ON THE SOUTH AFRICAN POLYPLACOPHORA.

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Read March 9th, 1894.

The following paper is an attempt to bring together the more important facts known concerning the Chitons of South Africa, in order that some assistance may be rendered to the next compiler of this fauna. I regard the known fauna as consisting of sixteen species, and the number of those expunged and placed as synonyms as amounting to twelve. In dealing with Mr. Sowerby's list[1] I expunge four, place one as a synonym, and add three. I am pleased to say that I have not felt compelled to describe any new species.

The most striking fact is the range of *Ischnochiton lentiginosus*, which is found in South Africa and New South Wales, and on which remarks will be found later. The other species found out of South Africa are *Ischnochiton oniscus*, *Acanthochites Garnoti*, *Acanthopleura afra*, and *A. Quatrefagesi*.

Callochiton castaneus, Wood, 1815. General Conchology, p. 13. Occurs near the Cape of Good Hope. The valve slits are as follows: anterior 20, median 5, posterior 18. There is in the British Museum (Natural History) a specimen under the name of *C. fulgetrum*, Reeve (1847), of unknown locality, which is of a marked South African form. The difference seems to be that in *C. fulgetrum* the faint granular sculpture is slightly stronger than in *C. castaneus*, while the line dividing the median and lateral areas is not so marked: further specimens will probably show them to be identical.

Chætopleura Watsoni, Sowerby, 1840. Charlesworth's Mag. Nat. Hist. vol. iv. p. 288, Cape of Good Hope. Valve slits: anterior 7, median 1, posterior 11. The species was originally described by Quoy and Gaimard as *Chiton castaneus*. The name was changed by Sowerby on the ground that there was already a *Chiton castaneus*, Wood; and though these species, as now understood, belong to different genera, I think less inconvenience will arise by leaving it as *Chætopleura Watsoni* than by reverting to the old name.

Chætopleura pustulata, Krauss, 1848. Die Sudafrik. Moll. p. 42. Natal Coast (Wahlberg). I place this here with a little doubt, as I am only acquainted with it from Krauss' work. Valve-slits: anterior 9, median 1, posterior 8. The sculpture is beaded on the anterior and posterior valves, and partly beaded, partly latticed, on the median, while the girdle has a few hairs scattered along it.

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[1] Marine Moll. of S. Africa, 1892, pp. 50, 51.

Dinoplax gigas, Gmelin, 1788. Linn. Syst. Nat., ed. 13, p. 3206. Table Bay, Natal, Port Elizabeth, etc. Valve-slits: anterior and posterior 8–10, median 1. A very striking and well-known species.

Ischnochiton oniscus, Krauss, 1848. Die Sudafrik. Moll. p. 39. Natal (Krauss); Lea Point, near Cape Town ("Challenger," as *I. viridulus*, Couthouy); Tristan d'Acunha (Pilsbry, as *I. Macgillivrayi*, Cptr. MS.). I have carefully removed and inspected a median valve of the "Challenger" specimen, and from the fact that it has only one median slit I am convinced that it is not *I. viridulus*, which has from two to three median slits, and therefore belongs to the section *Radsiella*. I am unable to separate the shell from *I. oniscus*. I have had a series of specimens given me said to have been named by Mr. Sowerby "*Chiton marginatus*, Pennant"; these also I consider to be *I. oniscus*.[1] Mr. Pilsbry[2] has described a species from Carpenter's MSS. as *I. Macgillivrayi*, citing two tablets from Tristan d'Acunha, and one from St. Paul's, in the Cuming Collection in the British Museum (Natural History). The Tristan d'Acunha shells are, I think, *I. oniscus*, and have valve-slits, anterior and posterior 13, median 1; the St. Paul's shell is very nearly allied, but distinct, and has valve-slits, anterior 12, median 1, posterior 11. This last specimen also agrees with Carpenter's dimensions, and I therefore regard it as the type of *I. Macgillivrayi*. There is another tablet also from St. Paul's, Indian Ocean, collected by Macgillivray on the voyage of the "Herald," and received by the Museum in 1859; Cuming's specimen probably came from this source. The indistinct radiating wrinkles on the median valves of *I. Macgillivrayi* assist in separating them. Mr. Sowerby recorded *I. Macgillivrayi*, from the Cape, in his work; at this time no description of the species had appeared, and he was probably trusting to the tablets in the British Museum (Natural History). According to Krauss the valve-slits in *I. oniscus* are: anterior and posterior 10, median 1. The habitat of "Orange Harbour, Cape of Good Hope," given in the "Challenger" Report, is of course an error for "Orange Harbour, S. America."

Ischnochiton lentiginosus, Sowerby, 1840. Charlesworth's Mag. Nat. Hist. iv. p. 293. Cape Coast (Krauss, as *C. cyaneopunctatus*); Australia (Dr. Dieffenbach); Port Hackin, New South Wales (Dr. Cox). Mr. Pilsbry[3] states that "except in being somewhat larger, and said to be from a different locality, this seems to be absolutely the same as *I. cyaneopunctatus*, Krauss. It is likely that the Australian habitat assigned to *lentiginosus* is a mistake."[4] The British Museum (Natural

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[1] Since this paper was read Mr. Pilsbry has described ("Nautilus," vol. viii. p. 9) specimens from, in all probability, the same source, under the name of *Ischnochiton Elizabethensis*. My specimens appear to be punctate rather than, as he states, granulate; but I forbear further comment as I have no authentic specimens of *I. oniscus* before me.

[2] Man. Conch. ser. I. vol. xiv. p. 101.

[3] *Ibid.* p. 135.

[4] See, however, Man. Conch. ser. I. vol. xv. p. 82, published since this paper was written and read.

History) has recently received New South Wales specimens from Dr. Cox, confirming Sowerby's locality of "Newcastle, Australia," which town is in New South Wales. They seem to be indistinguishable from *I. cyaneopunctatus* except in possessing one slit less in the anterior and posterior valves, and this I think is hardly enough to justify their being made into a separate species. The gills run the whole length of the foot; the girdle is light green with darker bands; the valves are tinted with pink inside, and the sculpture is micropunctate on the median, and smooth on the lateral, areas. The blue markings are very variable, and are very poorly represented on the figure in the "Conchological Illustrations." Krauss' South African record has never, I believe, been confirmed: can it be erroneous? A range of locality from New South Wales to South Africa is very wide for a species of *Polyplacophora*, generally a restricted group. Valve-slits (in *I. lentiginosus*): anterior 11, median 1, posterior 12.

Ischnochiton textilis, Gray, 1828. Spic. Zool. pt. 1, p. 5. Cape of Good Hope (Carmichael); Table Bay, Port Elizabeth, etc. (Sowerby). There is a var. *punctulata*, Krauss, which is hardly worthy of the name, as the type is also punctate. At first sight the species resembles a large *I. oniscus*, but the striæ on the median valves are stronger in *I. textilis*. Valve-slits: anterior and posterior 12, median 1.

Ischnochiton pertusus, Reeve, 1847. Conch. Icon. pl. xvi. fig. 88. Simons Bay, according to Hennah (Krauss). It is placed by Mr. Pilsbry in the group of *I. Rissoi*, Payr., but seems nearer to *I. textilis*. Valve-slits: anterior 12, median 1, posterior 9.

Ischnochiton tigrinus, Krauss, 1848. Die Sudafrik. Moll. p. 38. False Bay (Krauss). There is a var. *unicolor*, Pilsbry (1893), which differs from the type in the absence of the longitudinal stripes. The species belongs to the section *Radsiella*. Valve-slits: anterior 18, median 2–3, posterior 12–13.

Plaxiphora Wahlbergi, Krauss, 1848. Die Sudafrik. Moll. p. 36. Table Bay (Krauss). Valve-slits: anterior 8, median 1, posterior none.

Acanthochites Garnoti, Blainville, 1825. Dict. Sci. Nat. xxxvi. p. 552. Seapoint, near Cape Town ("Challenger"); Table Bay, Natal, Port Elizabeth, etc. (Sowerby); Mauritius and Reunion (von Martens). Spelt by Mr. Sowerby *Garneti*. *C. Danielli*, Sowerby (figured, but not described, in the "Conchological Illustrations"), is a synonym. The only difference appears to be that in *C. Danielli* there are two more tufts on the girdle behind the posterior valve; the specific relations are probably precisely similar to those of *Acanthochites fascicularis*, L., and its variety *gracilis*, Jeffreys.

Chiton nigrovirens, Blainville, 1825. Dict. Sci. Nat. xxxvi. p. 538. Cape of Good Hope (Blainville); Seapoint, near Cape Town ("Challenger"); Table Bay and Natal (Sowerby). Spelt by Mr. Sowerby *nigrovirescens*. *C. capensis*, Gray (1828), is a synonym. Valve-slits: anterior 12, median 1, posterior 14–15. The median sinus has 8 denticulations.

Chiton tulipa, Quoy and Gaim., 1834. Voy. Astrolabe, Zool. iii.

p. 389, Cape of Good Hope. *C. cymbiola*, Sowerby (1840), is a synonym. Valve-slits: anterior 8, median 1, posterior 12.[1]

Acanthopleura afra, Rochebrune, 1882. Bull. Soc. Philom. (7), vi. p. 192. Cape of Good Hope (Verreaux); Madagascar (Admiral Cloué). I have been much in doubt whether to admit this species and the next into this list. The author's determinations are so faulty, his descriptions so incomplete, his figures (when present) so deceptive, that one hesitates to follow him; but it is perhaps better to admit his species with a caution than to omit them simply because one cannot follow the description and no specimens have been seen in this country. A shell with blue markings and a red girdle hidden by yellow setæ.

Acanthopleura Quatrefagesi, Rochebrune, 1881. Journ. de Conch. xxix. p. 44. Cape of Good Hope (Verreaux); Point des Mannelles, etc. (Rochebrune). Stands in the same position as the last; it appears to have been omitted from the Zoological Record. The shell is said to be indistinctly granulated with a black spiny girdle.

Onithochiton literatus, Krauss, 1848. Die Sudafrik. Moll. p. 36. Natal (Krauss). This and the last two are not mentioned by Mr. Sowerby. It may be separated from *P. Wahlbergi* by the presence of eyes on the lateral areas, by the greater proportionate size of the girdle, and by the grooved sculpture of the valves. Valve-slits: anterior 8, median 1, posterior none.

The following, in addition to those discussed above, have been recorded from South Africa, but I do not think they properly belong to its fauna.

Ischnochiton pruinosus, Gould. A South American species: recorded from Port Elizabeth by Mr. Sowerby as *Chiton pruinosus*.

Plaxiphora Carmichælis, Gray. Mr. Sowerby gives in his work "*Chiton Carmichælis*, Wood," on the authority of Wood. The species was figured but not described by Wood[2] in 1828, and later in the same year it was described by Gray.[3] It is the same as *C. setiger*, King (1831).

Mr. Pilsbry[4] uses the name of *P. setiger* on the grounds that it is not quite certain that Gray's shell was the same species, and that Gray's description was a "faulty definition." I have seen the type of *P. Carmichælis*, and the species are, I think, identical. Gray's description is not so good a one as we should require to-day, but his types exist; they are, I believe, the same species; the name has three years priority, and therefore I use it. It is a South American species, and the Cape locality was an error.

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[1] Since this paper was written and read Mr. G. B. Sowerby has recorded (Journ. Conch. vii. p 373) the occurrence of *Chiton lyratus*, Sow., at the Cape. It was only known previously from West Africa (Reeve). *C. Canariensis*, D'Orb., is, I think, the same species, and if so this latter name has priority.

[2] Index Testaceologicus, suppl. pl. 1.

[3] Spic. Zool. p. 6.

[4] Man. Conch. ser. I. vol. xiv. p. 317.

Acanthochites spiculosus, Reeve. Mr. Sowerby[1] recorded "*Chiton spiculosus*, Reeve," from Port Elizabeth, but it is omitted in his later work. It is a West Indian species.

Acanthochites Carpenteri, Pilsbry. Port Elizabeth (Pilsbry). Described[2] from a series of drawings left by Dr. Carpenter—surely the mania for description can no farther go! If the drawings are accurate, and if they are taken from a South African shell, the species seems different from anything else from the neighbourhood. The girdle is large in proportion to the exposed portions of the shell, it is much produced towards the head, and there are no sutural tufts, but pores are present.

Chiton olivaceus, Spengler. Recorded from "Table Bay, Cape of Good Hope," under the name of *Forma africana*, by Rochebrune.[3] His identifications are, however, so uncertain that I hesitate to follow him. The reference of this form to the present species is doubtful (Pilsbry).

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[1] Journal of Conchology, vol. v. p. 13.
[2] Man. Conch. ser. I. vol. xv. p. 35.
[3] Journ. de Conch. xxxi. (1881), p 42.