

vom Marmarameere mit normalsalzigem Meerwasser. Die Grenze zwischen beiden Wassern hat eine zum Schwarzen Meere zugeneigte Richtung. Über dieser Grenze leben die pontischen Arten, unter derselben außer diesen noch die propontischen.

Der Raum unter der Grenze senkt sich mit der Neigung derselben immer tiefer und nimmt an Umfang ab. Daraus folgt die Verminderung der propontischen Vertreter, unabhängig vom Salzgehalt.

Wenn wir die Puncte, welche einen und denselben Procentsatz der propontischen Mollusken-Arten enthalten, mit Linien längs des Bosporus in Gedanken verbinden, so erhalten wir, was ich isopropontische Curven, oder Isopropontiden nenne.

Die auf solche Weise erhaltene Isopropontide für 30 % zeigt uns, daß sie durch das specifische Gewicht des Wassers im Durchschnitte von 1,020 eingeschränkt wird, wobei das specifische Gewicht der Umgebung für unsere Isopropontide näher zum Marmarameere geringer ist, als das durchschnittliche (1,020), und näher zum Schwarzen Meere höher als dasselbe.

Also fallen die Isopropontiden nicht mit den Isohalen⁷ zusammen.

Näheres über diese Sache sowie weitere Ergebnisse der wissenschaftlichen Erforschung des Bosporus sind in meinen beiden oben citierten Schriften dargelegt.

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2. The Median Eye of Adult Crustacea.

By Hermon C. Bumpus, Ph.D., Brown University, Providence, U. S. A.

eingeg. 5. April 1894.

The median eye, so generally present in larval Crustacea, and in the lower groups a well-known character of the adult, has been detected in mature examples of only a single family of the higher forms, the Carididae. In 1881 Prof. Paul Mayer¹ called attention to the presence of the organ in adult *Palaemonetes varians* and Robinson² in 1892 described its structure in *Virbius*, *Palaemon* and *Pandalus*.

While enjoying the exceptional facilities for biological work at the Zoological Station at Naples, I have been able to trace this organ through several *Brachyura*, *Macrura*, *Schizopoda* and *Stomatopoda* and in no case have I found the organ absent.

⁷ ίσος, gleich und ὅλος, Salz.

¹ Dr. Paul Mayer, Carcinologische Mittheilungen. Mitth. aus der Zool. Stat. zu Neapel. Vol. II. p. 202.

² Margaret Robinson, On the Nauplius Eye persisting in some Decapods. Q. J. M. S. 1892.

In the *Stomatopoda* the eye is present in both *Squilla mantis* and *Squilla Desmarestii*. It is borne on an elongated stalk which extends anteriorly from the brain, at a point midway between the optic nerves to the inner surface of the shell. Bellonci³ (1878) in his description of the brain of *Squilla mantis* entirely overlooked this structure though Claus⁴ had mentioned its presence in the young adult of *Gonodactylus* in 1871.

Only two Schizopods have been examined, one a large and the other a small species of *Euphausia*. The eye present in both, and easily seen from the exterior, is located between the compound eyes and is directed dorsally.

In the Macrura I have found the eye in the Carididae in *Alpheus dentipes*, where it is very evident, in *Nika edulis* and in *Peneus membranaceus* and *Peneus caramote*. — In the Astacidae it occurs in *Homarus vulgaris*. — In the Palinuridae it occurs in *Palinurus vulgaris* and *Scyllarus arctus*. — In the Galatheidae it occurs in *Munida rugosa* and *Galathea squamifera*. — In the Thalassinidae in *Gebia littoralis* and *Callianassa subterranea* and in the Paguridae in *Eupagurus Pri-deauxii*.

I have not examined examples of the Sergestidae, Polychelidae and Hippidae, though the organ is probably present in these groups.

The only Brachyuran examined, a species of *Homola*, gave the same general result as the Macrurans, though the organ was somewhat less intensely pigmented.

In a later paper, dealing with the central nervous septum of the Crustacea, figures and a more detailed description of this organ will be given.

Stazione Zoologica, Naples. April 2, 1894.

3. Protandric Hermaphroditism in Myzostoma.

By William Morton Wheeler, Ph.D., Chicago University.

eingeg. 5. April 1894.

In the following preliminary note I would call attention to certain peculiarities in the sexual conditions of the Myzostomids. My results were obtained from a study of the four Mediterranean species: *Myzostoma glabrum* Leuck., *M. cirriferum* Leuck., *M. alatum* v. Graff and *M. pulvinar* v. Graff. The two former occur on the common *An-*

³ G. Bellonci, Morfologia del Sistema Nervoso Centrale della *Squilla mantis*. Ann. del Mus. Civico di Storia Naturale di Genova. Vol. XII. p. 518.

⁴ C. Claus, Die Metamorphose der Squilliden. Göttinger Abhandlungen, 1871. XVI. p. 4.

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