

Notes on *Pachliopta* species in South East Asia (Lepidoptera: Papilionidae)

Jan J.M. Moonen

KEYWORDS

anadyomene, *antiphus*, *atavus* ssp. nov., range overlap, *yoshikoae*

Entomologische Berichten 76 (1): 15-20

After the collections of NCB Naturalis, Leiden and the Zoological Museum of Amsterdam were merged into the single collection of Naturalis Biodiversity Center (NBC), the rearrangement of the *Pachliopta* collections and the specimen data led to several interesting discoveries. *Pachliopta aristolochiae anadyomene* occurs on North Sumatra and the islands Pulau We, Pulau Breueh and Simeulue. The ranges of *Pachliopta aristolochiae* and *P. antiphus* appear to overlap around North Sumatra and eastwards to Pulau Natuna Besar. Jordan's aberration *atavus* on Natuna is described as the subspecies *Pachliopta aristolochiae atavus* ssp. nov., which occurs together with *Pachliopta antiphus acuta*. For the subspecies of *Pachliopta antiphus* on Palawan, Dumaran, Cuyo and Busuanga (Philippines), the unavailable name *brevicauda* Staudinger is replaced by the available name *yoshikoae* Okano. For *Pachliopta adamas agricola* Tsukada & Nishiyama, there is material from a new locality: Pulau Kayuadi, besides the already known Pulau Jampea. *Pachliopta polyphontes polyphontes* (Boisduval) also occurs on three previously unrecorded islands: Muna, Buton and Binongko (Tukangbesi Islands).

Introduction

Rothschild (1895) and Jordan (1908-1909) had given a revision of the Papilionidae and divided the genus *Papilio* into species groups. Subsequently the relevant species group, the *polydorus* group, was transferred to the genus *Pachliopta* Reakirt by Munroe (1961) but misspelled as *Pachlioptera*. *Pachliopta aristolochiae* (Fabricius, 1775) was regarded as one species with among others the subspecies *asteris* (Rothschild, 1908) from the Malay Peninsula, *antiphus* (Fabricius, 1793) from West Java, Sumatra and the islands around, *acuta* (Druce, 1873) from Borneo and surrounding islands, *brevicauda* (Staudinger, 1889) from Palawan and *adamas* (Zinken, 1831) from Engano and Java. New discoveries and studies of these *Pachliopta* butterflies have necessitated new arrangements. Only in 1995 Page and Treadaway reclassified what used to be *Pachliopta aristolochiae* (Fabricius, 1775) into a complex of four species: *P. aristolochiae* (Fabricius, 1775), *P. antiphus* (Fabricius, 1793), *P. adamas* (Zinken, 1831) and the species *P. kotzebuea* (Eschscholtz, 1821), already separated by Hiura & Alagar (1971). They gave a review of the subspecies with their ranges, which will be supplemented here with new data from old collections.

A few years ago, several natural history collections, among them those of NCB Naturalis, Leiden (successor of the Rijksmuseum van Natuurlijke Historie - RMNH) and the Zoological Museum of Amsterdam, were combined to form the single collection of Naturalis Biodiversity Center, Leiden (NBC). During the process of rearranging the *Pachliopta* collections, the specimens from the Northern Sumatra region, already mentioned by van Eecke (1914) were found, providing interesting details of the distribution of both *Pachliopta aristolochiae* (Fabricius, 1775)

and *Pachliopta antiphus* (Fabricius, 1793). Since the name for the taxon from Natuna, ab. *atavus* Jordan, 1909 is infrasubspecific, it is necessary to describe this as a new subspecies. Also a correction of a homonym name and new localities for two *Pachliopta* species are mentioned.

Pachliopta species in Sundaland

The NBC collections contain *Pachliopta* material from North Sumatra and adjacent islands: Pulau We (formerly Pulau Weh), Pulau Breueh (Pulau Bras), Simeulue (Simaloer or Simalur), Pulau Babi and Pulau Lasia (Lasiak) and from islands east of Sumatra, from the Riau (Riouw) and Lingga archipelagos to the Anambas Islands to Pulau Natuna Besar (Groot Natoena, Greater Natuna), now the Riau Islands Province (Kepulauan Riau).

Pachliopta specimens from this area may have a white discal patch on the hindwing (as in figure 1), or not (as in figure 7). Fabricius described similar forms as *Papilio aristolochiae* Fabricius, 1775 (with patch) and *Papilio antiphus* Fabricius, 1793 (without patch). This probably resulted in some confusion among former scientists in the RMNH. Van Eecke (1914) wrote about the same specimens: 'So kam ich auf den Gedanken, dass *P. aristolochiae* F. und *P. antiphus* F. spezifisch verschieden seien,' ['It suggested the idea to me that *Papilio aristolochiae* F. and *Papilio antiphus* F. are specifically distinct from each other,']. However, dissection and study of the male genitalia led him to the conclusion that both taxa belong to a single species, namely *Papilio aristolochiae*, with two forms around and on North Sumatra. This was already the generally accepted opinion



1. ♂ *Pachliopta aristolochiae anadyomene* (Toxopeus). Indonesia: 'Poeloe Bras, Atjeh (leg.) Vigebius'. Left: upperside, right: underside (forewing length 43 mm). Photo: Jan Moonen

1. ♂ *Pachliopta aristolochiae anadyomene* (Toxopeus). Indonesië: 'Poeloe Bras, Atjeh (leg.) Vigebius'. Links: bovenzijde, rechts: onderzijde (lengte voorvleugel 43 mm).



2. ♀ *Pachliopta aristolochiae anadyomene* (Toxopeus). 'Sabang 17-2-1929'. Left: upperside, right: underside (forewing length 50 mm). Photo: Jan Moonen

2. ♀ *Pachliopta aristolochiae anadyomene* (Toxopeus). 'Sabang 17-2-1929'. Links: bovenzijde, rechts: onderzijde (lengte voorvleugel 50 mm).



3. ♂ *Pachliopta aristolochiae anadyomene* (Toxopeus). 'Simaloer 1924 Coll. v.d.Bergh'. Left: upperside, right: underside (forewing length 43 mm). Photo: Jan Moonen

3. ♂ *Pachliopta aristolochiae anadyomene* (Toxopeus). 'Simaloer 1924 Coll. v.d.Bergh'. Links: bovenzijde, rechts: onderzijde (lengte voorvleugel 43 mm).



4. ♀ *Pachliopta aristolochiae anadyomene* (Toxopeus). 'Simaloer 1924 Coll. v.d.Bergh'. Left: upperside, right: underside (forewing length 49 mm). Photo: Jan Moonen

4. ♀ *Pachliopta aristolochiae anadyomene* (Toxopeus). 'Simaloer 1924 Coll. v.d.Bergh'. Links: bovenzijde, rechts: onderzijde (lengte voorvleugel 49 mm).

(Rothschild 1895, Jordan 1909) at that time, and it remained so till the revision of Page & Treadaway (1995).

Pachliopta aristolochiae anadyomene (Toxopeus, 1941) (= *Papilio aristolochiae aphrodite* Kalis, 1933 but not *Papilio aphrodite* Fabricius, 1787) was overlooked for a long time. After Van Eecke (1914) had mentioned deviating specimens of *P. aristolochiae* from North Sumatra (Padang Sidempuan) and Simeulue, Kalis described such specimens from Sabang on Pulau We as *Papilio aristolochiae aphrodite*. Toxopeus (1941) noticed the homonymy (same name used for a different taxon) with *Papilio aphrodite* as described by Fabricius (a nymphalid now known as *Speyeria aphrodite* (Fabricius, 1787)), and renamed it *Papilio aristolochiae anadyomene*. Later the subspecies *aphrodite* was only mentioned by Tsukada & Nishiyama (1980), followed by Page & Treadaway

(1995), but misinterpreted by them as 'a subspecies of *P. antiphus*, being very close to the black *Pachliopta antiphus antiphus* Fabricius, 1793 and *Pachliopta antiphus acuta* Druce, 1873.' Study of specimens of *P. a. anadyomene* from Pulau We, Pulau Breueh, North Sumatra and Simeulue (figures 1-6) makes it clear that they belong to *Pachliopta aristolochiae* sensu Page & Treadaway (1995). There are no specimens of *P. antiphus* from Pulau We, Pulau Breue and Simeulue, but *P. antiphus* does occur on North Sumatra. On Pulau Lasia and Pulau Babi, just south of Simeulue, and on Pulau Nias only *P. antiphus* occurs (figure 7).

On Simeulue a form exists without white patches, which is quite different from *P. antiphus* but is more likely a form of *P. aristolochiae anadyomene* (figures 5-6). Further research is needed here.



5. ♂ *Pachliopta aristolochiae anadyomene* (Toxopeus), dark form. 'Simaloer 1928'. Left: upperside, right: underside (forewing length 45 mm). Photo: Jan Moonen

5. ♂ *Pachliopta aristolochiae anadyomene* (Toxopeus), donkere vorm. 'Simaloer 1928'. Links: bovenzijde, rechts: onderzijde (lengte voorvleugel 45 mm).



6. ♀ *Pachliopta aristolochiae anadyomene* (Toxopeus), dark form. Simaloer 1924 Coll. v.d.Bergh". Left: upperside, right: underside (forewing length 48 mm). Photo: Jan Moonen

6. ♀ *Pachliopta aristolochiae anadyomene* (Toxopeus), donkere vorm. Simaloer 1924 Coll. v.d.Bergh'. Links: bovenzijde, rechts: onderzijde (lengte voorvleugel 48 mm).



7. ♀ *Pachliopta antiphus antiphus* (Fabricius). 'Pulu Lasiak V.1917 leg. G. Harmsen'. Left: upperside, right: underside (forewing length 47 mm). Photos: Jan Moonen

7. ♀ *Pachliopta antiphus antiphus* (Fabricius). 'Pulu Lasiak V.1917 leg. G. Harmsen'. Links: bovenzijde, rechts: onderzijde (lengte voorvleugel 47 mm).



8. ♀ *Pachliopta aristolochiae jemajensis* Hanafusa. 'Anambas eil. Djemadja op Si Antan 1895 A.L. v.Hasselt'. Left: upperside, right: underside (forewing length 47 mm). Photo: Jan Moonen

8. ♀ *Pachliopta aristolochiae jemajensis* Hanafusa. 'Anambas eil. Djemadja op Si Antan 1895 A.L. v.Hasselt'. Links: bovenzijde, rechts: onderzijde (lengte voorvleugel 47 mm).

The Malay Peninsula, including Singapore, is the region where *Pachliopta aristolochiae asteris* Rothschild, 1908 occurs. Two specimens with the label 'Riouw-Lingga' belong to this subspecies. On Riau-Lingga the subspecies is sympatric with the more common *P. antiphus antiphus* (Fabricius, 1793). On the Anambas Islands *Pachliopta aristolochiae jemajensis* Hanafusa, 1989 (figure 8) occurs. It is not known if *Pachliopta antiphus* also inhabits these islands. From Pulau Natuna Besar a few specimens of *Papilio aristolochiae antiphus* ab. *atavus* Jordan, 1909 are present in the NBC collections. As *P. aristolochiae* and *P. antiphus* are two different species, this combination is incorrect. The specimens represent a distinct subspecies of *Pachliopta aristolochiae*, but the name *atavus* Jordan, 1909 is unavailable for this subspecies as it is infrasubspecific.

Here I therefore describe the taxon as *Pachliopta aristolochiae atavus* ssp. nov., thereby adopting Jordan's name, and treating it as a noun in apposition. The Natuna subspecies is very close to *jemajensis* Hanafusa, but the colour of the submarginal spots of the hindwing underside is red in the Natuna males (figure 9) and red or dull yellow in the females (figure 10). The colouring of the abdomen is the same as that of the submarginal spots. In the hindwing the white discal spots are separated from each other by black scaled veins. The white spot nearest to the outer margin (in space 5) is absent or small compared to ssp. *jemajensis*. There is no white spot at the end of the cell as in ssp. *jemajensis*.
Holotype ♂ 'Bunguran' ♀ ab. *atavus* Type Jord. 1908. in Seitz, Macrol. [BMNH] (figure 9).



9. ♂ Holotype *Pachliopta aristolochiae atavus* ssp. nov. 'Bunguran' (= type ab. *atavus* Jordan, 1909 [BMNH]). Left: upperside, right: underside (forewing length 56 mm). Photo: Adam Cotton
9. ♂ Holotype *Pachliopta aristolochiae atavus* ssp. nov. 'Bunguran' (= type ab. *atavus* Jordan, 1909 [BMNH]). Links: bovenzijde, rechts: onderzijde (lengte voorvleugel 56 mm).



10. ♀ Paratype *Pachliopta aristolochiae atavus* ssp. nov. 'Natoena eil. Boegoeron Mei 1895 A.L.v.Hasselt'. Left: upperside, right: underside (forewing length 54 mm). Photo: Jan Moonen
10. ♀ Paratype *Pachliopta aristolochiae atavus* ssp. nov. 'Natoena eil. Boegoeron Mei 1895 A.L.v.Hasselt'. Links: bovenzijde, rechts: onderzijde (lengte voorvleugel 54 mm).



11. ♂ *Pachliopta antiphus acuta* (Druce). 'Poelau Foedjoeh, Gr. Natoena acq. 1895 A.L.v.Hasselt'. Left: upperside, right: underside (forewing length 44 mm). Photo: Jan Moonen
11. ♂ *Pachliopta antiphus acuta* (Druce). 'Poelau Foedjoeh, Gr. Natoena acq. 1895 A.L.v.Hasselt'. Links: bovenzijde, rechts: onderzijde (lengte voorvleugel 44 mm).

Paratypes ♀ 'A.S. v. Hasselt Natoena eil. Boegoeron Mei 1895' [NBC] (figure 10); ♀ 'Natoena eil.' [NBC]; ♂ 'A.S. v. Hasselt Poelau Foedjoeh Gr. Natoena acq. 1895'.

Pachliopta antiphus acuta (Druce, 1873) (figure 11) also occurs on Pulau Natuna Besar and is apparently more abundant than *P. aristolochiae atavus*. Therefore it is clear that the range of *P. aristolochiae* in Sundaland extends from the Malay Peninsula and the Riau Archipelago to the Anambas and Natuna Islands. The map (figure 12) shows the distribution of *P. aristolochiae* and *P. antiphus*. The studied specimens for this subject are listed in box 1

BOX 1

***Pachliopta* material concerning this subject studied from NBC collections**

P. aristolochiae anadyomene: 3♂, 3♀ Pulau Weh; 1♂ Pulau Bras; 2♂ North Sumatra (Padang Sidempoean and Singkel (= Singkil)); 8♂, 6♀ Simeulue, of which 2♂, 1♀ of the dark form.

P. aristolochiae asteris: 2♂ 'Riouw-Lingga'

P. aristolochiae jemajensis: 1♀ Anambas (Djemadja op Si Antan)

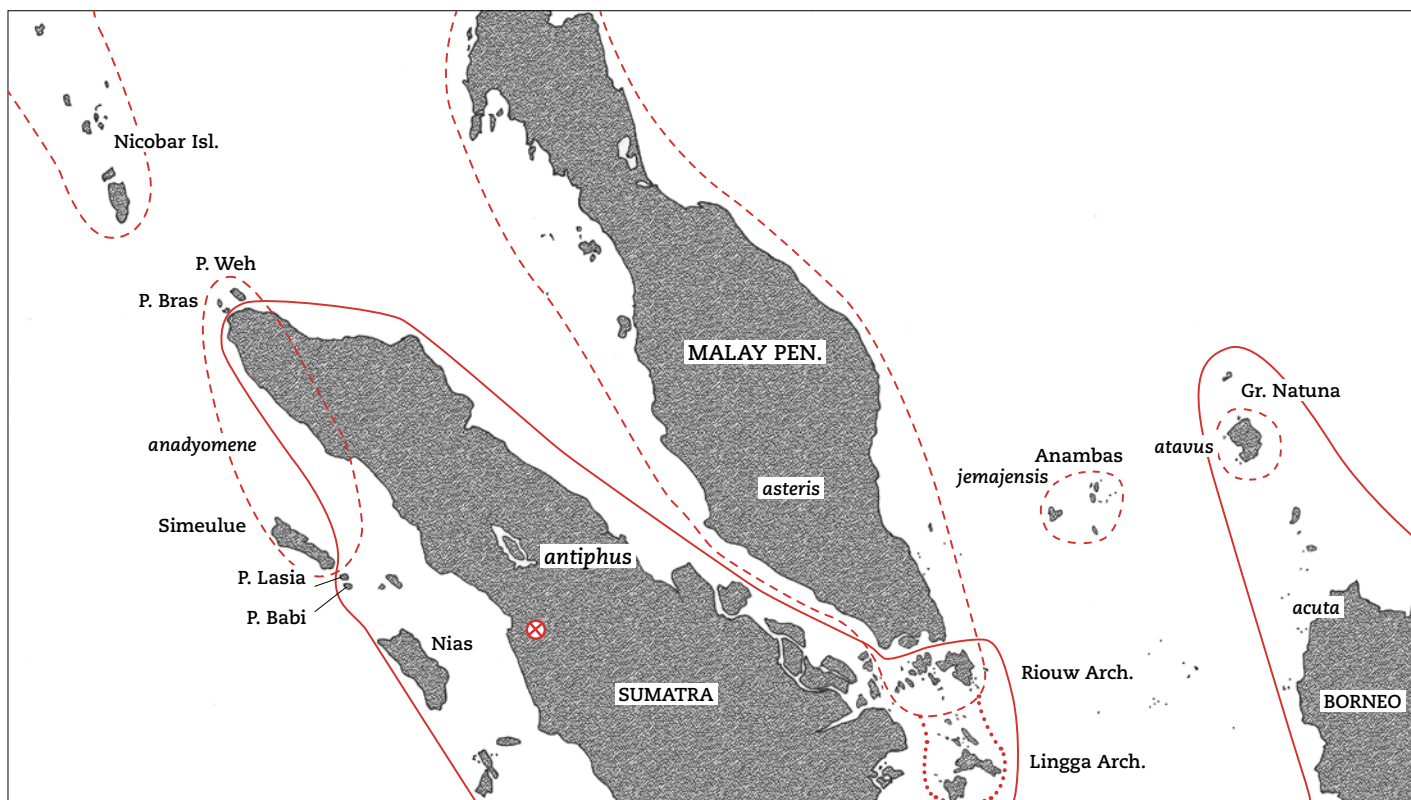
P. aristolochiae atavus: 1♂, 2♀ Gr. Natuna

P. antiphus antiphus: 9♂, 6♀ Northwest and West Sumatra (among which Padang Sidempoean, Serdang); 3♀ Pulau Babi; 4♂, 1♀ Pulau Lasiak; 2♂, 2♀ Nias; 1♂ Kepulauan Batu, Tanahmas; 9♂, 3♀ 'Riouw-Lingga'

P. antiphus acuta 10♂, 1♀ Borneo; 8♂, 3♀ Gr. Natuna

Correction of a subspecies name

Because of their short tails, Staudinger (1889) described the specimens of *Papilio antiphus acuta* Druce from Palawan as ab. *brevicauda*, but an 'ab.' is a permanently unavailable name. Despite this, later *brevicauda* Staudinger, 1889 was treated as a subspecies of *Pachliopta aristolochiae* (Igarashi 1979, Tsukada & Nishiyama 1980, Treadaway 1989) and after the revision of the species, as a subspecies of *Pachliopta antiphus* (Treadaway 1995, Page & Treadaway 1995, 2004). However, in both cases the name must be replaced by an available name, also because *Papilio antiphus brevicuda* Staudinger, 1889 would be a junior homonym (the same name proposed for a new taxon) of *Papilio brevi-*



12. Map of North Sumatra, Malay Peninsula to Kalimantan (Borneo) with the overlapping ranges of *Pachliopta aristolochiae* [- -] and *P. antiphus* [—]. The dotted line around the Lingga Archipelago indicates the uncertainty of the occurrence of *P. aristolochiae*. The X on Sumatra indicates a male *P. aristolochiae anadyomene* from Padang Sidempuan, 22.xii.1889, mentioned by Van Eecke (1914). Names in italics refer to subspecies.

12. Kaart van Noord-Sumatra, Maleis Schiereiland tot Kalimantan (Borneo) met de overlap in de verspreidingsgebieden van *Pachliopta aristolochiae* [- -] en *P. antiphus* [—]. De stippellijn om de Lingga Archipel geeft de onzekerheid aan over het voorkomen van *P. aristolochiae*. De X op Sumatra geeft de vindplaats aan van een mannetje van *anadyomene*, Padang Sidempuan 22.xii.1889, zoals genoemd door Van Eecke (1914). Cursieve namen geven ondersoorten aan.

cauda Saunders, 1869. The latter is a North American member of the *Papilio machaon* group. Page & Treadaway (1995) have stated that *Pachliopta aristolochiae yoshikoe* Okano, 1988 from Cuyo is a synonym of *P. antiphus brevicauda* (Staudinger, 1889), and I agree. Therefore, the correct name for the subspecies called *P. a. brevicauda* has to be derived from its former synonym: *P. antiphus yoshikoe* Okano, 1988 (new combination).

Pachliopta antiphus yoshikoe Okano, 1988 is the subspecies from the Philippine islands Palawan, Dumarán, Cuyo and Busuanga (Page & Treadaway 2004). In northern Borneo some specimens of *Pachliopta antiphus acuta* (Druce, 1873) have short tails: var. *periphus* Oberthür (1879). They are distinct from *P. a. yoshikoe*.

Distribution of two *Pachliopta* taxa

Pachliopta adamas agricola (Tsukada & Nishiyama, 1980) is until now only known from Pulau Jampea, an island halfway between Sulawesi and Timor. Concerned specimens from 'Tanah Djampea 1888' in the NBC collections were identified by Dammerman in 1909 and by R. van Eecke around 1915 as *Papilio antiphus* Fabricius. In 1980 Tsukada & Nishiyama described the *P. Jampea* population of *Pachliopta aristolochiae* as subspecies *agricola*. It was recognized as belonging to *P. adamas* by Page & Treadaway (1995). But there is also a large series collected in 1939 by J.M.A. van Groenendael from 'Poelau Djampea' (Pulau Jampea) as well as from 'Poelau Kajoeadi' (Pulau Kayuadi), an island to the north of Pulau Jampea (figure 13). The *P. Kayuadi* specimens are identical to those of *P. Jampea*, which means that the range of *P. a. agricola* (Tsukada & Nishiyama) includes both islands.



13. ♂ *Pachliopta adamas agricola* Tsukada & Nishiyama. 'Pul. Kajuaadi, Tanga Tanga IV.1939' (v. Groenendael handwriting). Left: upperside, right: underside (forewing length 48 mm). Photo: Jan Moonen
13. ♂ *Pachliopta adamas agricola* Tsukada & Nishiyama. 'Pul. Kajuaadi, Tanga Tanga IV.1939' (handschrift van v. Groenendael). Links: bovenzijde, rechts: onderzijde (lengte voorvleugel 48 mm).

Pachliopta polyphontes polyphontes (Boisduval, 1836) (syn. *lingonus* (Fruhstorfer, 1908), *phanocles* (Fruhstorfer, 1908), *bugius* (Ney, 1911)) occurs on Talaud Is., Sangihe Is., Banggai Is. and Sulawesi and islands nearby. The variation in the populations of the subspecies in South Sulawesi is not different from those elsewhere in Sulawesi, as Tsukada & Nishiyama (1980) stated. Vane-Wright & de Jong (2003) mentioned only Kabaena Is. and Wowoni Is. of the islands to the south east of Sulawesi, but considering the geographical situation of these islands it is not unexpected that subspecies *polyphontes* also occurs on Muna Is., Buton Is. and

Binongko Is. of the Tukangbesi islands. Specimens from these islands are present in the NBC collection.

Acknowledgements

I thank Adam Cotton for his help and comments and further the Uyttenboogaart-Eliassen Foundation for the financial support that makes it possible to travel frequently between Cadier en Keer and Leiden, Naturalis.

Literature

- Fruhstorfer H 1908. Neue *Papilio*-Rassen. Internationale Entomologische Zeitschrift 2:49-50.
- Hiura I & R E Alagar 1971. Studies on the Philippine butterflies chiefly collected by the co-operative survey by the Osaka Museum of Nat.Hist. and the National Museum of the Philippines, 1969. Part 1: Papilionidae. Bulletin of the Osaka Museum of Nat.Hist. 24:29-44, Pls. 1-4 (III. 1971)
- Hanafusa H 1989. Eleven new subspecies of Indonesian butterflies (Lep.: Papilionidae, Satyridae, Nymphalidae). Futaba 3: 10-17.
- Igarashi S 1979 Papilionidae and their early stages. (in Japanese) Vol.I Text:1-218, ill. Vol.II Plates color:1-223; bl/w:1-32; bl/w:1-102 (foodplants) Kodansha, Tokyo.
- Jordan K 1908-1909. Papilionidae, *Papilio* bis *Armandia*. In: Großschmetterlinge der Erde, die Indo-Australische Tagfalter IX (Seitz A ed): 11-109 Alfred Kernen Verlag.
- Kalis JPA 1933. Bijdrage tot de kennis van de Lepidoptera Rhopalocera van Nederlandsch Indië. Tijdschrift voor Entomologie 76: 47-86.
- Munroe E 1961. The Classification of the Papilionidae (Lep.). The Canadian Entomologist supplement 17: 1-51.
- Ney F 1911. *Papilio tamerlanus* var. *timur*. Entomologische Zeitschrift 24: 252.
- Okano K 1988. Four new subspecies of butterflies from Indonesia, Philippines and Papua New Guinea, with some notes on Indonesian butterflies. Tokurana 13 (3): 1-10.
- Page MGP & Treadaway CG 1995. Revision of the classification of *Pachliopta aristolochiae* (Fabricius, 1775) (Lepidoptera, Papilionidae) with special reference to the Philippine Islands. Nachrichten des entomologischen Vereins Apollo, supplement 14: 125-148.
- Page MGP & Treadaway CG 2004. Papilionidae of the Philippine Islands. In: Butterflies of the World. Supplement 8 (Bauer E & Frankenbach T eds). Goecke & Evers.
- Staudinger O 1889. Lepidopteren von der Insel Palawan. Deutsche Entomologische Zeitschrift 2: 3-180.
- Toxopeus L J 1941. On *Papilio aristolochiae* from Sumatra and adjoining islands. Entomologische mededeelingen van Nederlandsch-Indië 7: 48-49.
- Treadaway CG 1989 Checklist of Philippine Papilionidae Papilio International (Lepidoptera Group of 68, Denmark) 5: 375-381.
- Treadaway CG 1995 Checklist of the butterflies of the Philippine Islands (Lepidoptera: Rhopalocera). Nachrichten des entomologischen Vereins Apollo, Supplement 14: 7-118.
- Tsukada E & Nishiyama Y 1980. Papilionidae. In: Butterflies of the South East Asian Islands (Tsukada E ed): 1-457. Plapac Co.
- Van Eecke R 1914. Fauna Simalurensis. Studien über indo-australische Lepidopteren. Notes from the Leyden Museum 36: 193-258.
- Vane-Wright RI & De Jong R 2003. The butterflies of Sulawesi: annotated checklist for a critical island fauna. Zoologische Verhandlungen 43: 3-267.

Accepted: 1 December 2015

Samenvatting

Notities over *Pachliopta*-soorten in Zuidoost-Azië (Lepidoptera: Papilionidae)

Sinds de collecties van Leiden (NCB Naturalis) en Amsterdam (Zoölogisch Museum) onder één dak (Naturalis Biodiversity Center, Leiden - NBC) bijeen zijn, heeft het ordenen van de *Pachliopta*-collecties met bijbehorende gegevens interessante resultaten opgeleverd. *Pachliopta aristolochiae anadyomene* komt voor op Noord-Sumatra en de eilanden Pulau We, Pulau Breueh en Simeulue. De verspreidingsgebieden van *Pachliopta aristolochiae* en *P. antiphus* blijken rondom Noord-Sumatra en oostwaarts tot Pulau Natuna Besar elkaar te overlappen. Jordans aberratie *atavus* op Natuna Besar is beschreven als subspecies *Pachliopta aristolochiae atavus* ssp. nov., die er samen met *P. antiphus acuta* voorkomt. Voor de ondersoort van *P. antiphus* van Palawan, Dumarán, Cuyo en Busuanga (Filippijnen) is de niet beschikbare naam *brevicauda* vervangen door de beschikbare naam *yoshikoe*, tot *P. antiphus yoshikoe*. Van *P. adamas agricola* is behalve materiaal van Pulau Jampea ook materiaal van een nieuwe vindplaats aangetroffen: Pulau Kayuadi. *Pachliopta polyphontes polyphontes* komt in Zuidoost-Sulawesi voor niet alleen voor op de eilanden Kabaena en Wowoni, maar ook op Muna, Butung en op Binongko (Tukangbesi Eilanden).

Jan J.M. Moonen
W. Alexanderstraat 4
6267 AR Cadier en Keer
jan@moonen.net

