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NEW POLYCHAETOUS ANNELIDS FROM NEW ENGLAND, TEXAS AND PUERTO RICO

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Sabellariidae

CENTROCORONE GRUBE

Centrocorone spinifera, new species

Figures 1 to 9

The body is divided into the three regions characteristic of the Sabellariidae: head, thorax and abdomen with a caudal attachment. The type is approximately 20 mm. long and has a body width of 2 mm. The operculum, the ventral surface of the head and the bases of the gills are colored in various shades of brown and a prominent brown area lies on either side of the base of the caudal appendage. Elsewhere the body is colorless (in alcoholic material).

The head is separated from the thorax by a slight constriction and up to the base of the opercular stalk is about as long as two body somites. It is widest at the middle, the anterior end where it carries the opercular stalk being only a little narrower than the posterior. The operculum is disc-shaped and forms a decided angle with its stalk (Fig. 1). In a well-expanded specimen, seen from the ventral surface (Fig. 2), the head shows as a broad flattened structure carrying the operculum on the end. Its ventral surface is dark brown with transverse colorless lines which give it a ribbed appearance. Dorsally, extending anteriorly from its base is a narrow colorless area about half as long as the head, which carries in its center a narrow brown patch. On either side of this area is a translucent-whitish tentacle whose apex almost reaches the operculum. The gills arise on either side as a plate which is high posteriorly but shortens and merges anteriorly with the opercular stalk (Fig. 2). The gill filaments are longest at the posterior end, becoming narrower anteriorly. Instead of a single row of filaments along the margin of the basal plate they are carried on secondary plates at right angles to the basal, each secondary plate with its filaments resembling a "hand" of bananas. As a consequence the free margin of the gill is much thicker than its base.

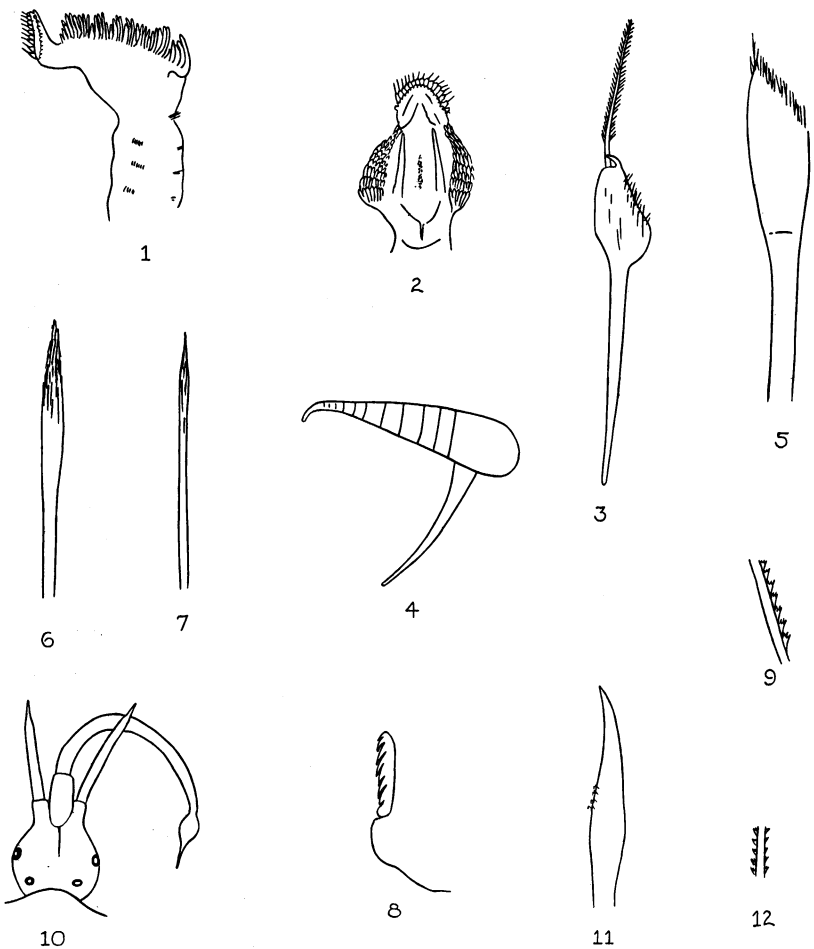
The operculum carries two sets of paleae. On its outer margin it carries a membrane whose outer margin is scalloped, the scallops roughly corresponding in number to the outer paleae. These outer paleae (Fig. 3) have long and slender dark brown stalks deeply imbedded in the opercular tissue. At the surface each abruptly expands into an asymmetrical plate which is convex on one margin, concave on the other. At the end of the concave margin is a sharp, much curved hook. Between this hook and the convex margin arises a stout spine which is longer than the flattened portion and carries on either side a row of slender processes. It is difficult to see this structure since these marginal processes may become entangled with one another or with foreign matter and then look like merely an accumulation of debris. The flattened surface of the palea is more or less covered with spines giving it a roughened appearance. The paleae lie in a single row around the margin of the operculum, their edges more or less overlapping and their terminal spines extending straight outward, thus forming a row of spines around the opercular margin. The narrow stalks are dark brown, the blades lighter in color. The inner paleae (Fig. 4) have the outline of a narrow triangle with a rounded base and bend into a recurved hook at the apex. They are almost black in color but under low power show that this pigmented portion is confined to the center, and is surrounded by a lighter margin. Distinct transverse lines cross it at right angles. Near the base is a slender rod which, when the palea is in place, is deeply imbedded in the opercular tissue. When in position these paleae are bent down close against the end of the operculum, more or less overlapping one another, their narrow ends meeting in the center of the operculum.

This portion called "head" presumably includes the prostomium and peristomium, though somite boundaries cannot be distinguished. On either side, postero-ventral to the base of the gill, is a tuft of setae, each seta straight, slender, sharp pointed and carries a fringe of short processes on either side.

The thorax is composed of three somites, each carrying a short vertically arranged torus which has on its outer margin two rows of setae. The larger of these (Fig. 5) have strong shafts and expand at the ends to form an asymmetrical plate whose outer margin is irregularly fringed with slender processes of which the longest is at the apex of the plate. Between the bases of some of these larger setae are much more slender needle-like setae with slightly bent outer ends.

In each of these three somites is also a ventral row of vertically arranged setae of two kinds. The larger ones (Fig. 6) are lanceolate in outline, their outer surfaces covered by small spines, the others are much smaller and not so definitely widened at the ends (Fig. 7).

The abdomen contains thirty or more somites. In each, on either side, there is a prominent finlike process which carries uncini on its outer margin. The first of these is the highest, its vertical length being almost as great as the body diameter. Later ones become successively shorter and the posterior ones are very short but protrude to a considerable distance from the body so that they appear as prominent narrow outgrowths from the surface on either side of each somite. The uncini (Fig. 8) are very small, each having seven teeth and a long slender basal process. Toward the ventral surface of each abdominal somite is a tuft of slender, sharp-pointed setae each carrying a double row of toothed plates. In profile only one row appears (Fig. 9). These are more prominent in posterior than in anterior somites.



Figs. 1 to 9. *Centrocorone spinifera*

Fig. 1. Anterior region of body seen from right side, ×5. Fig. 2. Ventral view of head, ×5. (Figs. 1 and 2 are partly diagrammatic.) Fig. 3. Outer palea, ×185. Fig. 4. Inner palea, ×185. Fig. 5. Large dorsal thoracic seta, ×185. Fig. 6. Larger ventral seta of thorax, ×185. Fig. 7. Smaller ventral seta of thorax, ×185. Fig. 8. Abdominal uncinus, ×250. Fig. 9. Detail of stalk of ventral abdominal seta, ×250.

Figs. 10 to 12. *Lepidonotus pallidus*. Fig. 10, prostomium, ×23; Fig. 11, neuropodial seta, ×180; Fig. 12, notopodial seta, ×180.

Gills in the form of slender cirri having one margin crenulated occur in the abdominal region, one pair to a somite on its dorsal surface. They are much larger anteriorly than posteriorly.

The caudal region is cylindrical and about as long as the last sixteen somites.

Having the opercular lobes fused, two sets of paleae and no dorsal hooks, these belong with the genus *Centrocorone* Grube.

The tubes form a dense mass of conglomerated pebbles.

The specimens were collected at Boca de Cangrejos in Puerto Rico by Mrs. Ana M. Diaz Collazo, to whose courtesy I am indebted for the opportunity of studying them.

The type is Cat. No. 2209 in the collection of The American Museum of Natural History.

The following new species of polychaetes appeared in collections sent me from Texas by Mr. Ottys Sanders, of Dallas, and by Mr. Robert L. Spiller, Jr., of the Clapp laboratories at Duxbury, Massachusetts. That a new species of *Nereis* should appear on the New England coast is quite unexpected, but I am unable to discover that any has hitherto been described with the peculiar tooth formula shown by the one here diagnosed.

Polynoidae

LEPIDONOTUS LINNAEUS

Lepidonotus pallidus, new species

Figures 10 to 12

Length, 13 mm.; width to ends of setae, 5 mm. The single specimen is a female with eggs. There are 12 pairs of elytra, completely covering the dorsum.

The prostomium (Fig. 10) is oval in outline, the antero-posterior diameter being a trifle longer than the transverse. The posterior margin is rounded but covered by a fold of the first somite and the antero-lateral angles are prolonged into the cirrophores of the lateral tentacles. The eyes are prominent, the anterior pair the larger, and lie at the very margin of the prostomium. The posterior pair are dorsal. Both have prominent lenses, their pigment brownish. The anterior fissure of the prostomium is filled with the heavy cirrophore of the median tentacle whose style is long and rather heavy at base, narrowing toward the end then expanding to a considerable swelling ending in a fine tip. Lateral tentacles are much smaller than the median. They are of uniform diameter until near the ends where they narrow, and they have no subterminal swellings. Tentacular cirri and all dorsal cirri are similar in form to the median tentacle. Palps about as long as median tentacle but heavier. The palps and all cirri are entirely free from surface ciliation.

The parapodia have heavy setal lobes in the neuropodium, their posterior lips vertical. There are two anterior lips; into the smaller of the two the acicula extends. The neuropodial setae are all alike, stout, slightly widened toward the ends, terminating in a sharp point only faintly bent. Near the widened portion are a few small pectinate plates (Fig. 11). The notopodium is indicated only by the point where the acicula reaches the surface and by the fan-shaped tuft of setae at that place. These setae are very long and slender with extremely attenuate tips. For the greater part of their course they carry two rows of pectinate plates (or else one row wider than the diameter of the stalk), leaving only the tips bare. In profile they show as a single row; in full face as a double one (Fig. 12). Figs 11 and 12 are drawn to the same scale. The ventral cirrus is short and slender, situated far from the parapodial base. The parapodium cavity as well as the general body cavity was filled with eggs.

The elytra so closely resemble the general body color that they are not easy to see, the most noticeable feature being a granulation visible under low power and due to surface papillae. The elytra are nearly oval in outline, their outer ends broader than the inner. Along the lateral border is a short row of cilia, the greater part of the outline being smooth. Very small papillae occur on the surface.

Collected at Freeport, Texas. The type is Cat. No. 2563 in The American Museum of Natural History.

LEPIDASTHENIA MALMGREN

Lepidasthenia lactea, new species

Figures 13 to 15

Length, 50 mm.; width of body, 2 mm. Prostomial width, 0.75 mm.

The prostomium is oval, its longer diameter transverse (Fig. 13), the anterior lateral angles being prolonged to form the cirrophores for the lateral tentacles. In the type specimen the pharynx was protruded so as to cause some distortion, but in that condition the prostomium is hardly one-fourth as wide as the first somite. The anterior eyes are at the widest part and only partially visible from above, the posterior eyes lie about half-way from anterior eyes to the posterior margin and ventro-laterally. The posterior part of the prostomium is dusted with a fine pigment and a similar dusting occurs on the cirrophores and styles of all tentacles. The cirrophores of the lateral tentacles are almost as long as the prostomium, the median heavier and longer than these. Styles of all tentacles are similar in form and size, the median being a trifle the longer. The tentacular cirri are similar to the lateral tentacles. The first setigerous somite has an elytron and a heavy ventral cirrus, the second has a small ventral and a heavy dorsal cirrus.

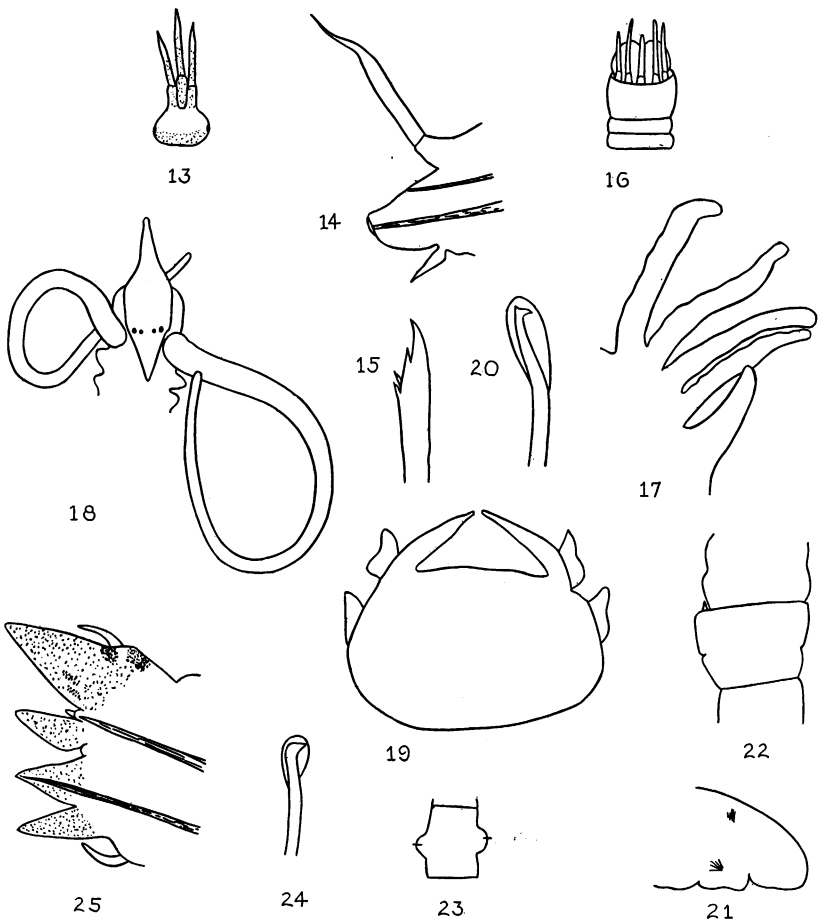
Elytra are carried on somites 2, 5, 7, etc. The first cover the head but later ones are too short

to meet either over dorsum or to overlap one another.

In the anterior end of body the only color is the dusting mentioned above. On the second setigerous somite there is a small dark spot on the dorsum. In later somites this pigment is in an oblong transverse patch lying on the intersomitic line. Sometimes two smaller ones on the mid-dorsal parapodial surface alternate with it. On the elytral surface is a dusting like that on the prostomium which more or less completely covers the antero-dorsal one-fourth of the elytron, occurring in irregular blotches elsewhere. This elytron coloration is the most noticeable of any coloring of the body.

There is one pair of anal cirri, heavy, with long, slender tips.

In a parapodium from fifteenth or sixteenth somite the neurosetal lobe is heavy, with lips of equal length (Fig. 14). The ventral cirrus is lanceolate in outline, its apex reaching end of setal lobe. The notopodium is represented by a very small elevation into which an acicula extends. The dorsal cirrus, on a heavy cirrophore,



Figs. 13 to 15. *Lepidasthenia lactea.* Fig. 13, prostomium, ×10; Fig. 14, parapodium, ×23; Fig. 15, seta, ×180.

Figs. 16, 17. *Marphysa aransensis.* Fig. 16, prostomium, ×5; Fig. 17, parapodium, ×45.

Figs. 18 to 20. *Nerine minuta.* Fig. 18, prostomium, ×23; Fig. 19, cross section of somite, ×23; Fig. 20, seta, ×250.

Figs. 21 to 24. *Capitellides teres.* Fig. 21, side view of head, ×23; Fig. 22, dorsal view of 9th somite showing copulatory hook, ×23; Fig. 23, posterior somite with tori, ×23; Fig. 24, uncinus, ×250.

Fig. 25. *Nereis paucidentata.* Parapodium, ×20.

is similar in outline to the tentacles. The neurosetae form a bundle of about ten, all alike, rather heavy, hooked at apices and with a very sharp sub-apical tooth. From this tooth the margin slopes in a straight line to the point of insertion of a few very small pectinate plates (Fig. 15). An indefinite number of very small setae may appear in the notopodium, in some cases only one or two in others a small bundle. They are very slender and curved, the convex margin of the curve carrying a line of small teeth. I could not determine whether these are separate teeth or fine pectinate plates.

The elytra are oval in outline, their margins and surfaces smooth.

Collected at Galveston, Texas. The type is No. 2565 in The American Museum of Natural History; the paratype is No. 20420 in the U. S. National Museum.

Leodicidae

MARPHYSA QUATREFAGES

Marphysa aransensis, new species

Figures 16 and 17

One incomplete and poorly preserved specimen which appears to be a new species. The following imperfect diagnosis is recorded here for future reference.

The peristomium is 1.75 mm. wide, its width being greater than its length. The prostomium (Fig. 16) has two well-marked lobes and is about as long as the median portion of the peristomium. The tentacles are slender and are longer than the peristomium by from one-quarter to one-third of their length. The middle tentacle is shorter than the others, but this may be accidental. The peristomium is not quite as long as the three following somites which are about as wide as the peristomium. The somites behind the fourth gradually increase in width to a maximum at about the sixteenth.

Gills begin as single filaments at about somite 35. Later ones have four or five branches (Fig. 17). Because the posterior end of the body is absent, nothing can be said about the gill arrangement there. The dorsal cirrus is relatively large; in this respect quite different from *M. viridis* Treadwell (1921, p. 64) which this species resembles in some other respects. Simple setae are long acicular, compound ones have long sharp-pointed terminal ones much like those in *M. viridis*. I was unable to find any pectinate setae.

Collected at Aransas Pass, Texas. The type is Cat. No. 2567 in The American Museum of Natural History.

Spionidae

NERINE JOHNSTON

Nerine minuta, new species

Figures 18 to 20

A sexually mature female is 10 mm. long and 0.5 mm. wide. The prostomium (in preserved material) has a heavy base (Fig. 18), and at a distance from its posterior end about equal to its basal width it narrows to the base of the terminal portion which is an acute cone. From the level of the eyes it narrows posteriorly to form a conical structure ("occipital tentacle" of McIntosh) which extends backward between the large tentacles. This lies over the dorsum of the first setigerous somite and is more or less fused with it. I was unable to determine the extent of this fusion. The four eyes lie in a nearly straight transverse line, the outer ones a trifle larger than the inner. The tentacles are large and long, the posterior two-thirds of each having a smooth surface; the anterior third is roughened with transverse markings. The first somite lies ventral to the prostomium, its lateral margins visible from above. Gills begin on second setigerous somite and continue to posterior end of body. They are elongate oval in outline, anterior ones larger than posterior and are densely ciliated along their margins. Some, especially anterior ones, narrow abruptly at the apices. Pygidium cup-shaped. No anal cirri.

A cross section of a somite from posterior region of the body is shown in figure 19. At base of gill is an unsymmetrically bifid lamella with another lamella ventral to this and just dorsal to the tuft of notopodial setae. Anterior setae are all long slender acicular and faintly bilimbate. About the thirty-fifth setigerous somite hooked setae appear and are the only ones found in posterior neuropodia. In the notopodia only the acicular setae occur. The hooked setae have noticeably curved shafts and terminal and subterminal teeth covered by a hood (Fig. 20).

The type is from Port Aransas, Texas, and is Cat. No. 2566 in The American Museum of Natural History. The paratype is No. 20419 in the U. S. National Museum.

The specific name is given because of the small size as compared with most others of this genus. *N. cirratulus* and *N. foliosa* recorded by McIntosh (1915, pp. 142 and 148) are from 6 to 8 inches long, while these are sexually mature at a length of 10 mm. McIntosh thought that *N. cirratulus* is synonymous with *N. agilis* Verrill (1874, p. 600), and *N. heteropoda* Webster, (1879, p. 49) but his figure of *N. cirratulus* is entirely different from that given by Webster for *N. heteropoda*. It is possible that *N. minuta* and *N. agilis* may be synonymous, although Verrill said that in the latter the bases of the tentacles are contiguous while in the former they are separated by the width of the "occipital tentacle." Verrill gave no figures of *agilis* nor did he describe the setae.

Capitellidae

CAPITELLIDES MESNIL

Capitellides teres, new species

Figures 21 to 24

A sexually mature female is 4 mm. long for the first ten somites. It is incomplete posteriorly so that no further measurements are possible.

In a side view (Fig. 21), the dorsal margin of the prostomium slopes regularly to the anterior border. On the first somite (fused first and second?) are setae tufts. From the prostomial border the prostomial height increases, reaching its maximum on somite 6, from there is a decrease to somite 10 and from there backward a uniform height. Beginning with somite 8, the somites are biannulate; the anterior ring on the seventh is marked by a denser granulation. On the dorsal surface of the ninth is a copulatory hook (Fig. 22). All of the setae in the first eight setigerous somites are acicular, behind this all are hooked uncini. Anterior somites have smooth surfaces, the setae arising direct from the body wall; posterior ones are much narrower and shorter, the uncini inserted in definite tori (Fig. 23). The simple setae are geniculate, bilimbate and sharp-pointed and occur in groups of about ten. The uncini (Fig. 24) have a sharp terminus and a hood.

Collected at Port Aransas, Texas. The type is Cat. No. 2568 in The American Museum of Natural History.

Nereidae

NEREIS CUVIER

Nereis (Neanthes) paucidentata, new species

Figure 25

Characterized especially by the prominent pigmentation of the notopodia, this being most noticeable in the posterior somites, and by the very feeble development of the paragnaths.

Tooth formula: I, 1; II, 3–6 in a bunch; III, irregular double row, the posterior paragnaths larger than the anterior; IV, a diagonal double row; V, 1; VI, 1; VII and VIII, a double row, anterior and posterior ones irregularly alternating, the anterior ones the larger. The jaw is light brown, darker on the outer margin and with five or six prominent teeth beside the terminal fang.

The body was much contracted in all of the specimens so that it was not possible to get accurate figures of the prostomium or accurate measurements of size. The type is about 40 mm. long and 5 mm. wide. In the prostomium the basal portion is broad but it narrows immediately in front of the eye level and its anterior margin is not more than one-fourth as wide as the posterior. The tentacles are relatively heavy, conical, in contact at their bases. The first dorsal tentacular cirrus reaches to the posterior border of the fourth somite, the first ventral is no longer than the prostomium, the second dorsal reaches to eleventh somite and the second ventral is similar to the first, but is a little longer and more slender. These measurements are on preserved material. The palps were much contracted in all specimens but they appear to be shorter than the tentacles.

The peristomium is about one-half as long as the prostomium and twice as long as somite 2. Later somites lengthen until they reach a length about twice that of somite 2. From the anterior end the body widens to the region of the tenth somite and from here is a gradual narrowing toward the posterior end, the final narrowing near the end being very abrupt.

In the preserved material the anterior body region is opaque, with pigmentation on the parapodia. Posteriorly the body becomes more translucent and the pigmentation is its most prominent feature. On the posterior half of the body of the type there is an obscure transverse row of pigment across the middle line of each somite with a short and much more prominent row where the parapodium joins the body. Outside this, on the dorsum of the parapodium, are two prominent patches, one just at the base of the dorsal cirrus, the other farther in toward the median body line. Other pigment is scattered in irregular fashion through the parapodial lobes (Fig. 25).

In a parapodium from near the middle of the body (Fig. 25), all of the lobes are conical, the dorsal notopodial one being much the largest. The dorsal cirrus is situated just at the base of the dorsal lobe the ventral one at a short distance from the base of the ventral one. The ventral notopodial lobe and the two lobes of the neuropodium are about equal in size. All setae have camerated basal joints which in most cases are homogomph, a very few heterogomph being among the neurosetae. The terminal joints are all alike, slender, toothed on one margin and very fine pointed.

The type is Cat. No. 2564 in The American Museum of Natural History and was taken at Charlestown, Mass. Another specimen was collected at Groton, Conn.

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