

ARGULUS PURPUREUS (RISSE, 1827), A JUNIOR SYNONYM
OF ARGULUS VITTATUS (RAFINESQUE-SCHMALTZ, 1814)
(BRANCHIURA, ARGULOIDA)

BY

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ABSTRACT

The binomen *Argulus purpureus* (Risso, 1827) is a junior synonym of *Argulus vittatus* (Rafinesque-Schmaltz, 1814), and the generic name *Diprosia* is a junior synonym of *Argulus* Müller, respectively, as first pointed out by Lipke B. Holthuis in 1954. Continued usage of *Argulus purpureus* indicates that *Argulus vittatus* has been ignored. In addition, *Argulus purpureus* should be followed by "(Risso, 1827)" rather than "Risso, 1816" or "Risso, 1827" because the species was originally described under the generic names, *Binoculus* Geoffroy St.-Hilaire, 1762 (that was later suppressed) and *Agenor* Risso, 1827.

RÉSUMÉ

Le binôme *Argulus purpureus* (Risso, 1827) est un synonyme plus récent d'*Argulus vittatus* (Rafinesque-Schmaltz, 1814), et le nom générique *Diprosia* est un synonyme plus récent d'*Argulus* Müller, respectivement, comme indiqué pour la première fois par Lipke B. Holthuis en 1954. L'usage continu d'*Argulus purpureus* indique qu'*Argulus vittatus* a été ignoré jusqu'à présent. De plus, *Argulus purpureus* devrait être suivi de "(Risso, 1827)" plutôt que "Risso, 1816" ou "Risso, 1827" puisque l'espèce a été décrite à l'origine sous les noms génériques *Binoculus* Geoffroy St.-Hilaire, 1762 (supprimé plus tard) et *Agenor* Risso, 1827.

INTRODUCTION

During an investigation of the carcinological works of Constantine Samuel Rafinesque, Holthuis (1954) discovered that Rafinesque-Schmaltz (1814) had described a species of *Argulus* under the name *Diprosia vittata* (gen. n., sp. n.). Holthuis felt there was no doubt concerning the identity of the taxon as *Argulus purpureus* (Risso, 1827) and corrected the name as *Argulus vittatus* (Rafinesque-Schmaltz, 1814), but no authors since then have mentioned *Argulus vittatus* and continue to use *Argulus purpureus*. The nomenclatural history of the species will be examined herein.

DISCUSSION

Rafinesque-Schmaltz's (1814: 25) original description is as follows:

XIV. G. DIPROSIA. Manteau déprimé oblong fendu sans articulations postérieurement, queue inférieure plus longue et échancrée, deux yeux lisses en dessus, bouche inférieure, corps étroit articulé en dessous, 6 paires de jambes à 3 articles, 2 suçoirs antérieurement en dessous. — Obs. Ce genre est très-singulier, le caractère des suçoirs est peut-être unique parmi les Crustacés; il appartient à l'Ordre *Pseudopia*, et famille *Bopyria*.

51. *Diprosia vittata*. Blanc bleuâtre rayé longitudinalement de pourpre-violet, dos lisse légèrement [sic] convêxe. — Parasite du *Sparus erythrinus*, la circulation du sang y est frappante.

The mention of 6 pairs of legs by Rafinesque-Schmaltz is incorrect, but considering that the species described by both him and Risso had two suction cups for the first maxillae, had the same characteristic purple coloration (as longitudinal stripes), occurred in the same geographic area, and had the same oblong shape, it seems Holthuis (1954) was correct in his decision. Therefore, we should recognize *Argulus vittatus* (Rafinesque-Schmaltz, 1814) as a senior synonym of *Argulus purpureus* (Risso, 1827). Risso (1816) originally described "*purpureus*" in the genus *Binoculus* Geoffroy St.-Hilaire, 1762 (as *B. bicornutus*) and later transferred it to *Agenor* Risso, 1827, giving it a new specific epithet, "*purpureus*", which was transferred to *Argulus* by Thorell (1864, 1866); therefore, "(Risso, 1827)" should be used rather than "(Risso, 1816)". *Binoculus* Geoffroy St.-Hilaire is not an available generic name because it was published in a work rejected by the ICZN (1954, Opinion 228, Name No. 1104). Forest (1958) provided corrections for the dates of publications by Risso (1827) and Lucas (1846); the former was dated 1826 on the title page but was issued in 1827, and the latter, usually cited as 1849, was actually published in 1846. Thorell (1864) thought *Argulus purpureus* may be generically distinct and if so, should be placed in the genus *Agenor* Risso. Thorell (1865) considered his newly-described *Argulus dactylopteri* to be closely related to *A. purpureus* and applied *Agenor* as the subgeneric designation. If *Argulus vittatus* is transferred to another genus in the future, the genus *Diprosia* Rafinesque-Schmaltz, 1814, would be the senior available name, rather than *Agenor* Risso, 1827.

Rushton-Mellor (1994a) discussed another nomenclatural issue related to *Argulus purpureus* and *Argulus giganteus*. *Argulus giganteus* Ramakrishna, 1952 needs a new name because it is a junior homonym of *Argulus giganteus* Lucas, 1846, and *Argulus giganteus* Lucas, 1846 was considered to likely be a synonym of *Argulus purpureus* (Risso, 1827) by Thorell (1864, 1866) and Wilson (1902). Assuming the latter statement is indeed true, the correct synonymy would be (host fish nomenclature was updated using Eschmeyer et al. (1998), Smith-Vaniz & Randall (1994), and ICZN (1996)):

Argulus vittatus (Rafinesque-Schmaltz, 1814)

- Diprosia vittata* Rafinesque-Schmaltz, 1814: 25, from *Sparus erythrinus* Linnaeus, 1758 (currently *Pagellus erythrinus* (Linnaeus, 1758)); Desmarest, 1823: 392; Desmarest, 1825: 356, 357 [cited in Holthuis, 1954].
- Binoculus bicornutus* Risso, 1816: 170-172, from "Caranx magnifique" [p. 169, vernacular name] = *Caranx dentex* or *Pseudocaranx dentex* (Bloch & Schneider, 1801).
- Agenor purpureus* Risso, 1827: 139, pl. 5 fig. 28.
- Argulus giganteus* Lucas, 1846: 83-84, pl. 8 fig. 9, from a ray; Thorell, 1864: 58-59; Thorell, 1866: 438-439.
- Argulus purpureus* Risso: Thorell, 1866: 158-162, hosts on pp. 150, 161, 162, *Pagellus erythrinus*, ? *Selenia luna* (Geoffroy St.-Hilaire), "Caranx magnifique," and *Citula banksii* Risso, 1820 (the latter three names = *Caranx* or *Pseudocaranx dentex*); Wilson, 1902: 723-724, pl. 23 fig. 65; Cuénot, 1912: 117, 125; Roland & Delamare Deboutteville, 1966: 1084; Rushton-Mellor, 1994a: 48; Rushton-Mellor, 1994b: 52, 61, fig. 6 no. 12.
- Argulus purpureus* (Risso): Thorell, 1864: 20-25, 58, pl. 3 figs. 20-28, pl. 4 figs. 29-32; Thorell, 1865: 609; Thorell, 1866: 437, 438; Thorell, 1867: 45; Monod, 1928: 247, 259, 261, 274; Yamaguti, 1963: 327.
- Argulus purpureus* Thorell: Riggio, 1901: 19; Riggio, 1904: 93; Rushton-Mellor, 1994a: 33. [Errors in author's name.]
- Argulus bicornutes* (Risso): Thiele, 1904: 46. [Misspelling of specific name.]

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REFERENCES

- CUÉNOT, L., 1912. Contributions à la faune du bassin d'Arcachon. VI. Argulidés. Description d'*Argulus arcassonnensis*, nov. sp. Bulletin de la Station biologique d'Arcachon, **14** (1): 117-127, 2 pls.
- ESCHMEYER, W. N., C. J. FERRARIS, JR., M. DANG HOANG & D. J. LONG, 1998. Part I. Species of fishes. In: W. N. ESCHMEYER (ed.), Catalog of fishes. California Academy of Sciences, Special Publication, **1** (1): 25-958; **1** (2): 959-1820.
- FOREST, J., 1958. Sur la nomenclature des Pagures des mers Françaises. Bulletin Muséum National Histoire naturelle, Paris, (2) **30** (1): 94-100.

- HOLTHUIS, L. B., 1954. C. S. Rafinesque as a carcinologist, an annotated compilation of the information on Crustacea contained in the works of that author. Zoologische Verhandelingen, Leiden, **25**: 1-43.
- International Commission on Zoological Nomenclature (ICZN), 1954. Opinion 228. Rejection for nomenclatural purposes of Geoffroy, 1762, Histoire abrégée des Insectes qui se trouvent aux environs de Paris. Opinions and declarations rendered by the International Commission on Zoological Nomenclature, **4**: 209-220.
- —, 1996. Opinion 1841. *Scomber dentex* Bloch & Schneider, 1801 (currently *Caranx* or *Pseudocaranx dentex*) and *Caranx lugubris* Poey, [1860] (Osteichthyes, Perciformes): specific names conserved. Bulletin zoological Nomenclature, **53** (2): 140-141.
- LUCAS, P. H., 1846. Crustacés, arachnides, myriapodes, et hexapodes. Exploration scientifique de l'Algérie pendant les années 1840, 1841, 1842. Sciences physiques. Zoologie I. Histoire naturelle des animaux articulés (1): 1-403, pls. 1-8. (Paris).
- MONOD, TH., 1928. Les Argulidés du musée du Congo. Inventaire systématique, comprenant la description d'*Argulus Schoutedeni* nov. sp., et Liste générale critique des Branchiures africains, tant marins que dulcaquicoles. Revue Zoologie Botanique Africaines, **16** (3): 242-274.
- RAFINESQUE-SCHMALTZ, C. S., 1814. Précis des découvertes et travaux somiologiques de Mr. C. S. Rafinesque-Schmaltz entre 1800 et 1814. Ou choix raisonné de ses principales découvertes en zoologie et en botanique, pour servir d'introduction à ses ouvrages futurs: 1-55, pls. (Palermo; lithoprint facsimile re-edition in 1948 by Peter Smith, The Murray Printing Company, Wakefield, Massachusetts).
- RIGGIO, G., 1901. Contributo allo carcinologia del Mediterraneo [abstract]. Monitore zoologico Italiano, **11** (suppl.): 19-20.
- —, 1904. Contributo alla carcinologia del Mediterraneo. I. Nota sopra alquanti crostacei nel mare di Messina. Il Naturalista Siciliano, **17**: 93-96, 117-120, 134-140, pl. 2.
- RISSO, A., 1816. Histoire naturelle des crustacés des environs de Nice: 1-175, pls. 1-3. (Librairie Grècque-Latine-Allemande, Paris).
- —, 1827. Histoire naturelle des principales productions de l'Europe méridionale et particulièrement de celles des environs de Nice et des Alpes Maritimes, **5**: 1-403, pls. 1-10. (F. G. Levrault, Paris).
- ROLAND, C. & C. DELAMARE DEBOUTTEVILLE, 1966. Note comparative sur les différentes espèces Européennes du genre *Argulus* (Crustacea Branchiura). In: A. CORRADETTI (ed.), Proceedings of the first international congress of parasitology, **2**: 1083-1084. (Pergamon Press, Oxford, and Tamburini Editore s.p.a., Milano).
- RUSHTON-MELLOR, S. K., 1994a. The genus *Argulus* (Crustacea: Branchiura) in Africa: redescrptions of type-material collected by W. A. Cunnington during the Lake Tanganyika Expedition in 1913, with notes on *A. giganteus* Lucas and *A. arcassonensis* Cuénot. Systematic Parasitology, **28** (1): 33-49.
- —, 1994b. The genus *Argulus* (Crustacea: Branchiura) in Africa: identification keys. Systematic Parasitology, **28** (1): 51-63.
- SMITH-VANIZ, W. F. & J. E. RANDALL, 1994. Case 2898. *Scomber dentex* Bloch & Schneider, 1801 (currently *Caranx* or *Pseudocaranx dentex*) and *Caranx lugubris* Poey, [1860] (Osteichthyes, Perciformes): proposed conservation of the specific names. Bulletin zoological Nomenclature, **51** (4): 323-329.
- THIELE, J., 1904. Beiträge zur Morphologie der Arguliden. Mitteilungen zoologischen Museum Berlin, **2** (4): 1-51, pls. 1-4.
- THORELL, T., 1864. Om tvenne Europeiske Argulider; jemte anmärkningar om Argulidernas morfologi och systematiska ställning, samt en öfversigt af de för närvarande kända arterna af

- denna familj. Oefversigt af Kongliga Vetenskaps-Akademiens Förhandlingar, **1864** (1): 7-72, pl. 2-4.
- —, 1865. Om *Argulus dactylopteri*, en ny vestindisk hafs-argulid. Oefversigt af Kongliga Vetenskaps-Akademiens Förhandlingar, **1864** (10): 609-614, pl. 16 figs. 1-13.
- —, 1866. On two European Argulidae, with remarks on the morphology of the Argulidae and their systematic position, together with a review of the species of the family at present known. *Annals Magazine natural History*, (3) **18**: 149-169, 268-286, 436-451.
- —, 1867. On *Argulus dactylopteri*, a new marine argulid from the West Indies. *Annals Magazine natural History*, (3) **19**: 45-49.
- WILSON, C. B., 1902. North American parasitic copepods of the family Argulidae, with a bibliography of the group and a systematic review of all known species. *Proceedings U.S. national Museum*, [for 1903] **25**: 635-742.
- YAMAGUTI, S., 1963. *Parasitic Copepoda and Branchiura of fishes*: 1-1104. (Wiley Interscience Publishers, New York).