I thought of an equivalent to the lateral organs of Rhipidoglossa, but then noticed that the organ was present only in the foremost portion of the lateral mantle-chamber, and I therefore assumed that a connexion existed with the rudimentary gills or organs of Spengel. The mode of preservation of the animal under investigation was not such as to enable a clear idea of the innervation to be obtained, and therefore in a figure of *Patinella deaurata* recently published with another object ("Beiträge zur Kenntnis der Mollusken.—I. Ueber das Epipodium," Zeitschr. f. wiss. Zool. 53 Bd., Taf. xxiii. fig. 3), which shows a thickened streak at the spot indicated, I had designated this simply as "sense-organ" ("Sinnesorgan").

A short time ago I received some well-preserved specimens of *Patina pellucida* from Heligoland, and in a series of sections I have found the sense-organ again very distinctly, and have determined its innervation. The nerve, which runs beneath the streak of sensory epithelium, proceeds from the olfactory ganglion of Spengel; it is on the whole feebly developed and not altogether easy to distinguish between the fibres of the retractor muscle, though most distinct in front. The epithelial band is fairly broad at the spot where it encircles the retractors in front; from this point it becomes still broader towards the middle, and the cells become flatter, while at the outer side it soon narrows considerably, while the columnar cells diverge fan-wise; at this spot it differs most from the surrounding epithelium, though the entire streak exhibits the characteristics of sensory epithelium in a well-marked degree.

With reference to the dissemination of this organ, it may be remarked that it is possible that it occurs in all Patellidæ, excluding *Acmæa* and *Lepeta*, since I have traced it in *Patella cærulea* in sections and have seen it macroscopically in *Patinella*, two forms which are not far distant from the terminal points of the phyletic developmental series.

Neither Spengel ("Die Geruchsorgane und das Nervensystem von Mollusken," Zeitschr. f. wiss. Zool. 35 Bd.) nor Bernard ("Organes palléaux des Prosobranches," Ann. Sc. Nat. vii. 9), who has recently minutely investigated the branchial sense-organs of the Prosobranchia, have noticed this prolongation of them at the sides of the body in Patellidæ, but have only observed the portion which is in immediate connexion with the nuchal papillæ, the rudiments of the Zygobranch gills. Bernard even expressly states with regard to *Patina pellucida* that "the organ of Spengel is situated entirely behind the ganglion." The course of the organ as described above appears to me to be not without importance, and I therefore wished to give a provisional account of the fact; I shall revert to it later on in greater detail.—*Zoologischer Anzeiger*, xvi. Jahrg., no. 412 (February 13, 1893), pp. 49, 50.

On Cirripedes and other Crustaceans commensal with Mediterranean Turtles. By MM. E. Chevreux and J. de Guerne.

It is seldom that the opportunity is presented to zoologists of observing the pelagic Vertebrates at sea under the normal conditions of their existence. Accordingly on board the 'Hirondelle,'

as well as the yachts 'Actif' and 'Melita,' we have both of us always examined with great care all those which chance brought within our reach, and especially the Turtles.

Two of these animals, *Thalassochelys caretta*, L., were captured in 1892 between Algeria and the Balearic Isles during the last scientific voyage of the schooner 'Melita.' On July 7th, in lat. 37° 55′ N. and long. 0° 40′ E., two turtles were descried. One was floating on its back, beating the air with its feet; the other was swimming at considerable speed round its companion, and on the arrival of the boat it dived and disappeared, while the latter allowed itself to be taken without endeavouring to escape.

The carapace of this turtle was fairly clean, but a few Cirripedes were attached to it, including specimens of *Lepas Hilli*, Leach, some very young *Conchoderma virgatum*, Speng., and a fine example of *Platylepas bissexlobata*, Blainv. A certain number of Amphipods (sixteen *Hyale Grimaldii*, Chevreux, one *Platophium chelonophilum*, Chevreux and de Guerne, and one *Caprella acutifrons*, Latr.) were collected among the *Lepas*; four specimens of *Tanais Cavolinii*, M.-Edwards, were ensconced in the interstices of the dorsal plates; and, lastly, three *Nautilograpsus minutus*, L., were attached to the tail of the Chelonian, shielded by the posterior margin of the carapace.

The second turtle was captured in the same region on August 2nd, in lat. 37° 26′ N. and long. 0° 50′ E. Its carapace was plentifully garnished with Cirripedes (of the same species as those above, in larger numbers) and Algæ (*Polysiphonia sertularioides*, Grat., a Mediterranean species common on the coast of Algeria. In the Algæ were found two hundred and fifty-nine specimens of *Hyale Grimaldii*, one *Platophium chelonophilum*, and several hundred *Caprella acutifrons*. Five *Tanais Cavolinii* were hidden between the plates of the carapace and two *Nautilograpsus minutus* were attached behind in the position already indicated.

These crabs are adult specimens of large size; on the first turtle were found two males and an oviferous female, on the second one male and an oviferous female. It will be noticed what is apparently the constant position occupied by these Crustaceans upon Chelonians. It is the only one where they are almost certainly protected from the pursuit of the *Thalassochelys*, which devour them readily, just as they free one another from the stalked Cirripedes attached to their carapaces by eating them *.

Hyale Grimaldii was recently described by one of us from two male specimens collected upon a piece of wreckage among the *Ulva* during the fourth expedition of the 'Hirondelle,' in lat. 42° 9′ 24″ N., and long. 23° 33′ W. It is the only species of the genus *Hyale* which, so far as is known at present, can be considered as exclusively pelagic. It is true that in the Azores *Hyale camptonyx*, Heller, and *H. Stebbingii*, Chevreux, have been found by M. Th. Barrois upon a beam covered with barnacles, which was stranded not long since in the Bay of Ponta-Delgada. But these two species are common on the shores of the Archipelago; the former abounds in

* G. Pouchet and J. de Guerne, "Sur l'alimentation des Tortues marines," Comptes Rendus, April 12, 1886.

the Mediterranean and is found along the Atlantic coast of Europe as far up as Saint-Jean-de-Luz (Basses-Pyrénées); the latter, which apparently ought to be regarded as an insular form, and was obtained for the first time by one of us at Fayal in 1887, and then at Fayal, Florès, and Rosario de Corvo in 1888 (third and fourth expeditions of the 'Hirondelle'), was met with again during the voyages of the 'Melita' in the Canaries and in Corsica. The numerous colony of *Hyale Grimaldii* attached to the second of our turtles comprised adult males, oviferous females, and young individuals of all ages. Their colour was noted down at once; the body is orange-brown, the antennæ and legs violaceous pink, the eyes black.

Platophium (*Cyrtophium*) *chelonophilum*, described from the numerous specimens obtained by the 'Hirondelle' *, has never been met with except upon turtles. The 'Challenger' expedition captured a single specimen of the species, a young one, upon a *Chelonia imbricata*, L., from the Atlantic †. An adult female was found upon the first of our *Thalassochelys* and an adult male upon the second.

The very numerous examples of *Caprella acutifrons* (comprising adult males and females and young of all sizes) belong to the well-characterized variety described by M. Mayer under the name *forma Andreæ*, which appears to be exclusively pelagic. This form may be said to be of universal distribution; specimens of it are known from the Gulf of Naples, the North Atlantic, the Pacific Ocean (voyage of the 'Galathée'), the Sea of Japan, and the Strait of Corea, all of which were found upon wreckage in company with *Lepas* and Hydroids, except a female which was obtained upon a turtle in lat. 38° 10′ N. and long. 64° 20′ W.

Tanais Cavolinii, on the contrary, is a littoral species, which is common in the Mediterranean. It has been reported from the Adriatic (*Heller*) and the Azores (*Th. Barrois*).

Lepas Hilli and *Conchoderma virgatum* do not give rise to any special remark. The second of these Cirripedes belongs to the variety *chelonophilum*, Leach.

Platylepas bissexlobata, which was mentioned by Bivona as long ago as 1832 as occurring upon the turtles of the Mediterranean, does not appear to have been noticed there again. It is, however, although it seems to have been seldom observed, a species of world-wide distribution. Darwin considered it to be identical with that which is found upon the manatees of the tropical Atlantic and upon the dugongs of Australia. Perhaps it may even occur on the shores of California.—*Comptes Rendus*, t. cxvi. no. 9 (Feb. 27, 1893), pp. 443–445: from a separate impression, communicated by the Authors.

* E. Chevreux and J. de Guerne, "Sur un Amphipode nouveau, *Cyrtophium chelonophilum*, commensal de *Thalassochelys caretta*, L." ('Comptes Rendus,' Feb. 27, 1888). A turtle belonging to the same species, captured on Aug. 6, 1888, in the neighbourhood of the Azores, in lat. 39° 41′ 35″ N. and long. 33° 24′ 22″ W., during the fourth expedition of the 'Hirondelle,' likewise furnished a very large number of *P. chelonophilum*.

† The locality is not indicated, but it is probable that it is the most southerly of those where *P. chelonophilum* has been taken, considering the habitat of *Chelonia imbricata*.