8	Aug., Sept., Nov. 1842.	Cyclades, Sporades, Cervi.
Occania, Peron	1			
cruciata, *Forsk*.....	.....	.....	July, 1841.	Serpho Bay.
Thaumantias.....	1	1		
laxa, *Forb*.....	.....	.....	Aug. 1841.	Off Milo.
Aurelia, Peron	1	4		
granulata?, *Lam.* ...	.....	.....	Dec. 1841.	Gulf of Scopæa, Caria.
Geryonia, Peron	2	2		
nov. sp.?	.....	.....	Aug. 1841.	Bay of Cervi.
proboscidalis, *Forsk.*	.....	.....	Dec. 1841.	Gulf of Macri.
Mesonema, Eschs.	1	5		
cœlum pensile, *Mod.*	.....	.....	May 1841.	Off Milo.

	No. of Ægean Sp.	No. of Medit. Sp.	Date when taken.	Locality.
CIRRHIGRADA.	2	2		
Velella, Lam.....	1	1		
spirans, *Forsk.*	.....	.....	Dec. 1841.	Rhodes.
Porpita, Lam.	1	1		
glandifera, *Lam*.....	.....	.....	Feb. 1842.	Lycia.
PHYSOGRADA.	1	7		
Stephanomia, Peron ...	1	2		
contorta?, *M. Ed*....	.....	.....	Dec. 1841.	Gulf of Macri.
CILIOGRADA.	3	6		
Beroë, Mul.	1	1		
forskalii, *M. Ed.*	.....	.....	May, 1841.	Off Milo.
Cestum, Le Sueur.....	1	1		
veneris, *Le Sueur* ...	.....	.....	May, 1841.	Off Milo.
Cydippe, Eschs	1	1		
sp.	.....	.....	May, 1841.	Syra.
DIPHYDÆ.	2	9		
Pyramis, Otto	1	1		
tetragona, *Otto*	.....	.....	various.	Throughout.
Calpe, Quoy & Gaim...	1	1		
pentagona, *Quoy & G.*	.....	.....	various.	Throughout.

Echinodermata.

Crinoidea.—The only crinoid animal inhabiting the Ægean is the common European *Comatula* (*C. rosacea*), identical in every respect with the northern examples of the species. It is local, and lives on weedy ground in from 20 to 30 fathoms water. I met it only among the Cyclades. In no instance was it found in the young or *Phytocrinus* state.

Ophiuridæ.—Eleven species of *Ophiuridæ* inhabit the Ægean, ranging from the surface to the greatest depths explored. Four of the Ægean species are identical with northern forms; viz. *Ophiura texturata* and *albida*, *Amphiura neglecta* and *Ophiothrix rosula*. They are all found in habitats similar to those in which they occur in the British seas. The last-named species is invariably smaller than northern individuals. Five, viz. *Pectinura vestita*, *Ophiura abyssicola*, *Ophiomyxa lubrica*, *Ophiopsila aranea*, and *Amphiura neglecta*, are entirely new species. Three of these new forms were found only in very deep water 100 fathoms and under, one of them, the second named, having been taken alive in 200 fathoms. One of the Ægean *Ophiuridæ* is an instance of a most extensive range, being found in all muddy bottoms between 7 and 180 fathoms, the specimens from the greatest depths exactly resembling those from the shallows.

The Euryale has not as yet been found in the eastern Mediterranean; it inhabits the Eastern and the Adriatic. Deducting synonyms from previous enumerations of the Mediterranean *Ophiuridæ* proper, my list exceeds by four species all former catalogues.

Asteriadæ.—Thirteen species of *Asteriadæ* inhabit the Ægean; of these,

seven do not range deeper than ten fathoms. A Goniaster and an Asterina were the species met with in deepest water, the first coming up from 60 fathoms off Cnidus, the second ranging from 20 to 70 fathoms. Four species were identical with Celtic forms, one of them being the *Uraster glacialis*, which ranges northward to the shores of Greenland. The northern seas greatly exceed the Mediterranean in the number of species and abundance of individuals of this order. Out of the small number of *Asteriadæ* which were taken in the Ægean, one half the number occurred only as single specimens.

Echinidæ.—The extreme abundance of *Echinus lividus*, which lines the rocks a little below water-mark in most parts of the Mediterranean, is a characteristic feature of that sea. Otherwise (especially in the Ægean) *Echinidæ* are not extensively represented. The true *esculentus* has a wide range in the eastern Mediterranean, extending from Cerigo to Asia Minor, but individuals are very scarce. A small species (*E. monilis*) is abundant on nullipore ground at all depths between 15 and 100 fathoms. *Spatangi* are very rare: a few examples occurred in the sandy shores, and fragments were dredged as deep as 150 fathoms. *Spatangus purpureus*, identical with the British species, is extremely scarce in the Ægean, but more frequent, and attaining a large size in the Sicilian seas. The Mediterranean *Cidaris* is very characteristic of this sea: its spines are frequently taken, and sometimes the living animal, which dwells on coral ground, mostly in from 60 to 70 fathoms. It would appear to be gregarious.

Holothuriadæ.—The number of Ægean *Holothuriadæ* is seven, of which four belong to the typical genus of the family, the species of which are very characteristic of the Mediterranean. They all live in shallow water, attain to large size, and usually occur in great numbers. The only Celtic species observed was the *Cucumaria pentactes*, dredged in 11 fathoms off the mouth of the Hermus, and exactly resembling specimens taken in similar situations on the British coast. The *Holothuriadæ* are much more numerous in the western Mediterranean. Mud and sand are their most usual habitats.

Sipunculidæ.—Out of six Ægean species of this family, three inhabit crevices of the rocks near water-mark, two live among fuci in a muddy bottom, and one (*Syrinx nudus*), the only one which is common to the Egean and Celtic seas, is found on sand. The rock-inhabiting species are frequent, the others rare. There is no diminution in the number of individuals or their size as we travel eastwards.

Echinodermata.

Species.	Ægean.	Medit.	Ground.	Depth.	Geog. Distrib.
CRINOIDEA.				fathoms.	
Comatula, Lam.	1	1			
rosacea, *Link*	....	....	weedy.	20–30	Celtic seas.
OPHIURIDÆ.					
Pectinura, Forb.	1	1			
vestita, *Forb.*.....	....	....	nullipore.	100	
Ophiura, Lam.....	3	3			
texturata, *Lam.*.....	....	....	weedy.	28	
albida, *Forb.*.....	....	....	sand, weed.	5–50	Celt. & North.
abyssicola, *Forb.*	....	....	white mud.	100–200	British seas.
Ophioderma, Mul. & Tros.	1	2			
lacertosa, *Lam.*.....	....	....	weedy, mud.	10–30	Can.

Species.	Ægean.	Medit.	Ground.	Depth.	Geog. Distrib.
				fathoms.	
OPHIURIDÆ.					
Ophiomyxa, Mul. & Tros.	1	1			
lubrica, *Forb.*	....	....	weedy.	10–20	
Ophiopsila, Forb.....	1	1			
aranea, *Forb.*.....	....	....	weedy.	20–50	
Amphiura, Forb.	3	5?			
florifera, *Forb.*	....	....	mud.	100	
neglecta, *Johnst.*	....	....	weedy.	20–30	North. & Celt.
chiagii, *Forb.*.....	....	....	mud.	7–180	
Ophiothrix, Mul. & Tros.	1	1?			
rosula, *Forb.*.....	....	....	weedy.	20–30	North. & Celt. [Can.
ASTERIADÆ.					
Uraster, Ag.	1	3			
glacialis, *Lin.*	....	....	rock.	½	North. & Celt.
Ophidiaster, Ag.	1				
lævigata, *Lam.*	....	....	rock.	lit.	
Cribrella, Ag.	1				
seposita, *Lam.*	....	....	weedy.	20–30	
Goniaster, Agass.....	1	1			
sp.	....	....	nullipore.	60	
Asterina, Nardo.....	3	3			
sp.	....	....	rock.	lit.	
sp.	....	....	nullipore.	20–70	
sp.	....	....	sand & zost.	10–20	
Luidia, Forb.....	1	1			
sp.	....	....	mud.	20	
Asterias, Lin.....	3	4			
sp.	....	....	sand.	½–8	
sp.	....	....	sand.	½–8	
sp.	....	....	mud.	5	
sp.	....	....	mud.	3	
Palmipes, Link.....	1	1			
membranaceus, *Retz* ..	....	....	.....	30	North. & Celt.
ECHINIDÆ.					
Cidaris, Leske	1	1			
histrix, *Lam.*.....	....	....	nullipore.	55–105	
Echinus, Lin.	3	7			
esculentus, *Lin.*.....	....	....	weedy.	7–40	Bay of Biscay,
lividus, *Lam.*.....	....	....	rock.	lit.	[Ireland.
monilis, *Def.*.....	....	....	nullipore.	15–105	
Echinocyamus, Leske ..	1	1			Celt. & North
pusillus, *Mul.*	....	....	nullipore.	8–200	[seas.
Spatangus, Klein	2	3?			Atlantic.
purpureus, *Mul.*.....	....	....	weedy.	20	
Amphidetus, Ag.	1	2?			
mediterraneus, *Forb.*..	....	....	sand.	20–30	
Brissus, Klein	2	2 or 3			
atropos?, *Lam.*.....	....	....	weedy.	20–30	
sp. und.....	....	....	mud, nul.	60–130	

Species.	Ægean.	Medit.	Ground.	Depth.	Geog. Distrib.
HOLOTHURIADÆ.				fathoms.	
Holothuria, Lin.	4	6?			
tremula, *Lin.*.....	....	....	sand.	1	
sp.	....	....	weed.	3	
sp.	....	....	rock.	$\frac{1}{2}$	
sp.	....	....	rock, weed.	$\frac{1}{2}$	
Cucumaria, Blainv.	1	?			
pentactes, *Mul.*.....	....	....	mud.	11	Celt. & North [seas.
Oenus, Forb.....	1	?			
sp.	....	....	rocky.	$\frac{1}{2}$	
Chirodota, Eschs.....	1	4?			
sp.	....	....	mud.	6–11	
SIPUNCULIDÆ.					
Syrinx, Bohadsch.		?			
nudus, *Lin.*	1	2	sand.	lit. $\frac{1}{2}$.	Celtic, Lus.
sp.	....	....	rocky.	lit.	
Sipunculus, Lin.	3	?			
sp.	....	.. ..	weedy.	0–8	
sp.	....	....	weeds.	2–3	
sp.....	....	....	rock.	lit.	
Bonellia.	1	1?			
sp.	....	....	rock.	lit.	

Zoophyta.

Zoophytes are, on the whole, scarce in the Ægean. They seem to suffer the same diminishing influence as to size with the Mollusca, very numerous minute specimens occurring of *Corallium rubrum*, for instance, but none being met with of sufficient size as to render them of value in commerce. Corallines are scarce, a very few species only being common, among others *Farcimia fistulosa*. *Flustræ* are very rare; incrusting corallines frequent. The only corals met with of any size were *Cladocora cæspitosa* and *Porites dædalea*. The former is extremely abundant near water-mark on the coast of Asia Minor, where it forms elegant cauliflower-like patches of bright orange, from the hue of the animals, adhering to the rocks. The latter is rare, and was dredged alive in about 12 fathoms in the Bay of Serpho.

Among the soft Zoophytes there are several beautiful and curious species inhabiting the Ægean. In all six species were met with, of which one, the *Edwardsia vestita*, was remarkable for living in a tube of its own construction, formed of gravel and shells; and another for living entirely on the surface of the ocean, where it was frequently met with swimming during the winter months.

Alcyonia were not uncommon, but no species of *Pennatula* was met with, nor of *Gorgonia**.

The range of Zoophytes is very great in the Ægean, extending nearly to the greatest depths explored. A beautiful little waxy green *Idmonea?* was characteristic of depths below 100 fathoms, extending to 180. *Caryophyllia* (*cyathus*) ranged from 5 to 90 fathoms. *Hornera* at 40. *Plumulariæ* ranged to 40. *Myriapora truncata* was found as deep as 70 fathoms alive. *Tubu-*

* Two species of *Pennatula* have since been procured in abundance off the mouth of the Hermus in 7 fathoms, by Lieut. Spratt.

lipora serpens in 20 to 40 fathoms. *Retepora* abundant between 15 and 30. *Alecto* incrusting shells in 150 fathoms. Four species of coral were taken, though dead, at 105 fathoms. *Eudendrium* was found at 20 fathoms. *Valkeria* and *Campanularia* at 30. *Crisia* at 20. *Actinia* ranged from the surface to 20 fathoms. *Alcyonium* as deep as 70.

Amorphozoa.

Sponges abound in the Ægean, inhabiting all depths of water between sea-mark, where the rocks are often of a brilliant scarlet with incrusting species, to nearly 200 fathoms, a sponge allied to *Grantia* having been dredged alive at 180 fathoms, and a small species of another genus at 185. The sponge of commerce is procured by divers from rocks in various depths between 7 and 30 fathoms. Most of the larger species are found at lesser depths, very large ones occurring in the second zone or region. The forms of the species do not appear to bear any relation to the depth in which they are found, tubular sponges, globular, incrusting and palmate species all inhabiting the littoral zone. I met with about twenty species of *Amorphozoa* in the eastern Mediterranean.

The distribution of marine animals is determined by three great primary influences, and modified by several secondary or local ones. The primary influences are climate, sea-composition and depth, corresponding to the three great primary influences which determine the distribution of land animals, namely climate, mineral structure and elevation. The first of these primary marine influences is uniform in the eastern Mediterranean. From Candia to Lycia, from Thessaly to Egypt, we find the same species of Mollusca and Radiata assembled together under similar circumstances. The uniformity of distribution throughout the Mediterranean is very surprising to a British naturalist, accustomed as we are to find distinct species of the same genera, *climatally representative* of each other, in the Irish and North seas, and on the shores of Devon and Zetland. The absence of certain species in the Ægean which are characteristic of the western Mediterranean, is rather to be attributed to sea-composition than to climate. The pouring in of the waters of the Black Sea must influence the fauna of the Ægean and modify the constitution of its waters. To such cause we must attribute the remarkable fact, that with few exceptions individuals of the same species are dwarfish compared with their analogues in the western Mediterranean. This is seen most remarkably in some of the more abundant species, such as *Pecten opercularis*, *Venerupis irus*, *Venus fasciata*, *Cardita trapezia*, *Modiola barbata*, and the various kinds of *Bulla*, *Rissoa*, *Fusus*, and *Pleurotoma*, all of which seemed as if they were but miniature representatives of their more western brethren.

To the same cause may probably be attributed the paucity of *Medusæ* and of corals and corallines. Sponges only seem to gain by it. The influence of depth is very evident in the general character of the Ægean fauna, in which the aborigines of the deeper recesses of the sea play an important part numerically, both as to amount of species and individuals.

The secondary influences which modify the distribution of animals in the Ægean are many. First in importance ranks the character of the sea-bottom, which, though uniform in the lowest explored region, is very variable in all the others. According as rock, sand, mud, weedy or gravelly ground prevails, so will the numbers of the several genera and species vary. The presence of the sponges of commerce often depends on the rising up of peaks of rock in the deep water near the coast. As mud forms by much the most extensive portion of the bottom of the sea, bivalve Mollusca abound more individually though not specifically than univalves. As the deepest sea-bottom is