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eter; disk at center 1·5 inches thick; largest marginal lobes 1·25 long; smallest ·75; actinal appendages 8 to 10 inches long; ovaries hang down 4 inches from disk; tentacles 12 feet long.

Eastport Harbor, swimming near the surface at noon; three specimens observed, one preserved in the museum of Yale College.

Edwardsia elegans Verrill, sp. nov.

Body elongated, slender; epidermis thick, light yellowish brown, with entangled mud, the upper edge slightly free and prominent. Tentacles 16, slender, variously curved and entwined, pale flesh-color, with a central longitudinal line of light orange-red; naked part below the disk pale pink with longitudinal white lines corresponding with the internal lamellæ; mouth light yellowish; disk pale flesh-color.

Eastport, Me., at low water under stones, rare; also on Indian Island, N. B.

Edwardsia farinacea Verrill, sp. nov.

Body small, changeable in form, not very slender, often swollen in the middle or near the base, tapering upward; epidermis firm, dark yellowish, covered with small, firmly adherent grains of sand, the internal lamellæ showing through faintly, but becoming more distinct on the naked, transparent, protruded basal portion, which is marked by 12 corresponding whitish sulcations, meeting at the end and alternating with some finer lines. Upper part of column transparent and naked for about ·12 inch. Tentacles 12, short, conical, in a single circle at the margin of the disk, not crowded, pale yellowish white, sprinkled with fine flake-white specks which become more crowded on the inner median line and at the tips. Disk small, protruded; mouth largely dilatable, at times elevated on a cone; lips with 6 to 12 irregular lobes. Disk and naked space below the tentacles pale yellowish white, finely speckled with flake-white, the disk with faint whitish radiating lines. Length, ·5 inch; greatest diameter, ·15; diameter of disk, ·12.

South Bay, Lubec, on a muddy bottom in 8 fathoms, rare.

No. II.—*Descriptions of a new genus and two new species of Scyllaridæ and a new species of Æthra from North America;* by SIDNEY I. SMITH.

Evibacus, gen. nov.

Carapax very broad; lateral border expanded, incision at the cervical suture closed, and the margin behind it not incised. Rostrum broader than long, very slightly bilobed. Eyes situ-

ated midway between the rostrum and the outer angle; the orbits entire, slightly removed from the anterior margin and connected with it only by a suture. Antennæ with the inner margins approximate.

This genus is most nearly allied to *Ibacus* and *Parribacus* but is very distinct from both of them in the entire lateral margin of the carapax, the closing of the orbits in front, and the form of the rostrum.

Evibacus princeps, sp. nov.

Whole upper surface verrucose and nearly naked; five low, tuberculose elevations on the median line of the carapax, of which one is at the base of the rostrum, two on the gastric region, one on the anterior part of the cardiac, and one on the posterior margin; similar elevations on the middle of the second and third segments of the abdomen, and a very slight one on the fourth. Carapax strongly convex transversely; the anterior margin nearly straight, except at the lateral angle where it is slightly curved forward; lateral margin strongly curved, with a broad notch at the cervical suture behind which the margin is very slightly, obtusely and irregularly toothed. Antennæ together as broad as the anterior part of the carapax; the outer margins coarsely and irregularly serrate and their outline forming the segment of a circle. Everywhere beneath naked and nearly smooth. External maxillipeds with the outer margin of the merus divided into a number of slender processes. Legs so short that when bent forward in their natural position they are concealed beneath the expansions of the carapax; those of the first and second pairs with the superior angle of the merus raised into an obtuse crest; dactyli of all the legs short and stout, in the female those of the posterior pair closing against a process from the propodus. Abdomen with the lateral projections of the second, third and fourth segments long and rather acutely pointed, those of the fourth shorter and triangular at tip; lamella of the terminal segment half as long as broad. Whole length of body, 14 in.; length of carapax, including rostrum, 5·8; breadth of carapax, 7·9.

A single female specimen of this remarkable species, the first of the Scyllaridæ discovered upon the west coast of America, was sent from La Paz, Lower California, by Capt. Jas. Pedersen.

Arctus Americanus, sp. nov.

Carapax as broad as long, median crest high, covered with low squamiform tubercles, tridentate, the anterior tooth small and situated half way between the front and the second tooth; lateral crests very high, anterior portion with two teeth above the eye and separated by a deep notch from the posterior por-

tion which is covered to the lateral margin with low squamiform tubercles; depression between the median and lateral crests broad and deep, smooth or slightly punctate, with a median line of four depressed tubercles; lateral margin broken by a deep fissure at the cervical suture, and by a slight one a little more posteriorly. Antipenultimate segment of the antennæ as broad as long; anterior angle not prominent; outer margin arcuate, bidentate; anterior margin armed with several denticles; median carina prominent but smooth and even; terminal segment short, the extremity almost truncate and rather deeply five-lobed, the lobes rounded; the inner margin bidentate. Exposed portions of the abdominal segments sculptured as if covered with rows of scales; fourth segment with a prominent median elevation above. Feet nearly naked; the merus segments slightly carinated above. Length, 1·45 in.; length of carapax, along the median line, ·45, lateral margin, ·50; breadth, anteriorly, ·49. Male and female do not differ.

Several specimens from Egmont Key, west coast of Florida, collected by Col. E. Jewett and William T. Coons. It is specially interesting as the representative of a genus hitherto known only from the old world.

Æthra scutata, sp. nov.

Carapax transversely and regularly elliptical; margins thin, slightly dentate, the denticles separated by broad and very shallow sinuses; posterior margin nearly straight in the middle; anterior margin straight and parallel to the posterior margin for a short space outside the eyes; front projecting horizontally, its margin forming a semicircle; gastric region elevated, with a broad median depression extending to the front; anterior lobe of branchial region large and prominent; the broad space between the branchial region and the antero-lateral margin concave; summits of the elevations and a space along the posterior border tuberculose, rest of the upper surface smooth; inferior lateral regions slightly convex and smooth. Chelipeds fitting closely to the carapax; the angles projecting into dentate crests; outer and inferior surface of the hand coarsely granulous. Ambulatory legs short; the angles projecting into thin, dentate crests. Sternum and abdomen deeply vermiculated. Length of carapax, 1·39 in.; breadth, 2·23.

A single male of this species, the first of the genus discovered in America, was sent with the *Evibacus* from La Paz by Capt. Pedersen. It is at once distinguished from *Æ. scruposa* Edw., by the much broader and more regularly elliptical carapax.

The genus *Æthra* should evidently be placed near *Crypto-*

podia as has been done by Stimpson. The gastric region is narrow and projects far forward as in the Maioids. The expansions on the sides of the carapax, which give it a Cancroid form, are thin, and contain none of the internal organs, and their removal would give the carapax very much the form of *Cryptopodia*.

SCIENTIFIC INTELLIGENCE.

I. PHYSICS AND CHEMISTRY.

1. *Spectroscopic observations of the Sun.*—LOCKYER has communicated a number of interesting facts resulting from his further observations on the spectroscopic phenomena of the sun. Of these the following are especially worthy of notice.

(1.) The lines of magnesium, sodium and barium when observed in a spot, are thicker than their usual Fraunhofer lines.

(2.) The same lines when observed in the chromosphere are thinner than their usual Fraunhofer lines.

The author considers these facts additional proof of the truth of his assertion made in 1865, on telescopic evidence alone that a spot is the seat of a downrush, as we now know, to a region where the selective absorption of the upper strata varies from what it would be at a higher level. We have then two causes for the darkening of a spot:—first, the general absorption of the chromosphere, thicker here than elsewhere as the spot is a cavity, and secondly, the greater selective absorption of the lower sodium, barium, magnesium stratum, the surface of its last layer being below the ordinary level. Mr. Lockyer endeavored to observe the solar prominences by using a very rapidly oscillating slit, but up to the present time without satisfactory results. By using, however, a wide slit, without the absorbing media employed by Mr. Huggins, Mr. Lockyer obtained very striking results. The solar and atmospheric spectra being hidden and the image of the wide slit alone visible, the telescope or slit is moved slowly, when fleecy delicate cloud-films are seen, of various beautiful forms. By this method, the smallest details of the prominences and of the chromosphere are rendered visible and easy of observation. Mr. Lockyer found it best for sketching purposes to have the open slit in a radial direction, but in studying the chromosphere it is best to place the slit tangent to the sun's limb. The outline of the chromosphere varies greatly, being sometimes undulating and billowy, sometimes ragged and sometimes nearly even for some distance, but very uneven near a prominence. The prominences sometimes undergo very marked changes in a few minutes; in one case, in about ten minutes, a portion of one about 27,000 miles in height entirely disappeared, another portion of the same protuberance increasing at the same time. In a former paper Mr. Lockyer pointed out the