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Sir Richard Owen's fly, *Gyrostigma rhinocerontis* (Diptera: Oestridae): correction of the authorship and date, with a list of animal names newly proposed by Owen in his little-known 1830 catalogue

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Abstract

The authorship and date of publication of *Oestrus rhinocerontis* is corrected from the Rev. F.W. Hope in 1840 to Sir Richard Owen in 1830. A list of new names proposed in Owen (1830) is given, many of which are earlier than published elsewhere and have been missed by previous workers. Additionally, the name *Gyrostigma rhinocerontis bicornis* Brauer is shown to be an available name dating from Brauer (1896).

Key words: Diptera, Oestridae, *Oestrus*, *Gyrostigma*, nomenclature

Introduction

The largest fly in Africa, *Gyrostigma rhinocerontis* (Fig. 1), a rhinoceros stomach bot fly recently discussed in an excellent overview article by Barraclough (2006), has long been attributed to the Rev. F.W. Hope (1840) in his paper on the bots of humans. In that paper, there is no description of the fly but the name is mentioned as a bot of the rhinoceros, named as "*Oestrus rhinocerontis*, Owen", and illustrated in figures 1 and 1a of plate 22 (Fig. 2) that accompanied that work (the illustration of it making the name available). Despite future workers giving credit of the name to Hope, Hope was correct when attributing the name to Owen, yet apparently the source of Owen's authorship has not been traced until now.

Discovery of an earlier date

Recent work by a colleague on the dating of decapods led to the discovery of a work by Owen (1830) in which Owen had made an inventory of the spirit collections of the Royal College of Surgeons in London. The catalogue by Owen (Fig. 3) contained some names of crabs that were earlier than subsequent publications. I examined the contents of that work and found a few names of previously described species, but only one new fly name. It is listed with scanty but enough characters to make the name available there as *Oestrus rhinocerontis* (Fig. 4). Thus, the year of publication of this name should be 1830 and not 1840, and the work by Hope (1840: 259, pl. 22, figs. 1, 1a) is thus merely a listing of the earlier publication of the name and not a new proposal of the name.

The question of authorship

Changing the date of availability of *Oestrus rhinocerontis* from 1840 to 1830 is clear. However, authorship of the 1830 name is a bit more complicated. The ICZN *Code* (Article 50) (I.C.Z.N. 1999) states that if there is no evidence within the work as to authorship of the name, the author should be considered anonymous. There is no author listed on the title page of the 1830 catalogue and there is no author for the "Advertisement" at the beginning

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of the volume. However, biographers and bibliographers of Owen (Owen 1894; Sherborn 1894) give clear evidence that Owen is the author of this volume. Examining the contents shows there are a number of instances where Owen's name is indicated, initially as "R. Owen" and subsequently by his initials "R.O." appended to new names (see Table 1 below) as well as associated with an editorial footnote (p. 35). There are no initials for a few new names, including *Oestrus rhinocerontis*, which further compounds the question of authorship of those names in particular. However, the evidence that best supports Owen as author of the entire work was made by Townsend (1940) in the third supplement volume (overall volume VIII) to the catalogue of the library of the British Museum (Natural History). Townsend (1940: 1102) mentioned the authorship of Owen for the 1830 work in an annotation under the "Royal College of Surgeons" entry stating: "The author's initials appear at the end of a footnote on *p. 35*. On the recto of the fly-leaf to Owen's MS. dedication of 'This is his first work' to his Mother".

FIGURE 1. Adult *Gyrostigma rhinocerontis* Owen. Photo used with permission of the Natural History Museum, London.

Thus, the correct citation of the original description and Hope's (1840) listing of this fly should be:

Gyrostigma rhinocerontis ([Owen])

Oestrus rhinocerontis [Owen], 1830: 143.
Oestrus rhinocerontis: Hope, 1840: 259; pl. 22, figs 1, 1a (subsequent usage).

Owen's work for the Royal College of Surgeons and its nomenclatural implications

After obtaining his membership in the Royal College of Surgeons in 1826, Richard Owen (1804–1892) was soon put to work by his former major professor and President of the College of Surgeons, John Abernethy. Noting Owen's exceptional ability for dissecting, Abernethy gave him the task of curating and arranging the recently acquired Hunterian Collection at the Royal College, which was stored near Abernethy's residence. As the Rev. Richard Owen relates from his grandfather's diary, the collection

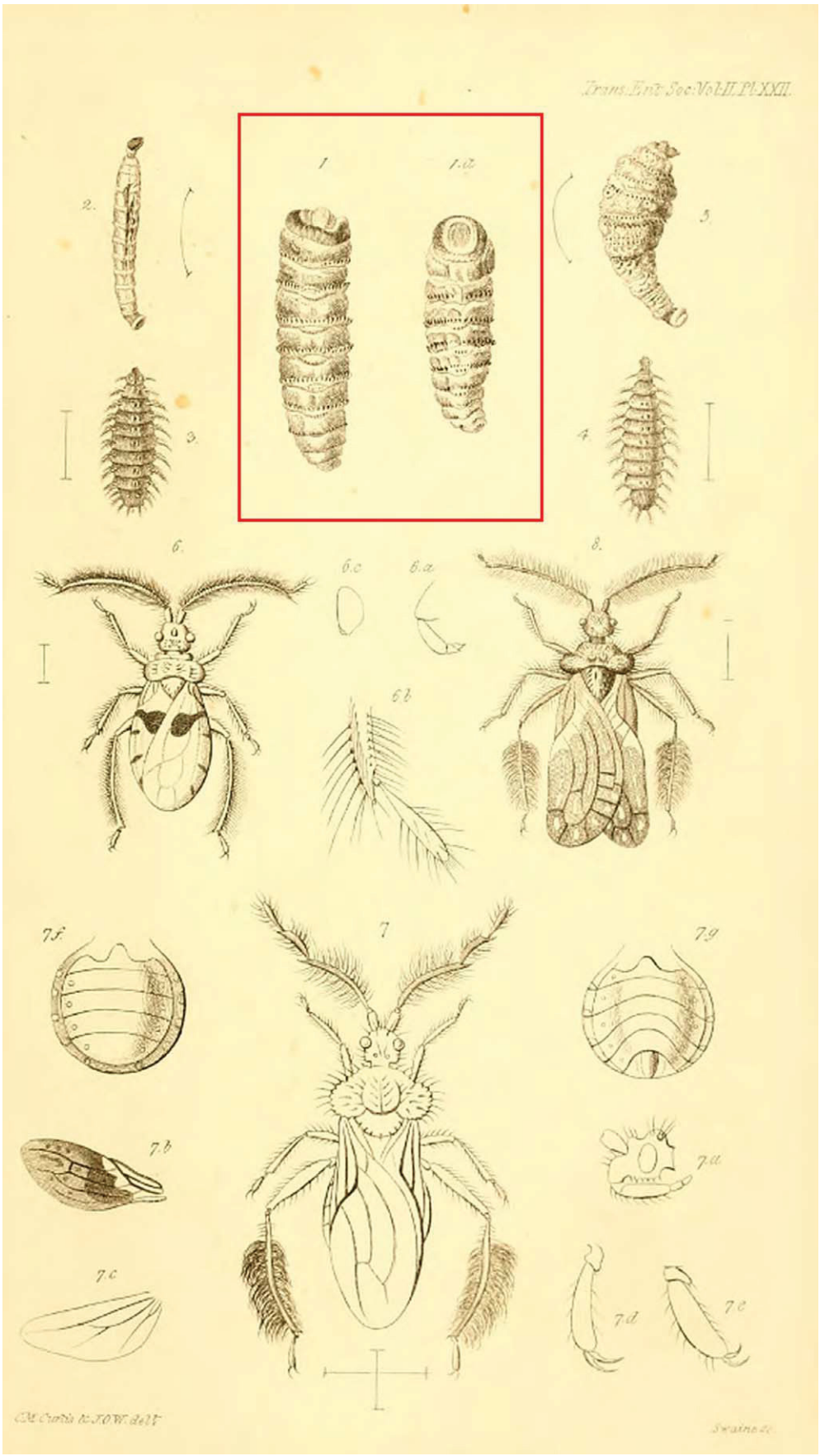


FIGURE 2. Illustrations made by J.O. Westwood of the larvae of *Oestrus rhinocerontis* (figs. 1, 1a; indicated by rectangle) in Hope (1840, plate 22).

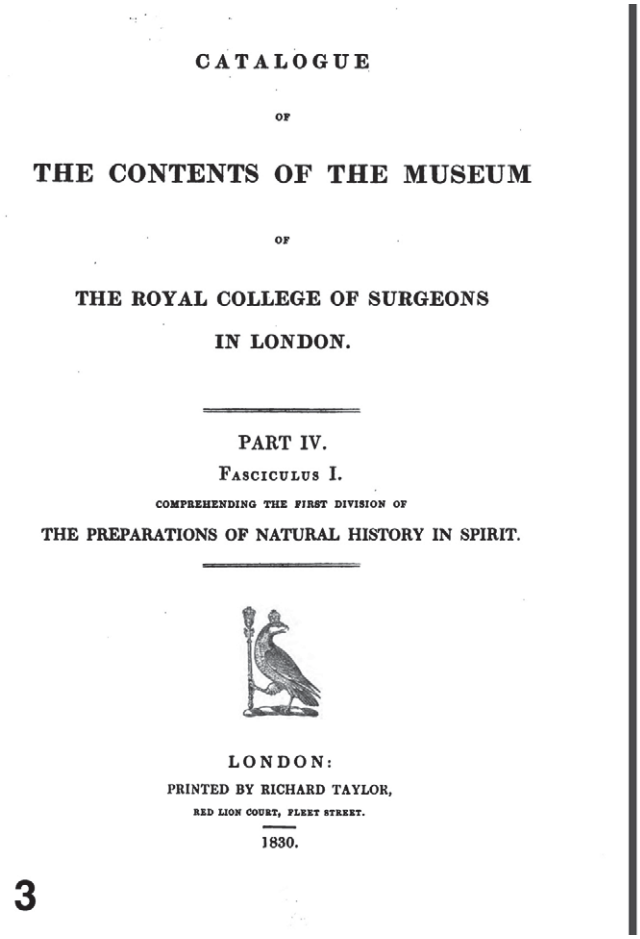
"... consisted of undissected specimens in spirits, the majority of which had been presented by Mr. (afterwards Sir Joseph) Banks to John Hunter, who had supplied Banks with large stoppered bottles of alcohol, for any soft animals captured during the circumnavigatory voyage of Captain Cook." (Owen 1894: 33).

Indeed, a read through the 1830 catalogue shows that many of the specimens recorded and those that were described by Owen were from localities visited by Cook including "New Holland" and the "Sandwich Isles".

Owen's duties included making dissections and preparation of specimens but also maintaining an inventory and publishing a descriptive catalogue of the collections. Working as assistant to the conservator of the collection, William Clift, he had a salary of 30£ per quarter which was raised to 150£ per annum for this work (Owen 1894: 33). Although a few volumes in the series had different authors, a check of Sherborn's (1894) bibliography of Sir Richard Owen indicates that he was solely responsible for a number of the volumes of this series.

Of the published catalogues of the collections, Part IV(1) on the specimens in spirit (Owen 1830) is the one in which a number of new animal names were listed or described, many of which are earlier than subsequently described or reported on by others, and all but one of the names were missed by Sherborn's *Index Animalium* (1922–1933). This 1830 work is not listed among the publications of the Royal College of Surgeons in Sherborn's *Index Animalium* bibliography (Sherborn 1922) and was no doubt not seen by him as the book was not included in the listings of the library of the British Museum (Natural History) until its supplement (Townsend 1940), which suggests it only appeared in the Museum after Sherborn had concluded his *Index Animalium* in 1933.

Only one new Diptera name was found in Owen (1830), but there some 27 other animal names proposed spanning a variety of phyla, classes, and orders. The nomenclature and taxonomy of some of the names are being dealt with elsewhere but I here give a listing of names as I have found them in this work (Table 1) so that future workers will be aware of them.



CATALOGUE

OF

THE CONTENTS OF THE MUSEUM

OF

THE ROYAL COLLEGE OF SURGEONS

IN LONDON.

PART IV.

FASCICULUS I.

COMPREHENDING THE FIRST DIVISION OF

THE PREPARATIONS OF NATURAL HISTORY IN SPIRIT.

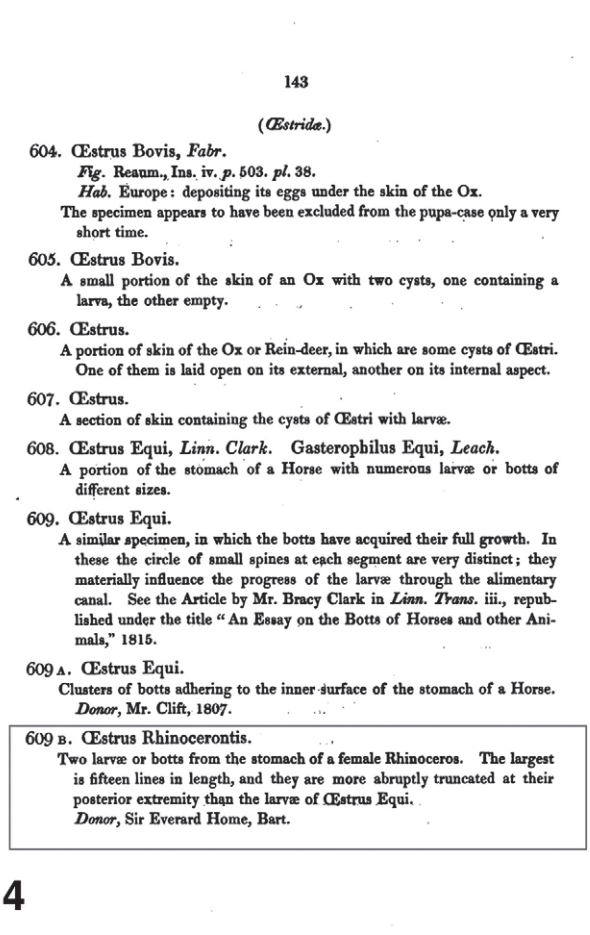
LONDON:

PRINTED BY RICHARD TAYLOR,

RED LION COURT, FLEET STREET.

1830.

3



143

(*Œstridæ.*)

604. Œstrus Bovis, *Fabr.*
Fig. Reaum., Ins. iv. *p.* 503. *pl.* 38.
Hab. Europe: depositing its eggs under the skin of the Ox.
The specimen appears to have been excluded from the pupa-case only a very short time.

605. Œstrus Bovis.
A small portion of the skin of an Ox with two cysts, one containing a larva, the other empty.

606. Œstrus.
A portion of skin of the Ox or Rein-deer, in which are some cysts of Œstri. One of them is laid open on its external, another on its internal aspect.

607. Œstrus.
A section of skin containing the cysts of Œstri with larvæ.

608. Œstrus Equi, *Linn. Clark.* Gasterophilus Equi, *Leach.*
A portion of the stomach of a Horse with numerous larvæ or botts of different sizes.

609. Œstrus Equi.
A similar specimen, in which the botts have acquired their full growth. In these the circle of small spines at each segment are very distinct; they materially influence the progress of the larvæ through the alimentary canal. See the Article by Mr. Bracy Clark in *Linn. Trans.* iii., republished under the title "An Essay on the Botts of Horses and other Animals," 1815.

609 A. Œstrus Equi.
Clusters of botts adhering to the inner surface of the stomach of a Horse.
Donor, Mr. Clift, 1807.

609 B. Œstrus Rhinocerontis.
Two larvæ or botts from the stomach of a female Rhinoceros. The largest is fifteen lines in length, and they are more abruptly truncated at their posterior extremity than the larvæ of Œstrus Equi.
Donor, Sir Everard Home, Bart.

4

FIGURES 3–4. Pages from Owen (1830). **3.** Title page. **4.** Page 143 showing the brief description of *Oestrus rhinocerontis* (marked by rectangle).

TABLE 1. Names of new taxa proposed by Owen (1830)

Name	Page	Notes
Zoanthus banksii, R. Owen	12	
Ascaris pythonis	43	Sherborn (1929) listed as "Anonymous"
Ascaris colubri	43	
Echinorhynchus balanocephalus, R.O.	44	
Distoma variegatum, R.O.	47	
Distoma hydrophidis	47	*nomen nudum*
Ligula cyprini	49	new name for *L. abdominalis* Gmelin
Lycoris foliosa, R.O.	66–67	
Cineras hunteri	71	
Lernaea spratti	77	*nomen nudum*
Xantho kumini	78	
Macrophthalmus telescopicus, R.O.	78	
Grapsus thukuhar, R.O.	80	
Grapsus quadratus	81	
Pagurus splendescens, R.O.	83–84	
Pagurus pictus, R.O.	84–85	
Coenobita hunteri, R.O.	86	
Coenobita layi, R.O.	86	
Porcellana coccinea, R.O.	87	
Crangon salebrosus, R.O.	89	
Hippolita armata, R.O.	89–90	
Palaemon carlislei, R.O.	91	
Iulus vittatus, R.O.	97	
Ixodes splendens, R.O.	107	
Buprestis duodecimmaculata, R.O.	110	as "*duodecim-maculata*"
Blatta dilata, R.O.	118	
Mantis quadrimaculata, R.O.	121	
Oestrus rhinocerontis	143	

The Hope/Owen connection

The Rev. F.W. Hope had numerous natural history interests and published many papers on a variety of subjects. One of these interests was the parasites of humans and, knowing of Owen's work and dissections of Hunterian Museum specimens at the Royal College of Surgeons, he corresponded with Richard Owen on the subject (see Smith 1987). The fact that Hope briefly discussed the rhinoceros bot fly *Oestrus rhinocerontis* and attributed the name to Owen meant that he knew of this species and Owen's work, and the fact that there was an illustration by Westwood (whose name is on the plate as illustrator) of the immature means that Owens' specimens in the Royal College of Surgeons must have either made their way to Oxford for illustration or Westwood made the illustration from specimens he saw when he was in London. Unfortunately, much of the spirit collection at the Royal College of Surgeons was destroyed by bomb raids in World War II probably including the bot flies upon which *Oestrus rhinocerontis* was based (a check online for these larvae among the surviving holdings there proved fruitless). A check with the University of Oxford Museum of Natural History as to any existing correspondence turned up five

letters from Owen to Hope (all are responses to letters from Hope [none of the Hope letters to Owen are in the Oxford archives]) including one in which Owen specifically mentions sending Hope specimens of a fly dissected from a human, but no letter was found discussing the rhinoceros bot. There is no correspondence or notes in the Westwood files regarding the bot.

The complicated and confused history of the name of the largest fly in Africa

In researching this paper, it became painfully evident that this name has had a very confused history but in no one place has the history of the name of this fly been sorted out or put into one place. I here present a cresonymy (Table 2) to elucidate the history of the name(s) of this fly through history and the various and sundry generic placements that have transpired since its original proposal in 1830.

TABLE 2. Cresonymy of *Gyrostigma rhinocerontis* (Owen)

Oestrus rhinocerontis [Owen], 1830: 143.
Oestrus rhinocerontis: Hope, 1840: 259, pl. 22, figs. 1, 1a.
Hypoderma rhinocerontis: Joly, 1846: 241
Oestrus rhinocerontis: Brauer, 1860: 65
Gastrophilus rhinocerontis: Brauer, 1863: 92
Gastrophilus rhinocerontis: Cobbold, 1879: 401
?Gastrophilus rhinocerontis: Brauer, 1884: 82.
Oestrus rhinocerontis: Brauer, 1885: 269
Gyrostigma rhinozerontis: Karsch, 1887: xxi
Gyrostigma rhinocerontis: Brauer, 1892: 8.
Spathicera pavesii Corti, 1895: 145 [synonymy under *rhinocerontis* in Pont, 1980: 884]
Spathicera pavesii: Brauer, 1895: 582
Gyrostigma rhinocerontis bicornis: Brauer, 1896: 3 [= 1897: 261]
Gyrostigma rhinocerontis bicornis: Enderlein, 1899: 237
Gyrostigma rhinocerontis-bicornis: Heymons, 1899: 103
Spathicera pavesii: Gestro, 1899: 627
Gyrostigma rhinocerontis bicornis: Enderlein, 1901: 28
Gyrostigma rhinocerontis bicornis: Bau, 1906: 10
Spathicera pavesi: Grünberg, 1906: 45
Gyrostigma pavesii: Speiser, 1907: 299
Spathicera pavesiii: Sjöstedt, 1908: 18
Spathicera (*Gyrostigma*) *meruensis* Sjöstedt, 1908: 12 [synonymy under *rhinocerontis* in Pont, 1980: 884]
Spathicera (*Gyrostigma*) *rhinocerontis bicornis*: Poulton, 1909: xxx.
Spathicera meruensis: Neave, 1909: 141
Gyrostigma meruensis: Enderlein, 1911: 142
Gyrostigma pavesii: Rodhain, 1915: 275
Gyrostigma pavesii: Bequaert, 1916: 386
Gyrostigma rhinocerontis bicornis: Bequaert, 1916: 386
Gyrostigma meruense Gedoelst, 1919: 333
Gyrostigma rhinocerontis bicornis: Gedoelst, 1919: 333
Gyrostigma pavesii: Gedoelst, 1919: 333
Gyrostigma meruensis: Rodhain & Bequaert, 1919: 445
Gyrostigma rhinocerontis bicornis: Rodhain & Bequaert, 1919: 449
Gyrostigma pavesii: Rodhain & Bequaert, 1919: 449
Gyrostigma pavesii: Lang, 1920: 89
Gyrostigma rhinocerontis-bicornis: Babák, 1921: 508
Gyrostigma pavesii: Patton, 1921: 245
Gyrostigma meruensis: Patton, 1921: 245
Gyrostigma pavesii: Séguy, 1937: 158
Spathicera rhinocerontis: Townsend, 1937: 19.
Spathicera rhinocerontisbicornis: Townsend, 1937: 19
Gyrostigma meruensis: Zumpt & Paterson, 1953: 68
Gyrostigma pavesii: Zumpt & Paterson, 1953: 68

... Continued on the next page

TABLE 2. (Continued)

Gyrostigma pavesii: Haeselbarth et al., 1961: 60
Gyrostigma pavesii: Zumpt, 1962: 383
Gyrostigma pavesii: Davis, 1964: 343
Gyrostigma rhinocerontis bicornis: Zumpt, 1965: 130
Gyrostigma rhinocerontis: Pont, 1980: 884.
Gyrostigma pavesii: Vellayan et al., 1983: 241
Gyrostigma pavesii: Pittaway, 1991: 60
Gyrostigma rhinocerontis: Pittaway, 1991: 60
Gyrostigma pavesii: Brum et al., 1996: 57
Gyrostigma rhinocerontis: Pollock, 1999: 777
Gyrostigma rhinocerontis: Pape, 2001: 140
Gyrostigma pavesii: Gosling, 2005: 151
Gyrostigma rhinocerontis: Colwell et al., 2006: 294
Gyrostigma rhinocerontis: Barraclough, 2006: 15–21
Gyrostigma rhinocerontis: Pollock, 2010: 1929
Gyrostigma pavesii: Spinage, 2012: 1177
Gyrostigma rhinocerontis: Gunn & Pitt, 2012: 173
Gyrostigma rhinocerontis: Walker & Walker, 2012: 57

Notes on some of the names

Zumpt (1962: 246) stated that the epithet *bicornis* appended to *Gyrostigma rhinocerontis* by Brauer (1896: 3) was merely an indication of its host and not part of the name, thus it had no nomenclatural significance. However, in the same work Brauer (1896: 4) treated his specific name *sumatrensis* Brauer, 1884 for the bot of the Sumatran Rhinoceros as a subspecific name (as *Gyrostigma rhinocerontis sumatrensis*). Thus, both are treated as subspecies of *G. rhinocerontis* in Brauer (1897) and *bicornis* is made available with characters to differentiate it from *sumatrensis*. Accepting *bicornis* as available was followed by Enderlein (1899) and subsequent authors but the name was curiously omitted from the Afrotropical catalogue (Pont 1980).

In reviewing Enderlein's (1899) paper, Heymons (1899) treated the name as hyphenated (*Gyrostigma rhinocerontis-bicornis*), which connotes a host affiliation and it was also treated as such in Babák (1921). Townsend (1937) must have also felt that the *bicornis* epithet was actually the host name, as he combined it with the species name (as *Spathicera rhinocerontisbicornis*) much the same way as some cecidomyiid workers have combined the species name and host name in some of the older publications of cecidomyiid gall midge species.

Acknowledgments

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