

**A revision of the genus *Nemotelus* Geoffroy (Diptera: Stratiomyidae) from Egypt, with one new species and three new records**

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### ABSTRRICT

The Egyptian fauna of the genus *Nemotelus* Geoffroy was revised. We recognize 9 species (compared to 5 species recognized about 40 years ago). As a result of this revision *N. matrouhensis* sp. nov. is described as new. *N. anchora* Loew, 1846; *N. candidus* Becker, 1906 and *N. oasis* Becker, 1906 are newly recorded from the Egyptian fauna. The female of *N. albifacies* Becker, 1902 is described for the first time and both sexes of *N. niloticus* Olivier, 1811 are redescribed and illustrated for the first time.

*N. punctiventris* Becker, 1902 is removed from synonymy with *N. brachystomus* Loew, 1846 and *N. albifacies* Becker, 1902 and *N. oasis* Becker, 1906 are removed from synonymy with *N. niloticus* Olivier, 1811. Also, *N. theodori* Lindner, 1974 is newly synonymized with *N. oasis* Becker and *N. brachystomus aegyptiacus* Lindner, 1925 is newly synonymized with *N. punctiventris* Becker.

With the addition of new characters such as the head index, shape of antennae and abdominal pattern, the females of *N. candidus* Becker, 1906 and *N. marinus* Becker, 1902 are diagnosed and illustrated for the first time. In addition, illustrations, keys, specimens examined, geographical and local distribution are given for each species.

**Key words:** Taxonomic revision, new species, new records, *Nemotelus*, Egypt.

### INTRODUCTION

The genus *Nemotelus* Geoffroy, 1762 comprises about 124 species world-wide and 33 species in the Palaearctic Region. This genus is divided into 2 subgenera *Nemotelus* and *Camptopelta*; all the currently recognized Egyptian species belong to the subgenus *Nemotelus*. [Rozkošný, 1977, 1983; Woodley, 2001].

Members of the genus *Nemotelus* Geoffroy are small flies, easily recognized by their wings without crossvein m-cu, face produced forward cone-like (facial projection) and unarmed scutellum. Their colors are usually black with whitish markings [Lundbeck, 1907; Verrall, 1909; McFadden, 1972; James, 1974; Rozkošný, 1977, 1983].

Identification is not easy in the genus *Nemotelus* due to great variation in the length and configuration of the facial projection and in the abdominal color from one species to another. It was found that the examination of genitalia is very important to distinguish between the species [James, 1974; Rozkošný, 1977, 1983].

In Egypt, the genus *Nemotelus* Geoffroy was represented by 5 species [Steyskal and El-Bialy, 1967] prior to this study. This study was undertaken to revise, update and

clarify the taxonomic status of the species of genus *Nemotelus* Geoffroy in the Egyptian fauna.

#### Checklist of Egyptian *Nemotelus* species

<i>Nemotelus albifacies</i> Becker, 1902	<i>Nemotelus oasis</i> Becker, 1906
<i>Nemotelus anchora</i> Loew, 1846	Syn.: <i>N. theodori</i> Lindner, 1974
Syn.: <i>N. siculus</i> Jaennicke, 1866	<i>Nemotelus punctiventris</i> Becker, 1902
<i>Nemotelus candidus</i> Becker, 1906	Syn.: <i>N. brachystomus aegyptiacus</i> Lindner, 1925
<i>Nemotelus dentatus</i> Becker, 1902	<i>Nemotelus matrouhensis</i> sp. nov.
<i>Nemotelus marinus</i> Becker, 1902	
<i>Nemotelus niloticus</i> Olivier, 1811	
Syn.: <i>N. fasciatus</i> Olivier, 1811	
<i>N. duofasciatus</i> Woodley, 2001	

## MATERIALS AND METHODS

Measurements of insect body parts were made with a calibrated ocular lens standardized at 100 units using a stereomicroscope at magnification 100x to 400x. Specimens for this study are preserved in the main Egyptian reference collections as follows: Collection of Ain Shams University, Faculty of Science, Entomology Department (ASUC); Collection of Cairo University, Faculty of Science, Entomology Department (CUC); Collection of the Ministry of Agriculture, Plant Protection Institute, Section of Identification (MAC) and Collection of Alfieri, Al Azhar University, Faculty of Agriculture (AZUC).

For preparing male and/or female genitalia, the posterior part of the abdomen was cut off, put in 5-10 % KOH for about 20 hours [Nagatomi & Iwata, 1976], then transferred to 70 % alcohol where the internal tissues were removed by the aid of fine forceps. After washing, the dissected genital parts were preserved in (1:10) a mixture of glycerin and ethyl alcohol.

Species were identified according to Macquart, 1837; Becker, 1902; Lundbeck, 1907; Verrall, 1909; Lindner, 1925, 1930, 1938; Rozkošný 1977, 1983. Names of different taxa were updated according to Woodley, 2001.

## RESULTS AND DISCUSSION

### Genus *Nemotelus* Geoffroy, 1762

Subgenus *Nemotelus* (*Nemotelus*) Geoffroy, 1762

*Nemotelus* Geoffroy, 1762: 542.

**Type-species:** *Musca pantherina* Linnaeus, 1758; by designation of I.C.Z.N. (1957a: 85(Opinion 441)). [Name No. 1048 on Official List of Generic Names in Zoology.]

*Nematotelus* Osten-Sacken, 1878.

*Epideicticus* Kertész, 1923: 126.

**Remarks:** Forty years ago 5 species of *Nemotelus* were recorded in Egypt. As a result of this revision the number of species is increased to 9 due to 3 new records and the description of one new species. Although Hauser (2008) synonymized *Nemotelus albifacies* Becker and *N. oasis* Becker with *N. niloticus* Olivier, we think they are valid species. We present taxonomic keys to distinguish between the 9 species. Sexes are keyed separately due to sexual dimorphism.

### Key to species of genus *Nemotelus* Geoffroy in Egypt (Males)

1. Facial projection as long as or longer than half of eye-length.....2
- Facial projection distinctly shorter than half of eye-length.....4

2. Facial projection more than 2/3 of eye-length; abdomen pale yellow except for a small black basal spot (Fig. 4); genitalia as in Figs 36-38.....*N. niloticus* Olivier  
 - Facial projection less than 2/3 of eye-length; abdomen with additional black markings.....3
3. Facial projection with shining white dorsal patch from bases of antennae to apex; notopleural suture towards base of wing narrower than maximal width of postocular area (Fig. 8); genitalia as in Figs 30-32 .....*N. albifacies* Becker  
 - Facial projection with shining white dorsal patch from base of eye-margin to apex; notopleural suture towards base of wing wider than maximal width of postocular area (Fig. 9).....*N. oasis* Becker
4. Head without yellow frontal spots above antennae (Fig. 47); notopleural suture towards base of wing narrower than half width of first segment of flagellum (Fig. 10); abdomen with small, round anteromedial spots on terga 3 & 4 (Fig. 50); genitalia as in Figs 33-35 .....*N. anchora* Loew  
 - Head with yellow frontal spots above antennae; notopleural suture towards base of wing wider than half width of first segment of flagellum; abdomen without small, round anteromedial spots on terga 3 & 4.....5
5. Head with proboscis long and slender, more than 10 times as long as wide, maxillary palpi absent (Fig. 11); maximal width of postocular area longer than width of first segment of flagellum (Fig. 11); genitalia with parameres spiny (Fig. 44).....*N. dentatus* Becker.  
 - Head with proboscis short and stout, less than 5 times as long as wide, maxillary palpi present; maximal width of postocular area shorter than width of first segment of flagellum; parameres smooth.....6
6. Abdomen with a transverse stripe at anterior margin on tergum 3 (Fig. 6); genitalia with median process high, deeply divided into a pair of blade-shaped processes (Fig. 45).....*N. matrouhensis* sp. nov.  
 - Abdomen without any stripe on tergum 3; genitalia with median process consisting of two low lobes.....7
7. Antennae with contrastingly yellow pedicel; postalar calli pale yellow (Fig. 13); head index range (108-110, tab. 1); genitalia as in Figs 39-41.....*N. candidus* Becker.  
 - Antennae with brown pedicel; postalar calli dark-colored; head index range (94-104, tab. 1).....8
8. Last flagellomere about as long as preceding segment (Fig. 56); abdomen with transverse stripe at anterior margin of tergum 4 (Fig. 51); genitalia with short and straight external posterolateral projections (Fig. 28).....*N. marinus* Becker  
 - Last flagellomere much longer than preceding segment (Fig. 55); abdomen without transverse stripe at anterior margin of tergum 4 (Fig. 52-53); genitalia with long and curved external posterolateral projections (Fig. 26).....*N. punctiventris* Becker
- (Females)**
1. Facial projection as long as or longer than eye-length.....2  
 - Facial projection distinctly shorter than eye-length.....4
2. Head with yellow frontal spots above antennae (Fig. 15); width of first segment of flagellum narrower than notopleural suture towards base of wing (Fig. 15).....*N. oasis* Becker  
 - Head without yellow frontal spots above antenna; width of first segment of flagellum wider than notopleural suture towards base of wing.....3

3. Head index range (71-73, tab. 1); width of postocular area wider than 2.8 times width of first segment of flagellum (Fig. 14); abdominal terga uniformly dark colored (Fig. 1); genitalia as in Figs. 11-12.....*N. albifacies* Becker  
 - Head index range (52-54, tab. 1); width of postocular area wider than 1.8 times width of first segment of flagellum (Fig. 16); abdominal terga dark colored on middle and pale brown colored on sides of terga 2-5 (Fig. 5).....*N. niloticus* Olivier
4. Head without yellow frontal spots (Fig. 48); antennae with last flagellomere much longer than the 4 preceding segments (Fig. 57); genitalia as in Figs 20-21.....*N. anchora* Loew  
 - Head with yellow frontal spots above antennae; antennae with last flagellomere less than length of the 3 preceding segments.....5
5. Head with proboscis long and slender, more than 10 times as long as wide, maxillary palpi absent; head index range (66-69, tab. 1); genitalia as in Figs 22-23.....*N. dentatus* Becker  
 - Head with proboscis short and stout, less than 5 times as long as wide, maxillary palpi present; head index range (90-106, tab. 1).....6
6. Head with frons longer than wide (Fig. 3); antennae with last two flagellomeres subequal in length (Fig. 56); abdominal terga with dark-color on middle and pale brown on sides of tergum 2 (Fig. 3).....*N. marinus* Becker  
 - Head with frons wider than long; antennae with last flagellomere much longer than preceding; abdominal terga uniformly dark-colored.....7
7. Humeri and subnotopleural stripe with black patches at tip and at base respectively (Fig. 17); cheeks in ventral view 2 times wider than the length of basal antennal segments and also 2 times wider than the width of postocular area; abdomen with yellow posterior transverse stripes widened only at middle on terga 2-4 (Fig.7)..... *N. matrouhensis* sp. nov  
 - Humeri and subnotopleural stripe without any black patches; cheeks in ventral view at most 1.25 times wider than the length of basal antennal segments and about 1.5 times wider than the width of postocular area; abdomen with yellow posterior transverse stripes widened laterally and medially on terga 2-4.....8
8. Abdomen pale yellow with short black transverse stripes along anterior margins of terga 2-5 (Fig. 2); venter of abdomen entirely yellow; all legs with femora orange-yellow, hardly darkened at base.....*N. candidus* Becker  
 - Abdomen with long black transverse stripes near to, or touching the posterior margin of terga 2-4 (Fig. 54); venter entirely black with a small pale yellow patch, all legs with femora black except for apices; genitalia as in Figs. 24-25.....*N. punctiventris* Becker

***Nemotelus albifacies* Becker, 1902, status nov.**

(Figs 1, 8, 14, 18-19, 30-32)

*Nemotelus albifacies* Becker, 1902: 9.

**Remarks:** *N. albifacies* Becker, 1902 was described as a new species only from the male specimens (Alexandria, Egypt, Zool. Mus. Berlin), while the female was unknown. Recently, Hauser (2008: 598) placed this species as a new synonym with *N. niloticus* Olivier. In the present study, this species is considered distinct and the female (Dekhela Mariout, Alexandria, CUC) is described for the first time from newly collected specimens from El Zaranik protectorate (23. 4. 2004) and specimens are preserved in all Egyptian reference collections except AZUC.

This species is distinguished from *N. niloticus* Olivier by having the flagellum with the 6<sup>th</sup> flagellomere longer than 5<sup>th</sup> flagellomere; postalar calli pale whitish coloured; abdomen in male whitish, with large black basal macula and black transverse

bands on terga 4 and 5; in female abdominal terga are uniformly dark colored; female head index 71-73; male terminalia with moderately deep medial incision of synsternite, inner posteroventral lobes very low, rounded, aedeagus simple, flat and broad in the medial part.

**Description of female:**

Head elongate-triangular in lateral view without frontal spots. Facial projection as long as eye-length. Apical half of facial projection shining white. Apical flagellomere spindle-shaped, about as long as the two preceding segments together. Postocular part of head produced in lateral view. Proboscis long and brown. Head pile mostly short, whitish and appressed, long and erect only posteroventrally. Head index 72. Thorax black, postpronotal calli and narrow subnotopleural stripe white. Postalar calli partly yellowish. Whitish pile short, rather dense and appressed on mesonotum, partly erect on pleura. Legs pale yellow, femora brown except for apical thirds, tibiae broadly brownish in middle. Wings hyaline with distinct veins pale yellow, halteres yellow. Abdomen in ground colour black (uniformly dark), with 3 characteristic yellowish maculae on terga 2-4. Pile white, short and mostly rather inconspicuous.

Terminalia with subgenital plate long and wide, produced posteromedially. Genital furca subtriangular, tapered proximally, with a large median aperture.

**Local distribution:** Coastal strip, Lower Nile and Sinai.

**Geographical distribution:** Egypt (Endemic).

**Specimens examined:**

Gabal Asfer 30. V. 1956 (1 ♂ & 2 ♀♀), Zaranik protectorate 23. IV. 2004 (2 ♂♂ & 1 ♀), Fayoum 15. XII. 2007 (5 ♂♂).....(ASUC)  
 Ramleh 17. IX. 1921 (1 ♂), Ismailia 14. X. 1926 (1 ♂), Dekhela Mariout 9. VII. 1927 (1 ♀), Fayoum 23. IV. 1943 (46 ♂♂ & 1 ♀), 30. IV. 1943 (5 ♂♂), 30. V. 1943 (3 ♂♂ & 1 ♀), 20. IV. 1945 (9 ♂♂ & 2 ♀♀), 27. IV. 1945 (1 ♀), 7. V. 1945 (3 ♀♀), (Fayoum, Girza Route) 14. IV. 1947 (1 ♀), (K.64 from Cairo-Fayoum) 4. IV. 1952 (1 ♀), (Fayoum El-athar) 24. IV. 1952 (14 ♂♂ & 3 ♀♀).....(CUC)  
 Sherbin 14. IX. 1925 (1 ♂), Ismailia 11. V. 1964 (1 ♂), Fayid 11. V. 1964 (5 ♂♂ & 1 ♀).....(MAC)

**Note:** In (CUC), the male specimen which collected from Ramleh, 17. IX. 1921 was recorded by Lindner (1925).

***Nemotelus anchora* Loew, 1846**

(Figs 10, 20-21, 33-35, 47-48, 50, 57)

*Nemotelus anchora* Loew, 1846: 429.

*Nemotelus siculus* Jaennicke, 1866: 224.

**Type locality:** Siracusa, Sicily (Zool. Mus. Berlin).

**Remarks:** This species is recorded from Egypt for the first time.

**Local distribution:** Western desert (Fayoum).

**Geographical distribution:** Algeria, Egypt, Iran, Italy, Malta, Palestine, Russia, Sardinia, Sicily, Tunisia.

**Specimens examined:**

Fayoum 1. III. 1947 (32 ♂♂ & 5 ♀♀).....(CUC)

***Nemotelus candidus* Becker, 1906**

(Figs 2, 13, 39-41)

*Nemotelus candidus* Becker, 1906: 4.

**Type locality:** Biskra, Algeria (Zool. Mus. Berlin).

**Remarks:** This species is recorded from Egypt for the first time, and the female of this species is diagnosed and illustrated for the first time based on the addition of new characters: head index 94; cheeks 2 times wider than greatest width of first segment

of flagellum; antennae short, scape brown, pedicel contrastingly yellow, basal part of flagellum light yellow, last 3 flagellomeres darkened.

**Local distribution:** Coastal strip.

**Geographical distribution:** Algeria, Egypt.

**Specimens examined:**

Wadi El Natroun 6. VIII. 1929 (1 ♂ & 4 ♀♀).....(CUC)  
 Dekhela Mariout 24. V. 1925 (4 ♀♀).....(MAC)  
 Dekhela Mariout 7. IX. 1924 (2 ♀♀).....(AZUC)

***Nemotelus dentatus* Becker, 1902**

(Figs 11, 22-23, 42-44)

*Nemotelus dentatus* Becker, 1902: 7.

**Type locality:** (Qarun lake, Fayoum), Egypt (Zool. Mus. Berlin).

**Local distribution:** Coastal strip, Lower Nile and Western desert.

**Geographical distribution:** Egypt (Endemic).

**Specimens examined:**

Dekhela 8. IV. 1956 (1 ♀).....(ASUC)  
 Marg 1. IV. 1923 (1 ♀), Dekheila Alex. April-May. 1924 (1 ♂), Ismailia 7. IV. 1926 (2 ♂♂ & 2 ♀♀), 14. X. 1926 (1 ♂ & 1 ♀), Kharga 13. III. 1932 (2 ♂♂), Mersa Matrouh 8. V. 1935 (16 ♂♂), Helwan 2. IV. 1939 (1 ♀), Fayoum 1. III. 1947 (7 ♂♂ & 4 ♀♀), (Fayoum El athar) 24. IV. 1952 (1 ♂), Abu zaabal 19. III. 1950 (1 ♀).....(CUC)  
 Marg 14. II. 1913 (1 ♂), El Alagto Marg 15. III. 1914 (1 ♀), Mariout 16. III. 1922 (1 ♂), Kasr El Dakhel 6. III. 1924 (2 ♂♂ & 1 ♀), Kharga Oasis 13. III. 1924 (3 ♂♂ & 3 ♀♀), Ezbet El Nakhl 20. IV. 1924 (1 ♀), 25. IV. 1924 (2 ♀♀), 3. IV. 1925 (1 ♂ & 1 ♀), Dekheila-Alex. April-May 1924 (4 ♂♂ & 1 ♀), Gabal El Asfar 2. XI. 1925 (1 ♀), Ismailia 7. IV. 1926 (3 ♂♂ & 6 ♀♀), 14. X. 1926 (1 ♂ & 1 ♀), Fayoum 15. III. 1931 (1 ♀), Wadi Natroun 17. III. 1963 (1 ♀), El Kantara 13. V. 1964 (1 ♀).....(MAC)  
 Kasr el-Dakhel 6. III. 1924 (2 ♂♂), Kharga Oasis 13. III. 1924 (1 ♂ & 1 ♀), Dekhela Alex. April-May. 1924 (1 ♂).....AZUC)

**Note:** The female specimen collected from Marg, 1. 4. 1923 (CUC); the male specimen collected from Marg, 14. II. 1913 (MAC) and the female specimen collected from El Alagto Marg, 15. III. 1914 (MAC) were recorded by Lindner (1925).

***Nemotelus marinus* Becker, 1902**

(Figs 3, 28-29, 51, 56)

*Nemotelus marinus* Becker, 1902: 9.

**Type locality:** Suez, Egypt (Zool. Mus. Berlin).

**Remarks:** The female of this species is diagnosed and illustrated for the first time based on the addition of new characters: head index 95; antennae rather long and slender, apical flagellomere short and conical, slightly longer than flagellomere 5, flagellomere 4 longer than flagellomeres 5 and 6 combined; abdomen ground color black, widely pale brown on sides of tergum 2, with pale yellow triangular median spots at posterior margins of terga 2 & 3, and with posterior stripes on tergum 4 that have medial, triangle-shaped widened areas.

**Local distribution:** Lower Nile.

**Geographical distribution:** Egypt (Endemic).

**Specimens examined:**

Fayed 24. IX. 1925 (1 ♂), Wadi Hoff 9.VIII. 1927 (1 ♀), Wadi El Natroun 6. VIII. 1929 (1 ♀).....(CUC)

Ferdan (Kantra) 1. IX. 1924 (1 ♀), Fayed 24. IX. 1925 (2 ♂♂ & 1 ♀), 2. X. 1925 (1 ♂), Ismailia 11. V. 1964 (1 ♀).....(MAC)  
Fayed 24. IX. 1925 (1 ♀).....(AZUC)

***Nemotelus niloticus* Olivier, 1811**  
**(Figs 4-5, 16, 36-38)**

*Nemotelus niloticus* Olivier, 1811: 183.

*Nemotelus fasciatus* Olivier, 1811: 183.

*Nemotelus duofasciatus* Woodley, 2001: 315.

**Type depository:** Museum national d'Histoire naturelle, Paris.

**Remarks:** This species is redescribed and illustrated for the first time. Recently, Hauser (2008) considered *N. niloticus* Olivier as a valid name, with *N. duofasciatus* Woodley as a new synonym of *N. niloticus* Olivier.

After examination of both sexes of *N. niloticus* Olivier and Martin Hauser's findings (personal communication), we agree that *N. niloticus* Olivier is the correct name for this species and *N. fasciatus* Olivier and *N. duofasciatus* Woodley are synonyms of *N. niloticus* Olivier.

**Description:**

**Length:** (male) body 4.4-4.6 mm, wing 3.0-3.2 mm.

(female) body 4.7-4.9 mm, wing 3.1-3.3 mm.

**Head index:** 63 (male) - 53 (female).

Head very elongate-triangular in lateral view without frontal spots. Facial projection long, slender, pointed, as long as 3/4 of eye-length in male, longer than eye-length in female. Apical half of facial projection shining white. Antennae inserted in middle of facial projection only in male. Last two flagellomeres of antennae subequal in length. Postocular area as wide as or slightly wider than maximal width of first segment of flagellum in male, distinctly wider than antennae in female. Proboscis very long. Head pile mostly short, whitish and appressed. Thorax black, postpronotal calli partly yellow with black patch on upper part and narrow subnotopleural stripe whitish-yellow, the latter slightly widened before the wing-base. Postalar calli dark. Whitish pile short, rather dense and appressed on mesonotum. Legs pale yellow, base of femora dark coloured, tibiae and tarsi brightly coloured. Wings hyaline with distinct veins pale yellow, halteres white. Abdomen in male whitish, with only medial black basal spot, in female ground colour black at middle of anterior margin of all terga and widely pale brown on sides of terga 2-5, with large pale yellow median triangular spots at posterior margins of terga 2-4.

Male genitalia with deep and wide median process of synsternite consisting of two low lobes, aedeagus simple, almost parallel-sided.

**Local distribution:** Coastal strip.

**Geographical distribution:** Egypt (Endemic).

**Specimens examined:**

Dekhela 24. VI. 1926 (1 ♂ & 1 ♀), Mallaha Mariout 16. VI. 1929 (4 ♂♂ & 11 ♀♀),  
Dekhela Mariout 18. VI. 1929 (1 ♂).....(CUC)

Dekhela 24. VI. 1926 (1 ♂), Dekhela Mariout 9. VII. 1927 (1 ♂).....(AZUC)

***Nemotelus oasis* Becker, 1906, status nov.**  
**(Figs 9, 15, 49)**

*Nemotelus oasis* Becker, 1906: 6.

*Nemotelus theodori* Lindner, 1974: 95, syn. nov.

**Type locality:** Biskra, Algeria (Zool. Mus. Berlin)

**Remarks:** This species is removed from synonymy and considered to be a distinct species and is recorded from Egypt for the first time. *N. oasis* Becker, 1906 and *N.*

*theodori* Lindner, 1974 were considered as new synonyms of *N. albifacies* Becker, 1902 by Rozkošný (1977), and Lindner & Freidberg (1978). Recently, *N. oasis* Becker and *N. theodori* Lindner were considered as synonyms of *N. niloticus* Olivier by Hauser (2008).

This species is distinguished from *N. albifacies* Becker by having in male: facial projection entirely whitish colored in dorsal part and longer than flagellum; postocular area not wider than first segment of flagellum and not wider than half the width of the cheek; postpronotal calli entirely whitish colored; subnotopleural suture at base whitish with black spots and wider than postocular area; abdomen whitish, with medial black basal spot, terga 2-4 with broad lateral black spots, tergum 4 with small black spot anteromedially, and tergum 5 with transverse anteromedial black band. The female is recognized by: head index smaller than 56; head length at least 1.7 longer than high; frontal spots present; antennal index greater than 2.3; subnotopleural suture at base whitish with black spots and wider than width of first segment of flagellum; abdomen black, with wide yellowish dilated transverse bands along posterior margin of terga 2-5; venter black.

This species is distinguished from *N. niloticus* Olivier by having flagellum with 6<sup>th</sup> flagellomere longer than 5<sup>th</sup> flagellomere; postalar calli pale whitish colored; the abdominal patterns of both sexes; facial projection less than 2/3 of eye-length in male; frontal spots present in female.

Therefore, we consider *N. oasis* Becker to be a valid species and *N. theodori* Lindner is considered a synonym to *N. oasis* Becker.

**Local distribution:** Lower Nile.

**Geographical distribution:** Algeria, Egypt, Palestine.

**Specimens examined:**

Wadi Hoff 4. IV. 1930 (1 ♀), Helwan 8. IV. 1934 (1 ♂), 14. IV. 1934 (1 ♀), 24. IV. 1934 (1 ♀).....(CUC)

***Nemotelus punctiventris* Becker, 1902, status nov.**

(Figs 24-27, 52-55)

*Nemotelus punctiventris* Becker, 1902: 8.

*Nemotelus brachystomus aegyptiacus* Lindner, 1925: 146. Syn. nov.

**Type locality:** Alexandria, Egypt (Zool. Mus. Berlin).

**Remarks:** Rozkošný (1977, 1983) placed *N. punctiventris* Becker and *N. brachystomus aegyptiacus* Lindner as new synonyms of *N. brachystomus* Loew, and he mentioned that the location of the type-series of *N. brachystomus aegyptiacus* Lindner was unknown.

In the present study, *N. punctiventris* Becker is resurrected to a valid species as previously considered by Lindner (1930, 1974) based on the characters of: male genitalia with long and curved external posterolateral projections, median process very small, consisting of two low and rounded lobes (Fig. 27); subgenital plate in female terminalia short, remarkably produced posteromedially, tapered towards proximal margin; and the abdominal patterns in both sexes. Recently, we examined the type specimens of *N. brachystomus aegyptiacus* Lindner preserved in MAC, and we regard this name as a synonym of *N. punctiventris* Becker instead of *N. brachystomus* Loew as mentioned by Lindner (1930).

**Local distribution:** Coastal strip.

**Geographical distribution:** Egypt (Endemic).

**Specimens examined:**

Dekhila 8. IV. 1955 (1 ♀), Zaranik protectorate 23. IV. 2004 (1 ♀).....(ASUC)



Cleopatra 12. VII. 1921 (1 ♀), Dekhela Mariout 20. VIII. 1924 (1 ♂), 24. V. 1925 (3 ♂♂ & 5 ♀♀), 9. VII. 1927 (1 ♂ & 1 ♀♀), 18. VI. 1929 (4 ♂♂).....(CUC)  
 Nouzha (Alex.) 20. V. 1914 (1 ♀), 15. VII. 1920 (2 ♂♂, cotype), 21. VII. 1920 (1 ♀, cotype), 5. VII. 1921 (1 ♀, cotype), 9. IX. 1924 (1 ♀), Ramleh (Alex.) 2. VII. 1920 (1 ♂, cotype), Abou-Kir 2. VII. 1921 (1 ♀, cotype), Cleopatra 10. VII. 1921 (2 ♀♀, cotype), 12. VII. 1921 (1 ♂), 22. VII. 1921 (4 ♂♂ & 5 ♀♀, cotype), 1. VIII. 1921 (9 ♂♂ & 5 ♀♀, Type & cotype), 14. VIII. 1921 (1 ♂ & 1 ♀), Mobar bey 3. IX. 1921 (2 ♂♂), Dekhela (Alex.) April & May 1924 (2 ♂♂), 24. VI. 1926 (1 ♂), Dekhela-Mariout 20. VIII. 1924 (5 ♂♂ & 1 ♀), 7. IX. 1924 (5 ♂♂ & 11 ♀♀), 24. V. 1925 (8 ♂♂ & 2 ♀♀), Damietta 5. XI. 1935 (1 ♀), Ismailia 11. V. 1964 (1 ♂ & 1 ♀).....(MAC)

Cleopatra 22. VII. 1921 (1 ♀), Dekhela Mariout 7. IX. 1924 (1 ♀), 9. VII. 1927 (1 ♂), Dekhela 24. VI. 1926 (2 ♂♂).....(AZUC)

**Note:** In MAC, the type and cotype specimens refer to *N. brachystomus aegyptiacus* which were designated by Lindner (1925).

***Nemotelus matrouhensis* sp. nov.**

**(Figs 6-7, 12-17, 45-46).**

**Type locality:** (holotype) Mersa Matrouh July/Aug. 1931 (13 males & 8 females), Egypt (CUC).

**Length:** (male) body 3.9-4.1 mm, wing 2.9-3.1 mm.

(female) body 4.2-4.4 mm, wing 2.8-3.0 mm.

**Head index:** 112.7 (male) - 101.7 (female).

**Description:**

**Male:** Head higher than long in lateral view. Eyes bare, contiguous, facets on lower third contrastingly smaller. Facial projection shorter than half eye-length. Frons with 2 pale yellow spots above antennae, medially finely divided. Postocular area slightly produced in lower half. Antennae black, last flagellomere slender, about as long as 4<sup>th</sup> flagellomere. Head pile whitish. Thorax shining black, postpronotal calli and subnotopleural stripe strikingly pale yellow with black patches. Thoracic pile moderately long, whitish, semi-appressed. Legs pale yellow, all femora dark brown without apices, hind tibiae with large dark brown rings at middle, tarsi pale yellow.

Wings hyaline, distinct veins pale yellow. Halteres white with a darkened stalk. Abdomen yellow with usual black basal spot and transverse stripes at anterior margins of terga 2-5.

Male genitalia with high median process, deeply divided into a pair of blade-like, pointed projections. Aedeagus simple and broad in lateral view.

**Female:** Head length usually as long as high in female. Facial projection usually as long as half eye-length. Frons with pair of distinct transverse yellow stripes at eye-margin. Postocular area as long as basal antennal segments. Antennae as in male. Head pile whitish, particularly dense at eye-margin above frontal spots, on sides of facial projection and on postocular area. Thorax as in male. Abdomen black with large triangular, pale yellow, median-spots at posterior margins of terga 2-4.

**Local distribution:** Coastal strip.

**Geographical distribution:** Egypt.

**Specimens examined:**

Mersa Matrouh July/Aug. 1931 (13 ♂♂ & 8 ♀♀).....(CUC).

**Etymology:** This species is named after the locality of Matrouh (the second name) from where all of the specimens have been collected.

**Affinities:** *N. matrouhensis* sp. nov. is described as a new species based on: the head index in male, abdominal pattern in female, and colour of postpronotal calli &

subnotopleural stripe in both sexes. The males of the new species seem to be similar to the European species group containing *N. crenatus* Egger which is distinguished by having the head longer than high in lateral view [head index: 72-80] and the postpronotal calli & subnotopleural stripe strikingly pale yellow. On the other hand, the females of the new species resemble *N. punctiventris* Becker which is distinguished by having the abdomen with yellow posterior transverse stripes dilated laterally and medially on terga 2-4, postpronotal calli and subnotopleural stripe strikingly pale yellow.

Table 1: Measurements of body parts of *Nemotelus* spp.

Name of species	Body length (mm)		Wing length (mm)		Head index	
	male	female	male	female	male	female
<i>N. albifacies</i> Becker	4.8-5.0	5.5-5.7	3.0-3.2	3.8-4.0	66	72
<i>N. anchora</i> Loew	4.1-4.2	4.3-4.4	3.4-3.5	3.7-3.8	81	78
<i>N. candidus</i> Becker	4.9	5.1-5.2	3.4	3.1-3.2	108	94
<i>N. dendatus</i> Becker	4.4-4.6	4.7-4.9	3.8-4.0	3.8-4.0	90	76
<i>N. marinus</i> Becker	4.2	4.9	3.5	3.7	101	95
<i>N. niloticus</i> Olivier	4.4-4.6	4.7-4.9	3.0-3.2	3.1-3.3	63	53
<i>N. oasis</i> Becker	5.1	5.7	3.0	3.6	62	56
<i>N. punctiventris</i> Becker	4.2-4.4	4.1-4.3	3.0-3.2	3.0-3.2	94-101	90-100
<i>N. matrouhensis</i> sp. nov.	3.9-4.1	4.2-4.4	2.9-3.1	2.8-3.0	112.7	101.7

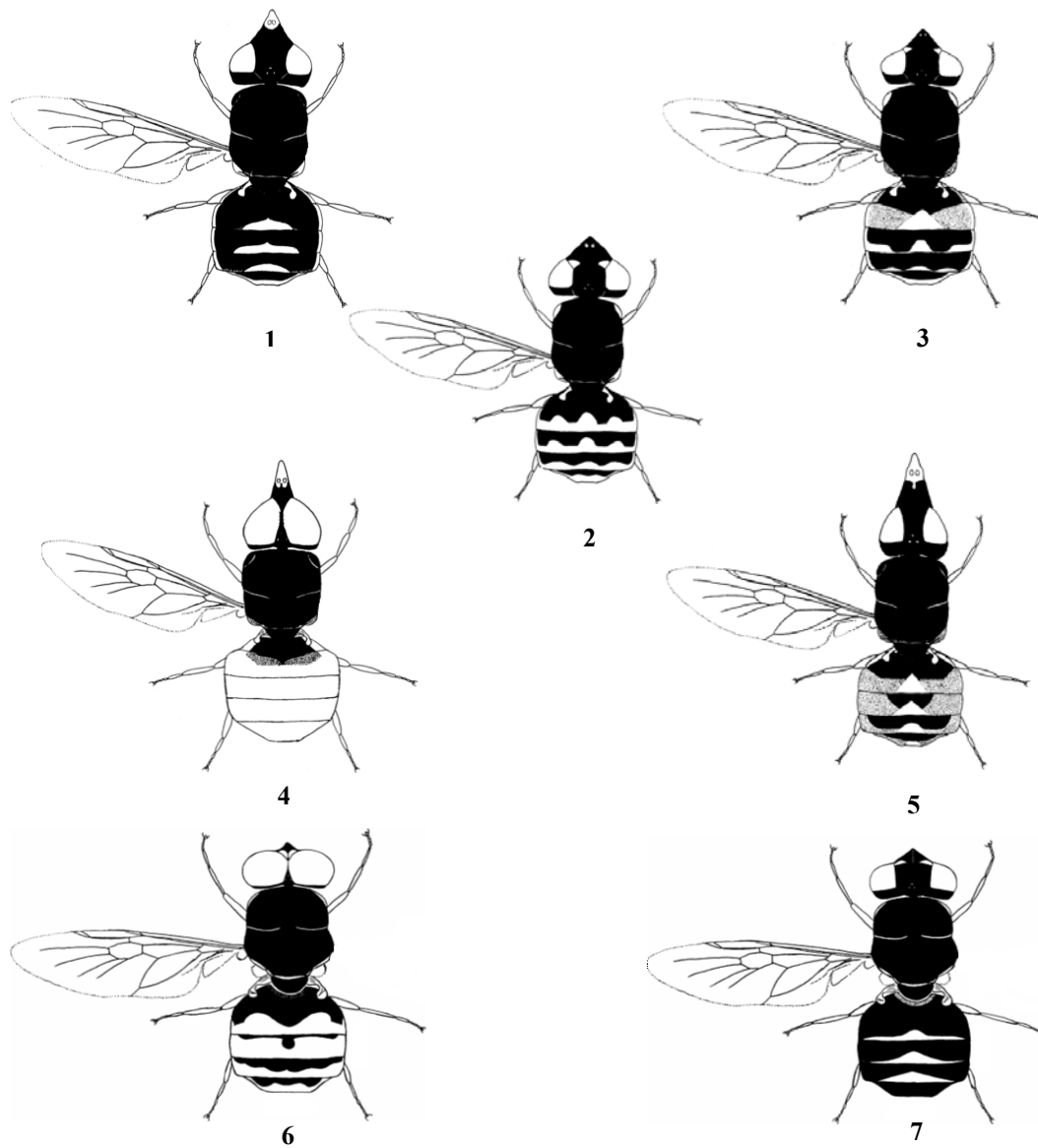
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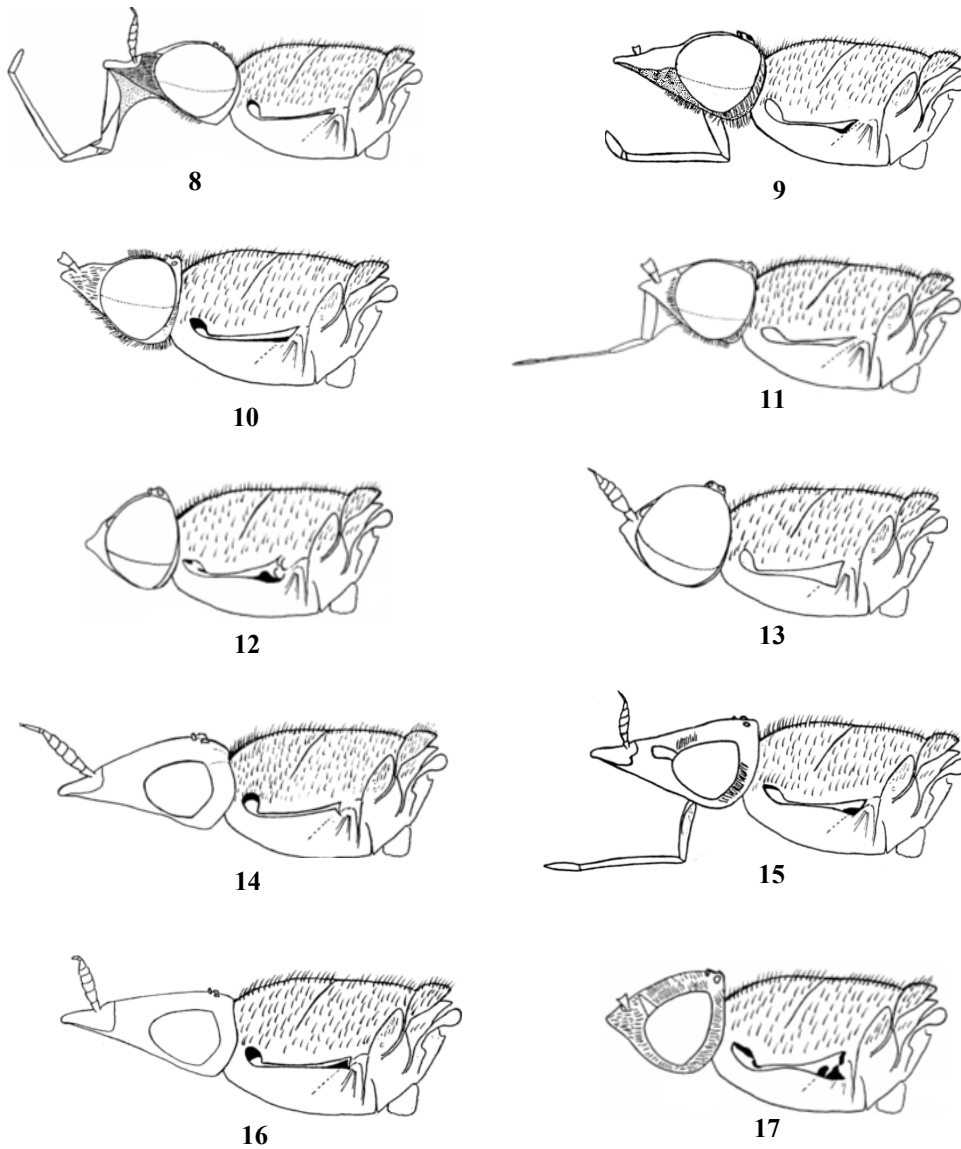
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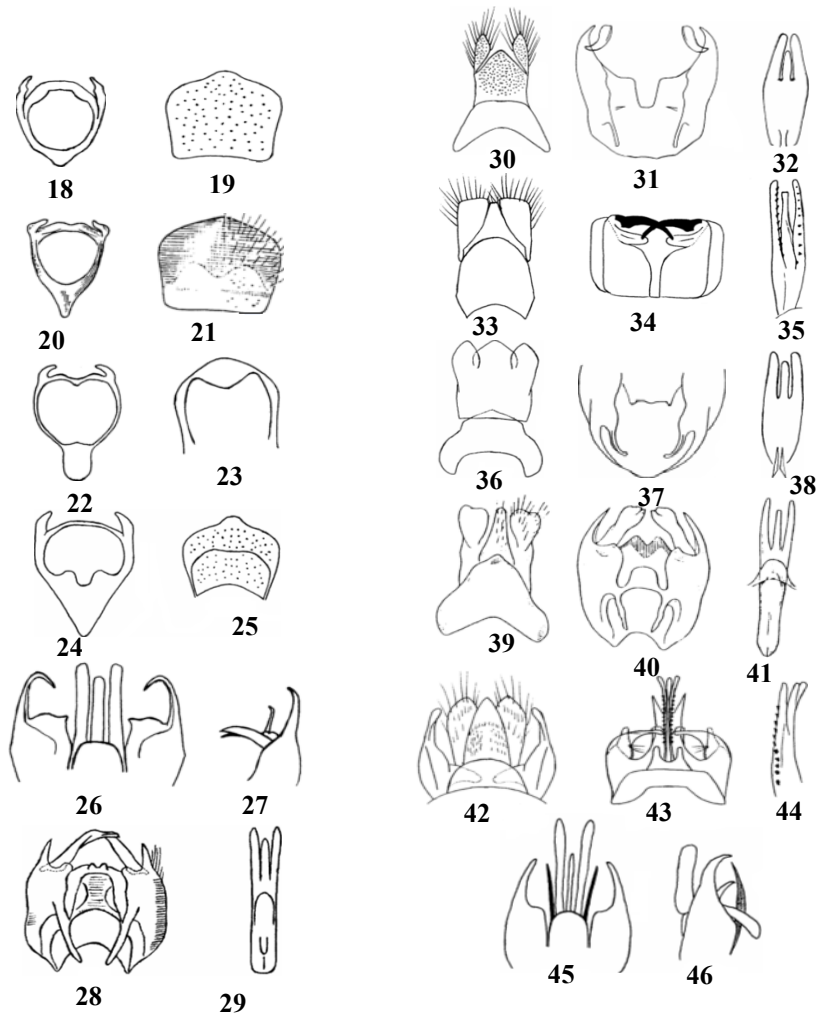
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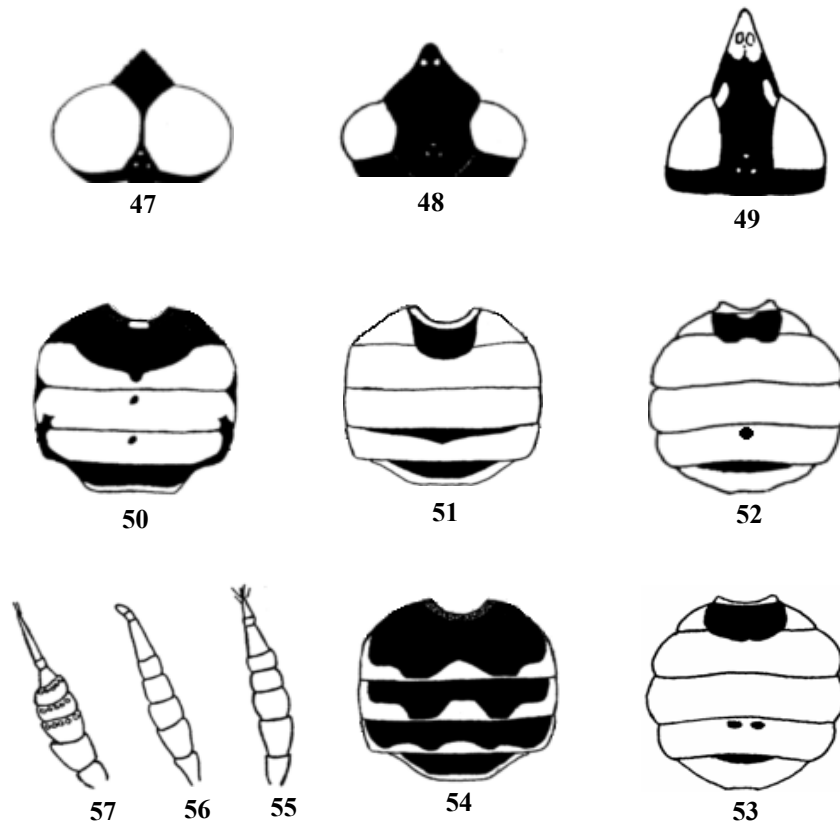
Figs. 1-7. Egyptian *Nemotelus* spp., habitus in dorsal view. 1. *N. albifacies* Becker, female. 2. *N. candidus* Becker, female. 3. *N. marinus* Becker, female. 4-5. *N. niloticus* Olivier, male (4) and female (5). 6-7. *N. matrouhensis* sp. nov., male holotype (6) and female allotype (7).



Figs. 8-17. *Nemotelus* spp., head & thorax in lateral view. 8, 14. *N. albifacies* Becker, male (8) and female (14). 9, 15. *N. oasis* Becker, male (9) and female (15). 10. *N. anchora* Loew, male. 11. *N. dentatus* Becker, male. 12, 17. *N. matrouhensis* sp. nov., male holotype (12) and female allotype (17). 13. *N. candidus* Becker, male. 16. *N. niloticus* Olivier, female.



Figs. 18-25. *Nemotelus* spp., male and female terminalia. 18-19. *N. albifacies* Becker, female genital furca (18) and subgenital plate (19). 20-21. *N. anchora* Loew, female genital furca (20) and subgenital plate (21) (adopted from Rozkosny 1983). 22-23. *N. dentatus* Becker, female genital furca (22) and subgenital plate (23). 24-25. *N. punctiventris* Becker, female genital furca (24) and subgenital plate (25). 26-27. *N. punctiventris* Becker, distal part of male genital capsule and aedeagal complex in dorsal (26) and lateral view with median process (27) (draw from dried specimen). 28-29. *N. marinus* Becker, male genital capsule (28) and aedeagal complex (29) (adopted from Rozkosny 1977). 30-32. *N. albifacies* Becker, dorsal part of male terminalia (30), genital capsule (31) and aedeagal complex (32). 33-35. *N. anchora* Loew, dorsal part of male terminalia (33), genital capsule (34) and aedeagal complex (35) (draw from dried specimen). 36-38. *N. niloticus* Olivier, dorsal part of male terminalia (36), proximal half of genital capsule (37) and aedeagal complex (38). 39-41. *N. candidus* Becker, dorsal part of male terminalia (39), genital capsule (40) and aedeagal complex (41) (adopted from Rozkosny 1977). 42-44. *N. dentatus* Becker, dorsal part of male terminalia covered the genital capsule and appeared the external posterolateral projections at sides (42), genital capsule and aedeagal complex in dorsal view (43) and distal part of aedeagal complex in lateral view (44) (draw from dried specimen). 45-46. *N. matrouhensis* sp. nov., male genital capsule in dorsal (45) and anterolateral view (46) (draw from dried specimen).



Figs. 47-49. *Nemotelus* spp., head in dorsal view. 47-48. *N. anchora* Loew, male (47) and female (48). 49. *N. oasis* Becker, female. 50-54. abdomen. 50. *N. anchora* Loew, male. 51. *N. marinus* Becker, male. 52-54. *N. punctiventris* Becker, male (52), male type of *N. brachystomus aegyptiacus* (53) and female (54). 55-57. antennae. 55. *N. punctiventris* Becker. 56. *N. marinus* Becker. 57. *N. anchora* Loew.

## ARABIC SUMMARY

## مراجعة تصنيفية لجنس *نيموتيليس* جيو فروى من مصر مع وصف نوع جديد و تسجيل ثلاثة أنواع لأول مرة

سلوى كمال محمد – حسن حمدنا الله فضل – سهير محمد جادالله – هيثم بدر اوى موسى بدر اوى  
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لقد تم عمل مراجعة تصنيفية لجنس *نيموتيليس* جيو فروى و قد احتوى على تسعة أنواع من مصر فى مقابل خمسة أنواع كانت مسجلة قبل نحو 40 عاما. و كانت من نتائج هذه المراجعة وصف *نيموتيليس* مطروحينيس كنوع جديد على العلم و تسجيل ثلاثة أنواع لأول مرة فى مصر و هى *نيموتيليس أنكورا* لوو و *نيموتيليس كانديداس* بيكر و *نيموتيليس أوسس* بيكر. بالاضافة الى أنه تم وصف و رسم عينة الأنثى من *نيموتيليس ألبيفاشيس* بيكر و ذلك لأول مرة، كما تم أيضا اعادة وصف و رسم كلا الجنسين (الذكر و الأنثى) من *نيموتيليس نيلوتكس* أوليفير لأول مرة.

و قد تم رفع *نيموتيليس بانكتيفينترس* بيكر كمرادف من *نيموتيليس براكيستوماس* لوو كما تم أيضا رفع الأنواع *نيموتيليس ألبيفاشيس* بيكر و *نيموتيليس أوسس* بيكر كمرادفات من *نيموتيليس نيلوتكس* أوليفير و أصبحت أنواع صحيحة (غير مشكوك فى صحتها). بالاضافة الى أنه تم نقل *نيموتيليس ثيودورى* بيكر و *نيموتيليس براكيستوماس* *ايجبتياكس* لندنر كمرادفات جديدة الى الأنواع *نيموتيليس أوسس* بيكر و *نيموتيليس بانكتيفينترس* بيكر على التوالي.

و لقد تم أيضا تشخيص و رسم عينات الأنثى من *نيموتيليس كانديداس* بيكر و *نيموتيليس مارينيس* بيكر لأول مرة اعتمادا على بعض الصفات الجديدة مثل طول الامتداد الوجهى و شكل قرون الاستشعار و تصميمات زخرفة البطن. بالاضافة الى ان هذه المرجعة اشتملت على رسومات توضيحية و مفاتيح تصنيفية و التوزيع المحلى و الجغرافى لكل الأنواع المتضمنة.