

XXVII.—Upon a new species of “*Alpheus*” discovered upon the coast of “*Herm*” (Channel Islands). By W. V. GUISE, Esq., F.G.S.\*

IN the course of an excursion to the Channel Islands, undertaken last summer with a view to natural-history pursuits, I spent three days in the little islet of Herm, which, though a mere rock, scarcely three miles in circumference, is equalled by few spots of similar extent within the area of the British seas, in respect of the rich field it offers for the researches of the marine naturalist.

The Channel Islands, though an appanage of the crown of Great Britain, are, geographically speaking, rather a part of France than of England; and this situation, in a sort of debateable ground, may perhaps in some degree account for the fact of their natural history having been to a certain extent overlooked by the naturalists of both countries; though few districts can be expected to yield a richer harvest to the scientific investigator, constituting as they do the northern limit to many Mediterranean forms, which, here found flourishing in full vigour, and showing no signs of decrepitude, dwarfishness or decay, suddenly disappear, and find no footing upon our side of the Channel. This is well known to be the case amongst the testaceous Mollusca; and there is little reason to doubt, that researches prosecuted amongst the other kingdoms of nature would be rewarded by the discovery of many novel and important facts.

Amongst the Crustacea, to which I propose especially to direct your attention, it is only necessary to refer to the discovery of the singular and beautiful “*Phyllosoma sarniense*,” figured and described by Mr. C. F. Lukis in the 8th volume of ‘*Loudon’s Magazine of Natural History*,’ which example, still I believe unique, has its only analogues in one Mediterranean species, and in a few others confined to tropical areas.

I propose now to lay before you another Crustacean, which it has been my good fortune to obtain in a tide-pool at low water on the islet of Herm, and which, from its immediate recognition as the “red shrimp” by the fisherman who accompanied me, I have reason to believe is not of unfrequent occurrence. My first idea was, that I had obtained “*Alpheus ruber*,” itself a great prize, being a Mediterranean species of the greatest rarity in our seas; but upon comparing it carefully with the descriptions of Milne-Edwards in his ‘*Histoire Naturelle des Crustacés*,’ I be-

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came convinced that I had had the good fortune to obtain an entirely new species of *Alpheus*; and further investigations have only tended to confirm me in that opinion.

The genus "*Alpheus*" is thus characterized by Milne-Edwards:—

*Carapace* prolonged in form of a hood or vault over the eyes.

*Rostrum* small, and sometimes wanting.

*Superior antennæ* small; first articulation short, and armed without with a plate, generally spiniform; two following joints cylindrical, having two terminal threads, of which the superior is thicker and shorter than the inferior, and presenting traces of a division into two filaments towards the end.

*Inferior antennæ* inserted without and below the preceding.

*Lamellar palp* of moderate size, sometimes small and pointed.

*Mandibles* provided with a short, broad, palpiform appendage.

*External pedipalps* more or less slender and elongated, termination broad and somewhat foliaceous.

*Two first pairs of legs* didactyle, the first pair strong; the one much larger and more robust than the other.

*Second pair* weak and filiform, having the wrist multi-articulate.

*Three last pairs of legs* monodactyle and of moderate length.

This genus, says M. Edwards, appears to belong properly to the seas of warm climates. Some species are found in the Mediterranean; but the greater part come from the seas of the Antilles or from the Indian Ocean.

The genus is *divided* into those which *have*, and those which *have not*, a *spiniform rostrum*. It is further *subdivided* into those having a spine attached externally to the basal joint of the *external antennæ*, and those *not* so furnished.

The example now before us will be found to belong to the second subdivision of the first division, *i. e.* to those provided with a pointed beak, and not having an external spine at the base of the external antennæ.

Under this head three species are described by M. Edwards as inhabiting the European seas, *viz.*—

*Alpheus ruber*, *Alpheus Edwardsii*, and *Alpheus dentipes*, which are characterized as follows:—

*Alpheus ruber*. "Body very slender; larger hand provided with four longitudinal carinæ, two on the upper edge, two on the external face; lower margin obtuse; moveable finger *much shorter* than the immoveable one. A spine upon the upper

margin of both arms at some distance from the termination."

It will be remarked that nothing is here said concerning the character of the anterior portion of the carapace; but as this species is said to be "très voisine de la précédente" ("*Alpheus brevirostris*," a new Holland species), which is characterized as having the border of the supra-orbital hood rounded and *without spines*, it is to be inferred that the like character also applies to *A. ruber*.

*Alpheus Edwardsii*. "Very closely allied to the preceding. *Anterior* borders of *supra-orbital vaults* armed with a *spine*, so that the front presents three nearly equal teeth. The second joint of the superior antennæ about half as long again as the first. Lamellar appendage of the external antennæ dilated a little within towards the end, and not passing the footstalk of the superior antennæ. Pedipalps very narrow towards the end, and extending beyond the footstalk of the superior antennæ. Anterior legs nearly of the same form as in the preceding species, but more enlarged, and having the pincers more irregular; those on one side slender and lengthened."

*Alpheus dentipes*. "Closely allied to the preceding: having likewise the supra-orbital vaults prolonged into points, but having the two anterior legs nearly of the same size; the pincers of the smaller large at the base, but becoming extremely narrow towards the end; having the third articulation of the second, third and fourth pairs of legs armed with a pointed tooth externally, at one-third the length of each."

Upon comparison of my Channel Island individual with the three species described above, I find the following points of agreement and difference between them.

It *assimilates* with *A. ruber* in having the larger hand furnished with longitudinal carinæ on the upper and the outer surface;

*Differs*, in *not* having the moveable finger ~~longer~~ than the immoveable one; and *essentially* in the spinous armature to the supra-orbital hoods.

It *assimilates* with *A. Edwardsii* in having the anterior edge of the supra-orbital hoods armed with short spines; and in having the second joint of the superior antennæ half as long again as the first;

*Differs*, inasmuch as the lamellar appendage is *not* dilated towards the end; in the longitudinal carinæ upon the upper and

shorter  
see p

outer surface of the larger pincers; in the proportions and form of the anterior feet, and in other minor particulars.

*Assimilates* with *A. dentipes*, as with *Edwardsii*, in the spinous terminations to the supra-orbital hoods;

*Differs*, with respect to the comparative proportion between the two anterior pairs of legs; and inasmuch as the three hinder pairs of legs are not armed externally with a pointed tooth.

Having thus shown in what respects the *Alpheus* from Herm assimilates with, and differs from, the three species above referred to, it remains to describe its own particular characteristics, which are as follows:—

The medial line of the carapace prolonged anteriorly into a short beak: *supra-orbital vaults*, each furnished at the extremity with a minute spine: *anterior legs unequal*; the *larger hand* having upon the upper edge two carinæ, one behind the other, each terminating anteriorly in a small tooth projecting forwards; two carinæ upon the outer surface of the claw, the lower one having a short tooth: the *moveable finger* not shorter than the immoveable one, flattened laterally, and broad at the point: the *immoveable finger* triangular, strong, and forming a kind of socket into which the opposing finger fits by a tubercle at its extremity: *lesser pincer* having a toothed keel upon its upper edge, equal in length to the others, but thinner, narrower, and much less robust: second pair of legs didactyle, slender, and having the wrist many-jointed.

Length 15 lines.

Colour deep scarlet, except the chelæ, which are mottled with yellow.

From the want of other works of reference, besides those of M. Edwards and of Professor Bell, I have it not in my power to ascertain whether the species now under notice has been distinguished by later carcinologists; but I have endeavoured, I think satisfactorily, to show that it cannot be identified with either of the European species of *Alpheus* described by the former distinguished naturalist. As regards both the figure and description of *Alpheus ruber* in Bell's 'British Crustacea,' they having been confessedly taken from an *imperfect* individual, found in the stomach of a Cod-fish, have so little in common with my Channel Island example, that, if identical with it, it must be presumed that all the more marked points of agreement between them had been digested away in the interior of the fish.

In the 8th volume of 'Loudon's Magazine of Natural History,' page 272, is however a notice of a Crustacean by the late Mr. Hailstone, which certainly agrees far more nearly with my example than do either of those to which I have already referred;

so nearly indeed, that but little doubt remains upon my mind of its being identically the same. This species, which Mr. Hailstone calls "*Hippolyte rubra*," and of which a figure is annexed, is thus described:—

"Superior antennæ with two setæ, the upper ones fringed with hair and excavated below. Inferior antennæ nearly the length of the body. Pedipalps with three exerted joints, the last bluntly pointed, and twice the length of the preceding one, with two rows of fasciculi of hairs. First pair of legs didactyle, very large, with the hands much compressed, unequal, the right being the larger, bristly; the thigh excavated beneath, and its inner margin spinulose; second pair didactyle, very long, slender; wrists many-jointed; other legs terminated by a single claw and spinulose within; the last pair the most slender. Thorax with three short spines anteriorly. Tail with five plates, the middle one blunt at its apex, with four spines arranged in two lines. Colour deep scarlet, except above the eyes, *which are concealed under the shell*, and above them it is transparent and colourless. The tail is fringed with white hairs, and the legs are mottled with yellow."

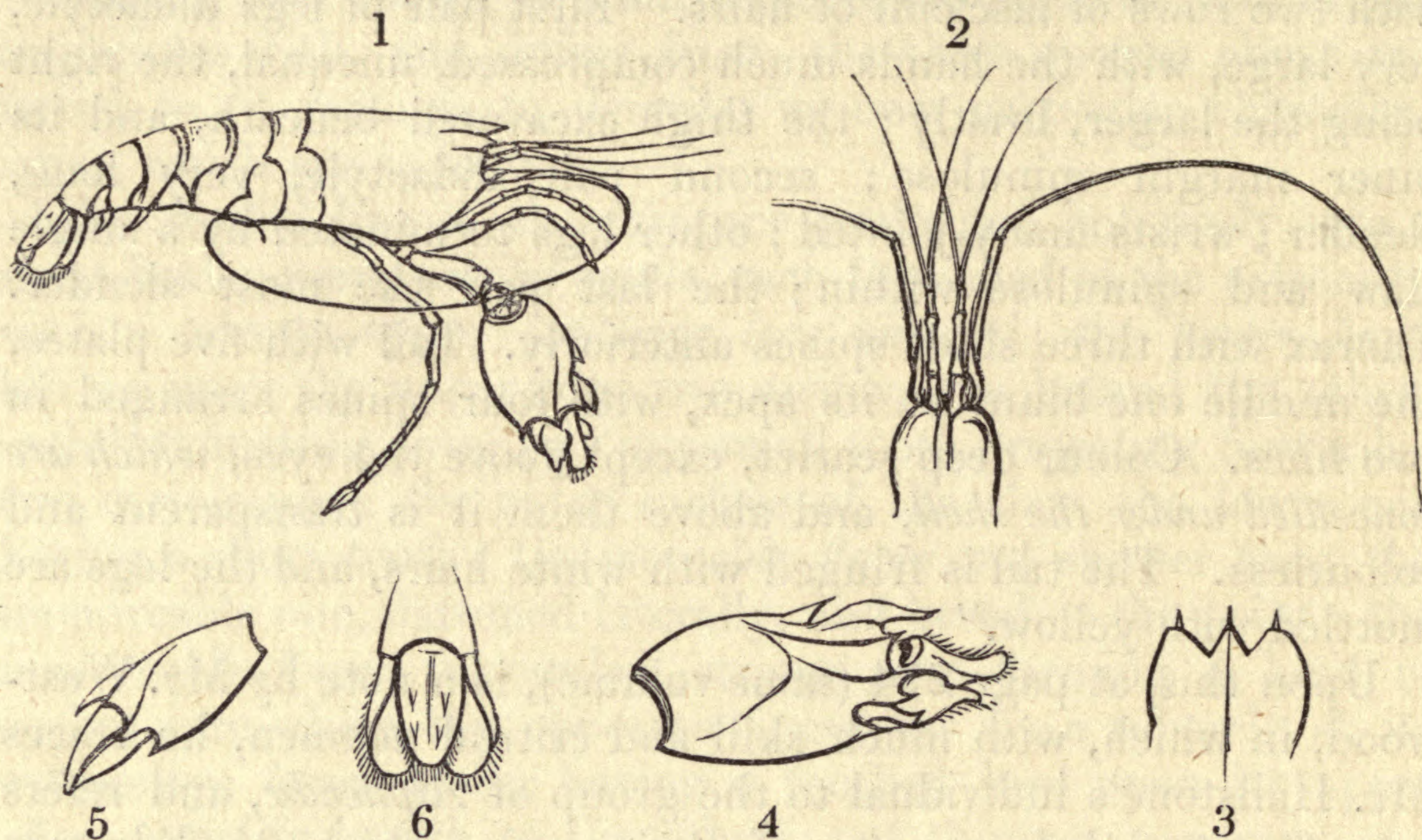
Upon this, at page 274 (same volume), is a note by Mr. Westwood, in which, with much skill and critical acumen, he traces Mr. Hailstone's individual to the group of *Alpheadæ*, and refers it to *Cryptophthalmus ruber* of Rafinesque, which M. Edwards identifies with his "*Alpheus ruber*." Mr. Westwood afterwards, at page 552, proposed to elevate it into the type of a new genus by the name of '*Dienecia*.'

Mr. Hailstone's description, as quoted above, might almost stand word for word as applicable to my example, with which it seems to tally in all important particulars, excepting as regards size, which, in the case of Mr. Hailstone's Crustacean, is barely two-thirds that of mine. The figures too attached to Mr. Hailstone's notice would serve equally well to illustrate mine, with the exception of the hairy fringe attached to the setaceous extremities of the superior antennæ.

If I am right in my supposition of the identity of my Channel Island Crustacean with the three individuals described by Mr. Hailstone as brought up by the trawl-net off Hastings in 1835, it is evident that the half-digested relics procured by Mr. Cocks at Falmouth are not the first examples of an *Alpheus* having been recorded as an inhabitant of the British seas. Indeed it is impossible to read Mr. Hailstone's careful and minute description without feeling convinced that a true *Alphean* was before him when he made his drawing and description; and I may be pardoned for expressing my surprise, which I do with great deference to the high attainments of Professor Bell, that that distin-

guished naturalist, in adopting the "*Crangon bispinosus*" and "*trispinosus*" of Mr. Hailstone, should have omitted all reference to a form so very remarkable and so carefully detailed as Mr. Hailstone's "*Hippolyte rubra*."

In the belief that my Channel Island Crustacean is a new and undescribed species, I propose to bestow upon it the name of *Alpheus affinis*; thereby indicating the close relationship which it bears to the three other European species already referred to.



1. *Alpheus affinis*, natural size.
2. Enlarged view of front of carapace, showing supra-orbital vaults, insertion of antennæ, &c.
3. Front of carapace still further enlarged, showing beaked rostrum and spinous armature of supra-orbital vaults.
4. Enlarged view of larger pincer.
5. Enlarged view of lesser pincer.
6. Tail.

XXVIII.—*Descriptions of three new species of British Actiniæ.*  
By PHILIP H. GOSSE, A.L.S.

*Actinia aurora.* The Orange-tentacled Anemone.

Body in contraction a hemispherical button  $\frac{1}{2}$  inch in diameter, of an umber-brown hue, occasionally varying to olive, marked with narrow longitudinal pale bands, which become wider and more conspicuous towards the base, and obsolescent at the discal margin, where the brown hue is deepest. The pale bands are separated by about four times their own width, but have at the base several short and vanishing pale lines between them.

The exterior of the body is studded with numerous pale oblong sucking-glands, not prominent, to which grains of sand, fragments of shell, &c. adhere strongly.