MEDUSAE OF THE IRANIAN GULF

By P. L. KRAMP

DURING the fishery investigations carried out by dr. H. BLEGVAD for the Iranian Government in 1937 and 1938 some few medusae were collected. Most of them were taken in a big trawl hauled along the bottom, and as a rule they were more or less damaged by the various kinds of bottom animals brought up with them. All of them could, however, be identified with certainty, and some of them are in a fairly good condition. They all belong to well-known species, and from a zoogeographical point of view they reveal no cases of surprise. The most interesting find is that of *Catostylus perezi* Ranson, which has been found only once before, as late as in 1945. The specific name of the Indo-Pacific species of *Tamoya* is discussed.

The majority of the specimens were collected by dr. G. THORSON in March 1937. During the investigations in 1938 only some few specimens of *Aequorea pensilis* were taken by dr. B. LØPPENTHIN.

No records of medusae from the Iranian Gulf are given in the previous literature.

LEPTOMEDUSAE

Aequorea aequorea (Forskål).

Syn. *Aequorea forskalea* Péron & Lesueur.

Stat. 22. 13.III.37. 31 miles W. by S. of outer light-bouy of Bushire, 28°54′ N. 50°11′ E. Depth 56 m. Trawl. 1 specimen.

The diameter of the umbrella is 78 mm, stomach 39 mm. There are 84 radial canals and almost as many tentacles. The tentacles and their basal bulbs have the typical appearance of *A. aequorea*, being elongated, conical, with very slight lateral extensions.

Further distribution: Owing to the uncertainty of the delimitation of the various species of *Aequorea* the geographic distribution of *A. aequorea*

cannot be stated with certainty. It is common in north-western Europe, from where it extends southwards along the west coast of Africa, at least as far as in the Gulf of Guinea. Also common in the Mediterranean and on the east coast of North America. It probably also occurs on the Pacific coast of North America. It has not previously been recorded with certainty from the Indian Ocean, but I have no doubt of the identification of the present specimen.

Aequorea macrodactyla (Brandt).

Stat. 42. 30.III.37. 21 miles N.E. of Bahrein, 26°50′ N. 51°17′ E. Depth 33 m. Dipnet in the surface. 1 specimen.

Diameter of the umbrella about 80 mm, stomach about 38 mm, 153 radial canals. Most of the tentacles are lost; where they are retained there are 2–3 radial canals between successive tentacles. The basal bulbs distinctly show the abaxial keel and clasp characteristic of this species.

Further distribution: Widely distributed in the warm parts of the Indian and Pacific Oceans from Africa to America. Also recorded from the southern part of the west coast of Africa, and according to RUSSELL (1939 and 1953) it has been found in the English Channel.

Aequorea pensilis (Haeckel).

Stat. 42. 30.III.37. 21 miles N.E. of Bahrein, 26°50′ N. 51°17′ E. Depth 33 m. Dip-net in the surface. 1 specimen.
The coast off the island Larak in the Strait of Hormuz, 25.III.38. 5 specimens.

The specimen from stat. 42 is 32 mm wide, the stomach 21 mm. 105 fully developed radial canals, more than half of them without gonads; moreover several young canals developing from the periphery of the stomach but ending blindly on the subumbrella and not yet reaching to the ring-canal. Many of the tentacles are lost; as a rule there are 10–14 canals between successive tentacles, in one place only 6. The tentacle bulbs have no abaxial keel, but the long lateral extensions towards both sides from their base are distinct; accordingly they have the appearance characteristic of *A. pensilis*.

The specimens from Larak, 1938, have lost almost all their tentacles. Their dimensions are as follows:

Diameter of umbrella ..... mm	39	43	47	55	59
Diameter of stomach ..... mm	25	28	30	39	40
Number of radial canals	146	c. 126	220	161	260

Further distribution: Widely distributed in the tropical parts of the Indian and Pacific Oceans from the Red Sea to Australia, the Philippines, southern Japan and further east as far as Tahiti. Records from the Atlantic are doubtful.

LIMNOMEDUSAE

Olindias singularis Browne.

Stat. 24. 13.III.37. 29°07′ N. 49°56′ E. Depth 41 m. Danish seine. 2 specimens.
Stat. 42. 30.III.37. 21 miles N.E. of Bahrein, 26°50′ N. 51°17′ E. Depth 33 m. Dip-net in the surface. 1 specimen.

This is the common species of *Olindias* in the Indo-West-Pacific region. Its rank as an independent species is beyond any doubt, and the present specimens are typical in every respect. As in other specimens previously described the majority of the statocysts are unpaired, placed singly at the base of the primary tentacles; only in few cases two statocysts are seen at the base of one tentacle. Two of the specimens are considerably larger than any seen before. The dimensions are as follows:

Stat.	umbrella diam. mm	umbrella height mm	number of tentacles primary	number of tentacles secondary	number of marginal knobs	number of centripetal canals
24	37	10	70	68	124	54
24	50	12	104	34	148	56
42	53	14	116	68	188	56

Further distribution: Widely distributed in the Indian Ocean and the western tropical Pacific as far east as Low Archipelago; not previously found farther west than the Maldive Islands.

SCYPHOMEDUSAE

Tamoya gargantua Haeckel.

Stat. 17. 11.III.37. 15 miles S.E. by S.$^1/_2$S. of Bushire outer light-bouy, 28°45′ N. 50°52′ E. Depth 15 m. Trawl. 1 specimen.
Stat. 24. 13.III.37. 29°07′ N. 49°56′ E. Depth 41 m. Danish seine. 3 specimens.
Stat. 25. 14.III.37. 63 miles W.$^1/_4$S. of Bushire, 28°58′ N. 49°34′30″ E. Depth 49 m. Trawl. 1 specimen.
Stat. 37. 26.III.37. 41 miles S.$^3/_4$E. of Bushire outer light-bouy, 28°17′ N. 50°49′ E. Depth 43 m. Trawl. 1 specimen.

All these localities are in the inner part of the Iranian Gulf in the surroundings of Bushire and the island Kharg.

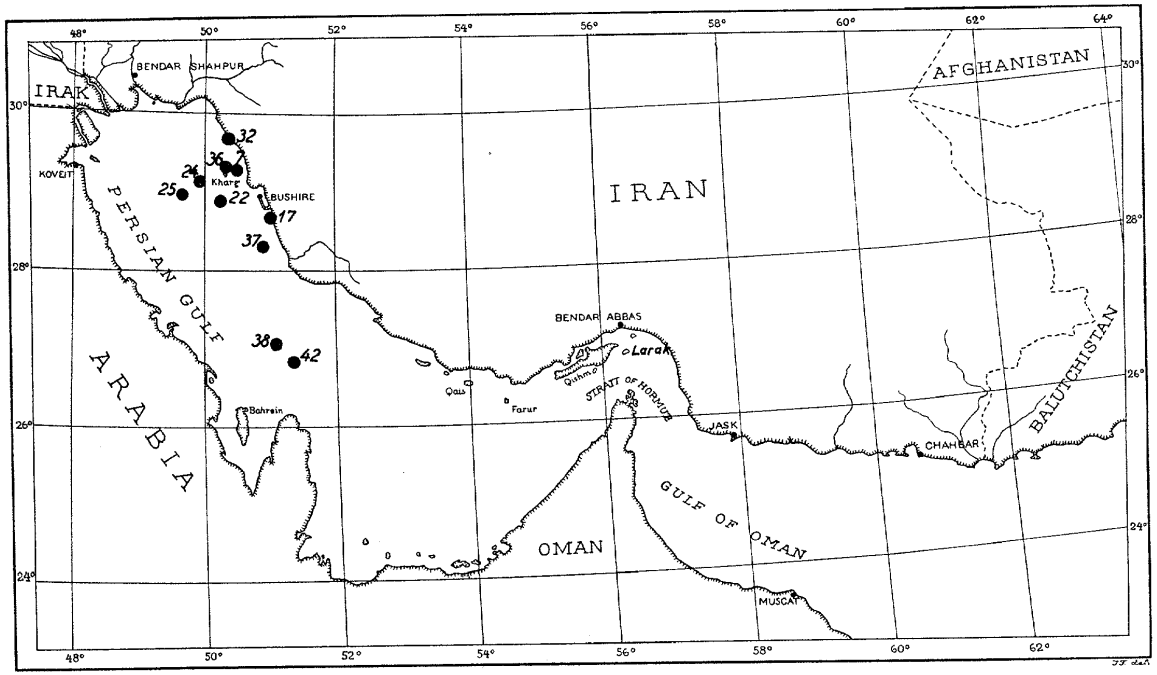
Height of umbrella: stat. 17: 85 mm; stat. 24: 90, 105 and 130 mm; stat. 25: 94 mm; stat. 37: 90 mm. The specimens were taken in trawls and more or less damaged. Their belonging to the genus *Tamoya*, however, is beyond any doubt, and in most of them the organs retained show that they agree with the descriptions of other large specimens of this medusa; especially the canals in the velarium are very similar to those figured by STIASNY (1937 fig. 1) from a specimen taken in the Arabian Sea. Owing to the rather poor condition of the specimens I do not venture to state, whether this Indo-West-Pacific species might be identical with the Atlantic species *T. haplonema*.

The specific name of the Indo-Pacific *Tamoya* has been the subject of much confusion. Until 1938 this species was most frequently reported as *Tamoya alata* (Renaud) L. Agassiz, but since the revision of the Carybdeidae by BIGELOW (1938) the specific name *alata* is finally attached to the true *Carybdea alata*, which does not belong to the genus *Tamoya*. The other specific name used on some occasions is *bursaria* (HAECKEL 1880, p. 44, MAAS 1903 p. 4, STIASNY 1919 p. 38, RANSON 1945 p. 314, UCHIDA 1947 p. 314).

The genus *Tamoya* was erected by F. MÜLLER (1859) with *T. haplonema* as the type species. HAECKEL (1880 p. 444) referred two of LESSON's medusae to this genus, though both are so insufficiently described that they are completely unrecognizable. For *Bursarius cythereae* Lesson (from New Guinea) he quoted LESSON's description and altered the name to *Tamoya bursarius*. I agree with BIGELOW (1938 p. 150) that this name is irrelevant; if the species could be recognized, the name given to it by LESSON would have the priority, but since even its generic affinity is doubtful, we had better abandon this species altogether.

At the same time HAECKEL described an unmistakable *Tamoya* from Samoa but adopted for it the specific name *gargantua* given by LESSON (1829) to a fragmentary medusa from the tropical Pacific, *Beroë gargantua*, which was destitute of all internal organs. I again agree with BIGELOW that all Indo-Pacific specimens of *Tamoya* represent one single species, the one for which the various authors have used the names *alata* or *bursarius*. None of these names are applicable to a *Tamoya*; we must therefore appoint another name, and I think we should follow BIGELOW and adopt the specific name *gargantua* with HAECKEL as the author, *non* LESSON, since HAECKEL under this name gave the first adequate description of a *Tamoya* occurring in the Indo-West-Pacific region.

On one point, however, I do not agree with BIGELOW (1938 p. 151): "Should the Atlantic and Pacific Tamoyas be finally united, *haplonema*



Localities where medusae were collected during 1937 and 1938.

would become a synonym of *gargantua*". It seems to me that when we abandon *gargantua* Lesson, 1829 and adopt *gargantua* Haeckel, 1880, this would have to give way for *haplonema* Müller, 1859, if by future investigations the two species were united.

Further distribution: Coastal waters of the Indian Ocean and the warm parts of the western Pacific from New South Wales, Australia to southern Japan and eastwards, at least as far as Samoa.

Pelagia noctiluca (Forskål).

Stat. 38. 27.III.37. 29 miles N.$^1/_4$E. of Bahrein lightship, 27°03′ N. 51°02′ E. Depth 71 m. Trawl. 2 specimens.

The specimens, which are about 110 and 120 mm in diameter, are peculiar in so far as the surface of the exumbrella is completely smooth with no traces of gelatinous warts. In all other respects they resemble the typical *P. noctiluca*. Among the numerous varieties of *Pelagia*, which have been described, only one is stated to have a smooth surface, viz. *P. discoidea* Eschscholtz (1829 p. 76, Pl. 7 figs. 1 *a* and 1 *b*); it was taken near Cape of Good Hope and has never been observed again. According to ESCHSCHOLTZ "erscheint ihre Oberfläche vollkommen glatt". Another distinguishing character of this form is the shape of the stomach pouches, which are remarkably short: "Der sehr grosse Magen wird nur in der Nähe des Randes durch Einschnitte in 16 Nebensäcke getheilt". In this respect the present specimens do not agree with *P. discoidea*; their stomach pouches have the same length and shape as in typical specimens of *P. noctiluca*.

Further distribution: Pelagia nocticula with its varieties is generally distributed in the warm and temperate parts of all the great oceans; it is recorded from the Arabian Sea and the Gulf of Oman (STIASNY 1937 p. 223), but not before now from the Iranian Gulf.

Sanderia malayensis Goette.

Stat. 36. 24.III.37. West of Kharg, 29°19′ N. 50°19′ E. Depth 22 m. Trawl. 1 specimen.
Stat. 37. 26.III.37. 41 miles S.$^3/_4$E. of Bushire outer light-bouy, 28°17′ N. 50°49′ E. Depth 43 m. Trawl. 1 specimen.
Stat. 38. 27.III.37. 29 miles N.$^1/_4$E. of Bahrein lightship, 27°03′ N. 51°02′ E. Depth 71 m. Trawl. 1 specimen.

Recent descriptions of this well-known species are given by STIASNY (1937 *a* p. 18; 1937 *b* p. 225, Pl. 1 figs. 1–3, textfig. 10). The three specimens from the Iranian Gulf are large, 72, 80 and 105 mm in diameter. The

finger-like papillae of the gonads are numerous and very large, filled with numerous small eggs. According to a note in the journal of the expedition the gonads were violet.

Further distribution: Widely distributed in the Indian Ocean and the western Pacific from the Red Sea and the east coast of Africa to the Philippines and Japan; recorded from the Arabian Sea and the Gulf of Oman (STIASNY 1937 *b* p. 225).

Crambionella orsini (Vanhöffen).

Stat. 7. 4.III.37. 6 miles N.E. by E. of Kharg, 29°18′ N. 50°27′ E. Depth 20–24 m. Trawl. 2 specimens.

The specimens are 110 and 115 mm in diameter and typical in shape.

Further distribution: Abundant in the western part of the Indian Ocean from the Red Sea and the east coast of Africa to the coasts of India.

Catostylus perezi Ranson.

Stat. 32. 23.III.37. The coast north of Kharg, 29°42′ N. 50°20′ E. Depth 7.5 m. Trawl. 1 specimen, 180 mm wide.

Stat. 36. 24.III.37. West of Kharg, 29°19′ N. 50°19′ E. Depth 22 m. Trawl. 1 specimen, 220 mm wide.

This species has only been observed once before. It was thoroughly described by RANSON (1945 pp. 236–242, textfigs. 1–5), and I have nothing to add to his description; even the network of anastomosing canals corresponds exactly to his fig. 4, and the rugged papillae on the marginal lappets, which is the most characteristic feature of the species, are very distinct. The length of the mouth-arms in the largest specimen is 160 mm.

Further distribution: The original specimens were taken on the coast of Arabia, but according to the author it cannot be stated, whether the locality was on the south coast or in the Iranian Gulf.

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