Notes on *Arhopala* Boisduval, 1832 from Sulawesi and Maluku, including new subspecies of *A. argentea* Staudinger, 1888, *A. chamaeleona* Bethune-Baker, 1903, and *A. azenia* (Hewitson, [1863]) (Lepidoptera, Lycaenidae)

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Abstract: New island distribution records are presented for 23 species of the lycaenid genus *Arhopala* Boisduval, 1832, in the Sulawesi Region and Maluku Province, Indonesia. The following new subspecies are described and illustrated: *Arhopala argentea* ***boordi*** **ssp. n.;** *Arhopala argentea* ***verityae*** **ssp. n.;** *Arhopala chamaeleona* ***susyae*** **ssp. n.;** *Arhopala azenia* ***patsyae*** **ssp. n.;** all holotypes (males) in BMNH, London. A large specimen of *A. wildei* Miskin, 1891, is also illustrated from the island of Morotai, significantly further west than its previously known distribution. *A. acron* (Hewitson, 1862) is illustrated to facilitate separation of this species from *A. azenia* (Hewitson, [1863]).

Keywords: Indonesia, Sulawesi Region, Maluku Province, Lycaenidae, *Arhopala,* new distribution records, new subspecies, *eridanus, argentea, hercules, tyrannus, aruana, phaenops, alitaeus, nobilis, wildei, halmaheira, acetes, tephlis, chamaeleona, araxes, lata, philander, micale, acron, azenia, admete, disparilis, fulla, thamyras.*

Anmerkungen zu *Arhopala* Boisduval, 1832 von Sulawesi und den Molukken, mit neuen Subspezies von *A. argentea* Staudinger, 1888, *A. chamaeleona* Bethune-Baker, 1903 und *A. azenia* (Hewitson, [1863]) (Lepidoptera, Lycaenidae)

Zusammenfassung: Für 23 Arten der Lycaenidengattung *Arhopala* Boisduval, 1832 werden neue Inselverbreitungsangaben aus der Region von Sulawesi und den Molukken (Indonesien) gegeben. Die folgenden 4 neuen Unterarten werden beschrieben und abgebildet: *Arhopala argentea* ***boordi*** **ssp. n.;** *Arhopala argentea* ***verityae*** **ssp. n.;** *Arhopala chamaeleona* ***susyae*** **ssp. n.;** *Arhopala azenia* ***patsyae*** **ssp. n.,** alle männlichen Holotypen in BMNH, London. Ein auffällig großes Exemplar von *A. wildei* Miskin, 1891 von der Insel Morotai wird abgebildet, damit von einem deutlich weiter westlich gelegenen Fundort als bisher bekannt. *A. acron* (Hewitson, 1862) wird abgebildet, um die Unterscheidung von *A. azenia* (Hewitson, [1863]) zu ermöglichen.

Introduction

The genus *Arhopala* Boisduval, 1832, is one of the largest genera in the Lycaenidae, with more than 200 species distributed throughout the Oriental and Indo-Pacific regions from Sri Lanka to Australia and the Solomons Archipelago. In the west *Arhopala* barely reaches the Palaearctic region in Afghanistan (*A. dodonaea* Moore, 1857), and in the east it occurs as far as eastern Australia and the Solomon Island of San Cristobal. The genus was not reported from New Caledonia by Holloway & Peters (1976), and records of several *Arhopala* species from Vanuatu were questioned or discounted by Tennent (2009).

The most recent revision of *Arhopala* was that of Evans (1957), who recognised several subgenera and placed most of the species currently accepted by most authors as representing "typical" *Arhopala* in *Narathura* Moore, 1878. In Papua New Guinea *Arhopala* were dealt with comprehensively by Parsons (1998), who also commented on butterflies of the western half of the main island of New Guinea, which belongs politically to Indonesia, whilst Vane-Wright & de Jong (2003) dealt with the Sulawesi region in Indonesia. The many and varied islands of the Indonesian province of Maluku lie between Sulawesi and New Guinea; their butterfly fauna has become better known in recent years (Vane-Wright & Peggie 1994, Peggie et al. 1995, 2005, Rawlins & Tennent 2003, Yagishita 2006, 2007, Rawlins 2004, 2008, Tennent & Rawlins 2008a, b, 2009a, b, Tennent et al. 2009). This paper deals with new taxa and records of *Arhopala* species from the Sulawesi region and Maluku Province (see map).

Abbreviations

BMNH The Natural History Museum, London.

fw.	forewing.
fwl.	forewing length.
HT	holotype.
hw.	hindwing.
TL	type locality.
unf.	underside forewing.
unh.	underside hindwing.
uns.	underside, under surface.
upf.	upperside forewing.
uph.	upperside hindwing.
ups.	upperside, upper surface.

New *Arhopala* island records for Maluku Province and the Sulawesi region

Arhopala eridanus (C. Felder, 1860)

A. eridanus occurs in a number of subspecies from the Philippines (Palawan), through Sulawesi and the Sula Islands to the north and central Moluccas. Evans (1957: 92) reported *A. e. padus* Felder & Felder, 1865, from the north Moluccan island of Halmahera, to which we add Kasiruta (1 ♂, xi. 2007), Bacan (Alisi, pers comm. to A. Rawlins) and Morotai (Detani, pers. comm. to A. Rawlins). Nominotypical *eridanus* is known to occur on Ambon (the TL) and Seram. To this, we add Seram

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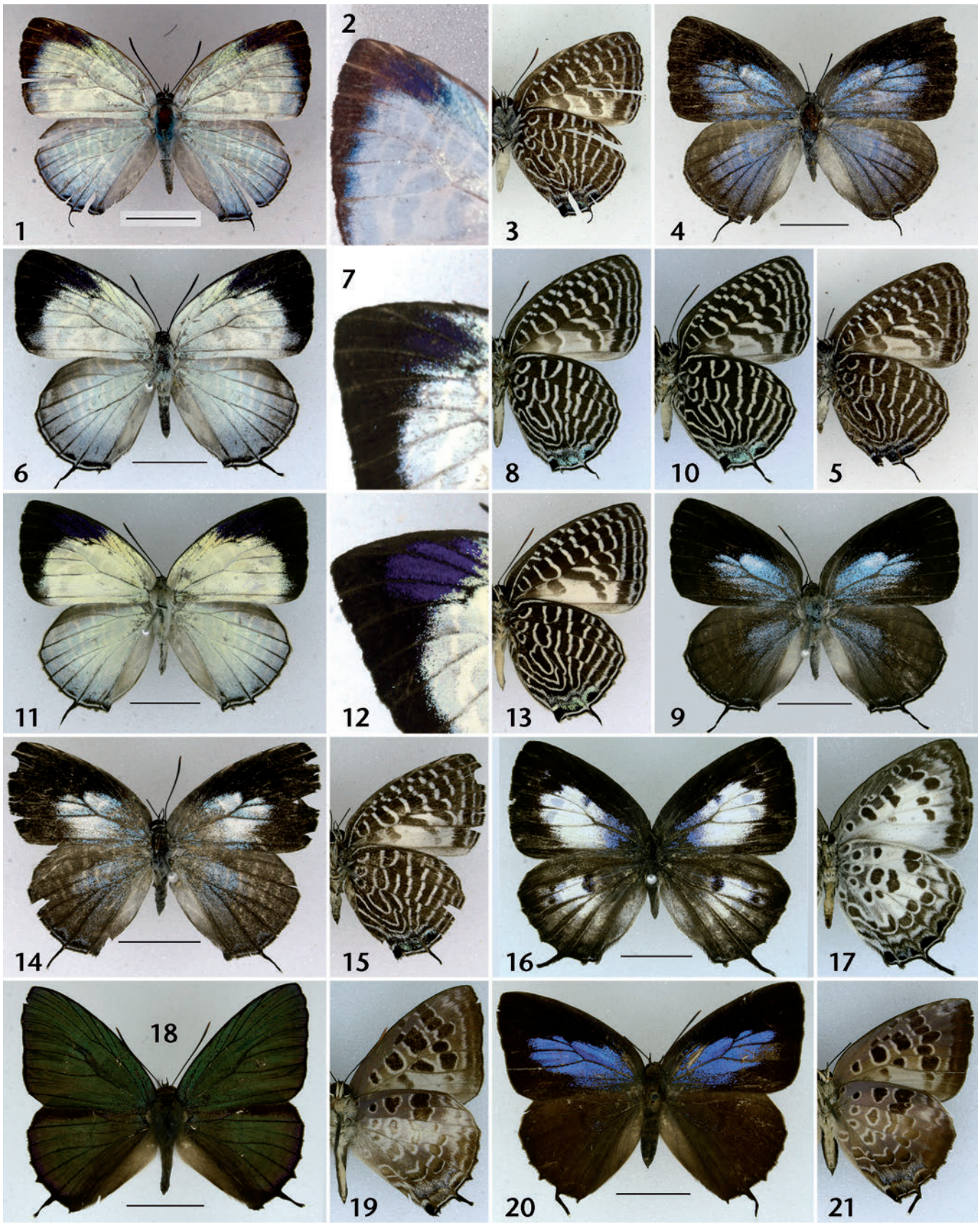

Figs. 1–5: *Arhopala argentea argentea* (Sulawesi). **Fig. 1:** ♂ ups. [picture no. 6454]. **Fig. 2:** ditto, left fw. (oblique view showing purple scales). **Fig. 3:** ditto, uns. [6456]. **Fig. 4:** ♀ ups. [6459]. **Fig. 5:** ditto, uns. [6461]. — **Figs. 6–10:** *A. argentea boordi* (Peleng). **Fig. 6:** HT ♂ ups. [7302]. **Fig. 7:** ditto, showing purple scales [7306]. **Fig. 8:** ditto, uns. [7304]. **Fig. 9:** ♀ ups. [7309]. **Fig. 10:** ditto, uns. [7314]. — **Fig. 11–15:** *A. argentea verityae*: **Fig. 11:** ♂ ups. (HT: Taliabu) [7288]. **Fig. 12:** ditto, showing purple scales [7294]. **Fig. 13:** ditto, uns. [7292]. **Fig. 14:** ditto, ♀ ups. (Taliabu) [7296]. **Fig. 15:** ditto, uns. [7299]. — **Fig. 16–17:** *A. wildei* ssp., **Fig. 16:** ♀ ups. (Morotai) [7340]. **Fig. 17:** ditto, uns. [7342]. — **Fig. 18–29:** *A. chamaeleona,* different sspp. **Fig. 18–21:** *A. chamaeleona chamaeleona.* **Fig. 18:** ♂ ups. (Upper Aroa River, Papua New Guinea) [6989]. **Fig. 19:** ditto, uns. [6992]. **Fig. 20:** ditto, ♀ ups. (Papua New Guinea) [6994]. **Fig. 21:** ditto, uns. [6996].

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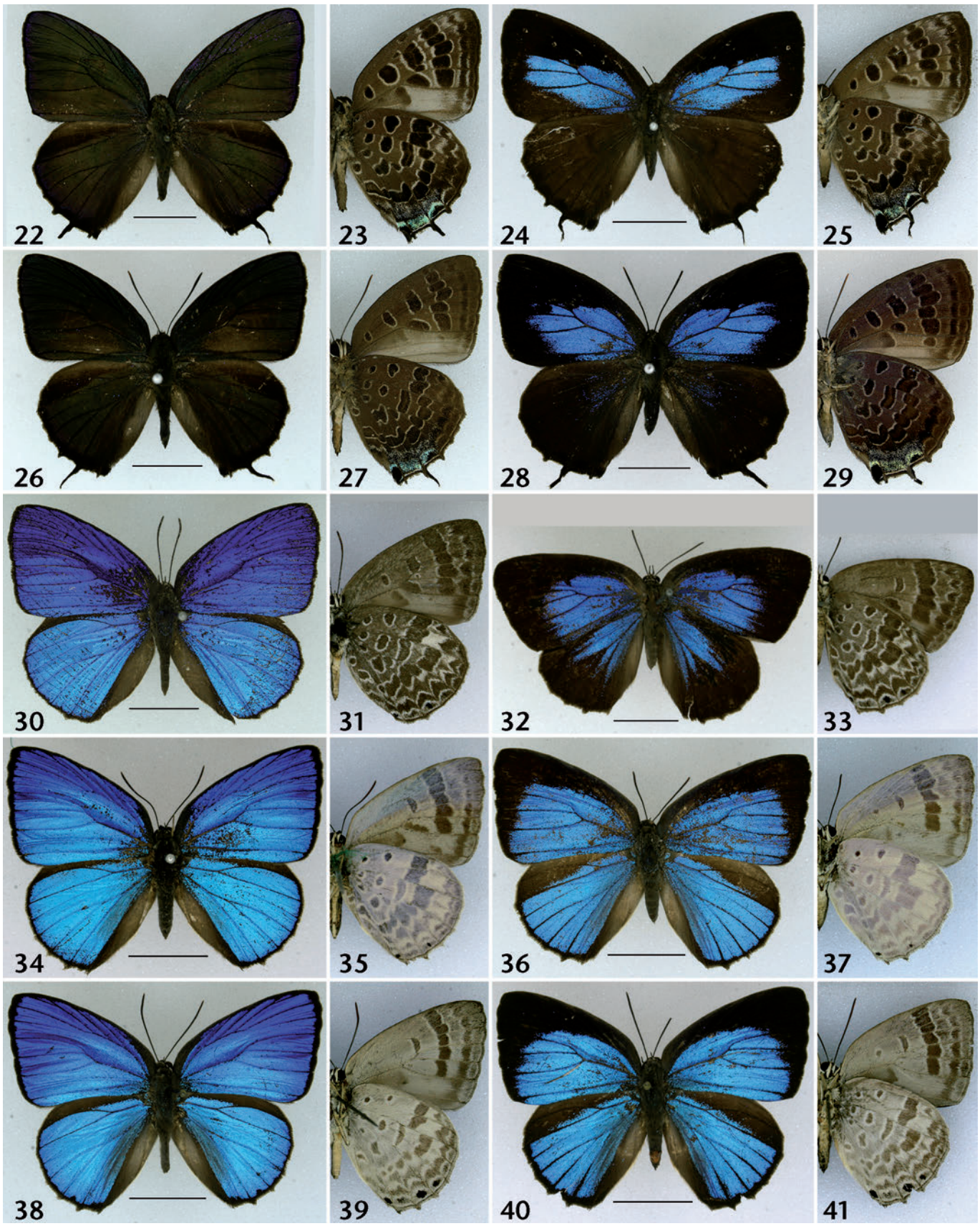

Fig. 22–25: *A. chamaeleona rileyi* **Fig. 22:** ♂ ups. (Seram) [6999]. **Fig. 23:** ditto, uns. [7000]. **Fig. 24:** ditto, ♀ ups. (Seram) [7002]. **Fig. 25:** ditto, uns. [7005]. **Fig. 26–29:** *A. chamaeleona susyae* **Fig. 26:** ♂ ups. (HT: Bacan) [7318]. **Fig. 27:** ditto, uns. [7324]. **Fig. 28:** ditto, ♀ ups. (Morotai) [7331]. **Fig. 29:** ditto, uns. [7336]. — **Fig. 30–33:** *A. acron* **Fig. 30:** ♂ ups. (Halmahera) [7009]. **Fig. 31:** ditto, uns. [7012]. **Fig. 32:** ditto, ♀ ups. (Halmahera) [7014]. **Fig. 33:** ditto, uns. [7015]. — **Fig. 34–41:** *A. azenia,* different sspp. **Fig. 34–37:** *A. azenia azenia.* **Fig. 34:** ♂ ups. (Papua New Guinea) [7019]. **Fig. 35:** ditto, uns. [7021]. **Fig. 36:** ditto, ♀ ups. (Papua New Guinea) [7023]. **Fig. 37:** ditto, uns. [7025]. **Fig. 38–41:** *A. azenia patsyae* **Fig. 38:** ♂ ups. (HT: Obi) [7028]. **Fig. 39:** ditto, uns. [7031]. **Fig. 40:** ditto, ♀ ups. (Obi) [7032]. **Fig. 41:** ditto, uns. [7034]. — Scale bars: 1 cm.

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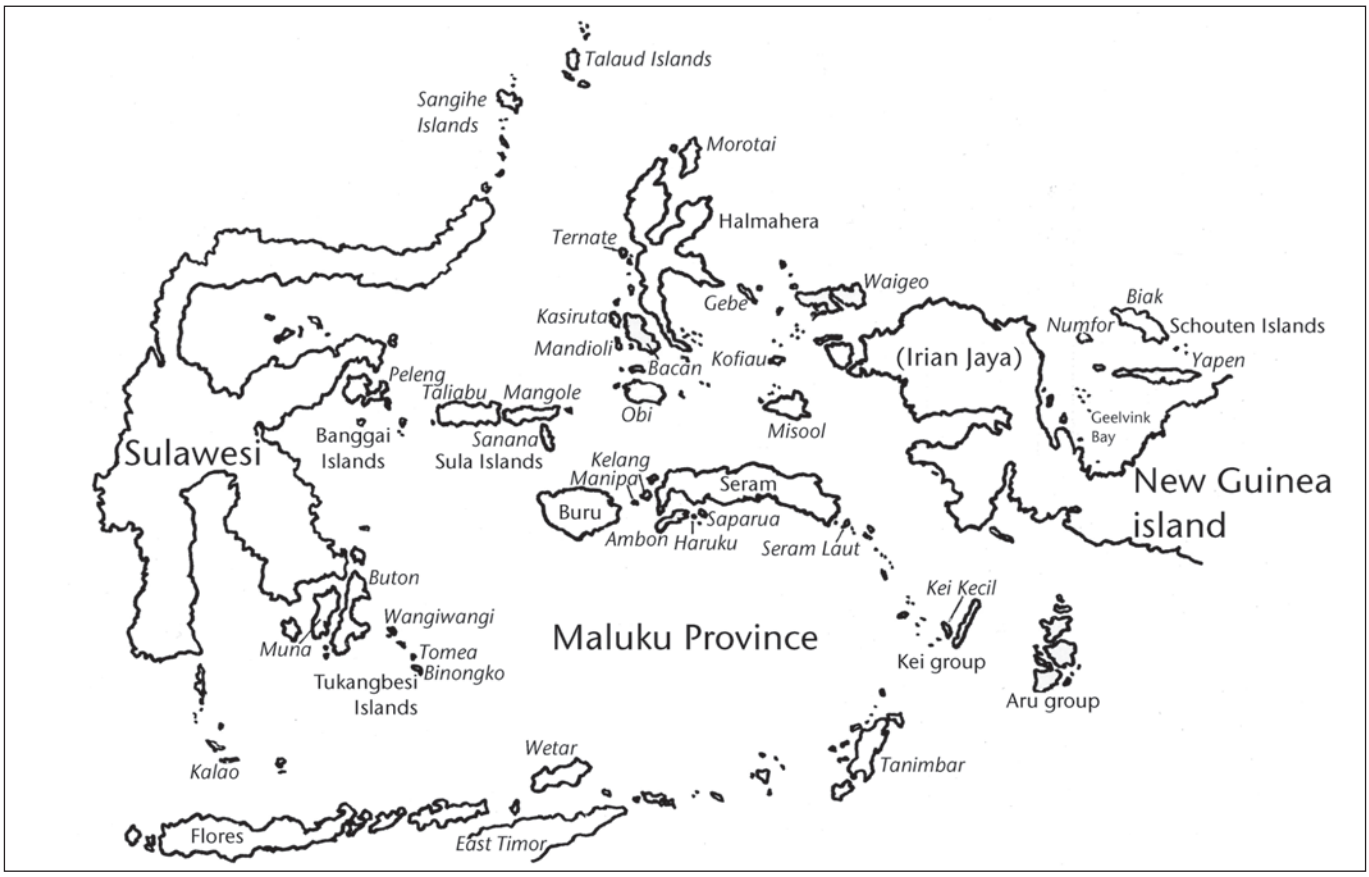

Map: Sulawesi and Maluku regions, Indonesia, showing locality of islands mentioned in text.

Laut (one specimen in BM: Ceram Laut, 15. XII. [18]99, H. KÜHN), Kelang (4 ♂♂, 2 ♀♀, Tihu, Kelang, XI. 2003), Manipa (1 ♂, 18. IX. 1993) and Haruku (a small island near Ambon, 2 ♀♀, X. 2006).

Arhopala argentea STAUDINGER, 1888

(Figs. 1–15)

A. argentea has previously been regarded as endemic to the island of Sulawesi. There are 4 ♀♀ in the BMNH, all collected on the Project Wallace expedition in 1985 at or near the sub-camp known as "1440" (actually nearer 1140 m elevation). D'ABRERA (1986: [567]) illustrated both surfaces of a ♂ specimen with a missing hindwing (the type of *clarissa* GROSE-SMITH, 1897, a synonym of *argentea*), and further specimens of both sexes of nominotypical *argentea* were seen by the authors in the private collection of Alan CASSIDY.

Material recently received by the second author from the islands of Peleng and Taliabu represent undescribed taxa:

Arhopala argentea ***boordi*** **ssp. n.**

(Figs. 6–10)

HT ♂: Indonesia, Sulawesi region, Banggai Islands, Peleng, II. 2007 (BMNH).

Paratypes (4 ♂♂, 4 ♀♀): 1 ♂, 1 ♀, same data (BMNH); 1 ♂, 1 ♀, same data; 1 ♂, VII. 2007; 1 ♀, IX. 2007; 1 ♂, I. 2008; 1 ♀, XII. 2008 (coll. RAWLINS).

Distribution: Peleng, Banggai Islands, Indonesia.

Diagnosis: ♂ fwl. 18 mm (HT); like nominotypical *argentea;* upf. border broader, extending less than half way along costa due to sharply angled inner margin (cf. *A. a. verityae,* below); restricted purplish subcostal scales when viewed obliquely (cf. Figs. 2, 7, 12); uns. like nominotypical *argentea*. ♀ upf. like nominotypical *argentea*, silvery blue basal markings restricted (more extensive in nominotypical *argentea*); uph. basal markings restricted and subdued (more extensive, paler, brighter in nominotypical *argentea*); uns. markings like nominotypical *argentea*, unh. subtornal iridescent blue-green scales more extensive than ♀♀ of other races seen.

Arhopala argentea ***verityae*** **ssp. n.**

(Figs. 11–15)

HT ♂: Indonesia, Maluku, Sula Islands, Taliabu, Taliabu Barat, Jorjoga, VII. 2003 (BMNH).

Paratypes (2 ♂♂, 1 ♀): 1 ♀, same data as HT, VII. 2008 (BMNH); 2 ♂♂, central Taliabu, 800 m, VII. 2003 (coll. C. MÜLLER).

Distribution: Taliabu, Sula Islands, Indonesia.

Diagnosis: ♂ fwl. 21 mm; like nominotypical *argentea*; ups. shining silvery white distinctly tinged greenish (less so in nominotypical *argentea*); upf. dark border extends approximately half way along costa (significantly less than half way in nominotypical *argentea* due to sharply angled inner margin to border); extensive purple subcostal mark seen only in oblique light (see Fig. 12) (in nominotypical *argentea* reduced to a few purple scales

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which extend along the marginal border, cf. Figs. 2, 7, 12); border reaches tornus broadly (less broad at tornus in nominotypical *argentea*); inner margin of border more regular than nominotypical *argentea;* uns. typical *Arhopala*, similar to nominotypical *argentea* in all significant respects. ♀ like nominotypical *argentea;* upf. basal areas silvery white less extensively suffused with blue scales; uph. less blue basally (it is noted that the only ♀ seen is rather worn); uns. like nominotypical *argentea*.

Arhopala hercules (Hewitson, 1862)

Classification and therefore distribution of *A. hercules* appears to be a matter of interpretation. The butterfly occurs in several forms which some authors (e.g. Evans 1957, D'Abrera 1990) postulated are all subspecies of *A. hercules,* whilst Parsons (1998) recognised 5 distinct species (*hercules; leo* Druce, 1894; *herculina* Staudinger, 1888; *tyrannus* Felder & Felder, 1865; *sophilus* Fruhstorfer, 1914), some of which occur sympatrically. Evans (1957) and Parsons (1998) both restricted the distribution of nominotypical *hercules* to Sulawesi, to which we add Peleng (1 ♂, vi. 2005; 1 ♀, xi. 2007; 1 ♀, xi. 2008) and Taliabu (3 ♂♂, i. 2009).

A. h. stymphelus Fruhstorfer, 1914 was recorded by Evans (1957: 100) from Bacan, Halmahera, Obi (BMNH 2 ♂♂) and Misool (BMNH, only 1 ♂ labelled Mysol, Hewitson coll.). We add the islands of Morotai (all Daeo: 1 ♂, 3. vi. 1992; 1 ♂, 23. viii. 1995; 1 ♂, iv. 2002; 2 ♂♂, viii. 2003; 1 ♂, xi. 2003; 2 ♀♀, iv. 2004; 1 ♂, xi. 2004; 1 ♀, iv. 2006; 2 ♀♀, vii. 2006), Mandioli (1 ♂, Galala, vi. 1997; 2 ♂♂, vii. 1998; 4 ♂♂, iv. 2003) and Kasiruta (1 ♂, vii. 1997; 1 ♀, iv. 2003; 1 ♂, x. 2003; 1 ♂, vi. 2005; 2 ♂♂, xi. 2007).

Arhopala tyrannus Felder & Felder, 1865

Regarded by some authors (see above) as a subspecies or form of *A. hercules*, *A. tyrannus* was recognised by Parsons (1998) as a distinct species. The species is previously known to occur on Bacan and Halmahera, and possibly Buru. The last island is questionable – there is a solitary ♂ in the BMNH labelled "Mt. Mada, Buru, 3000 [feet], Sept[ember] [18]98 (Dumas)", but there is also evidence to suggest that this and other taxa with similar labels (research in progress) might be from islands of North Maluku, not Buru. Two reports from Papua New Guinea (see Parsons 1998: 383) probably require confirmation. Its occurrence on Morotai (all Daeo: 3 ♂♂, ix. 1994; 2 ♂♂, xi. 2003; 1 ♂, xii. 2005; 2 ♀♀, ix. 2004; 2 ♂♂, xi. 2004) and Kasiruta (1 ♂, viii. 1993) represent new records.

Arhopala aruana Evans, 1957

Known from the Aru group, and mainland New Guinea (Parsons 1998: 384). A ♂ captured near Tual, Kei Kecil in iii. 1995, extends known distribution to include the Kei group.

Arhopala phaenops Felder & Felder, 1865

A. phaenops occurs in Burma, the Malay peninsula, Borneo, Sumatra, Java, Lombok, parts of the Sulawesi Region, North Maluku and the Philippines. Nominotypical *phaenops* occurs in parts of the Philippines (see Treadaway 1995: 75), Kep. Sangihe, Kep. Talaud, Kep. Banggai, and is previously known from Bacan in North Maluku (Evans 1957: 104). To this we add Taliabu (3 ♂♂, 3 ♀♀, i. 2009) and Sanana (1 ♂, v. 2005) in the Sula Islands and Kasiruta (1 ♂, vi. 2005) in North Maluku. *A. p. buruensis* Holland, 1900 occurs on Buru and Obi.

Arhopala alitaeus (Hewitson, 1862)

A. alitaeus ranges from Burma east through Sundaland and the Philippines to the Sulawesi region. Nominotypical *alitaeus* occurs on Sulawesi and Kep. Banggai (Vane-Wright & de Jong 2003: 123), to which we add Buton (1 ♂, v. 2006) and Taliabu (1 ♂, Jorjoga, xii. 2001; 1 ♂, i. 2009; 2 ♂♂, central Taliabu, 800 m, vii. 2003).

Arhopala nobilis (C. Felder, 1860)

The distribution of *A. nobilis* recorded by Evans (1957: 108) was confusing. He acknowledged 4 subspecies, from the Moluccas to New Guinea, including Schouten (= Biak/Supiori) and Mefor (= Numfor) islands in Geelvink Bay. He recorded nominotypical *nobilis* from Ambon, Seram, Obi and the Kei group, and *A. n. alce* Hewitson, 1862, from Sulawesi, Halmahera and Aru – indicating a belief that the published *alce* TL of "Aru" was probably Halmahera. He also recorded *A. n. alcestis* Grose-Smith, 1902 from the main island of New Guinea, Bacan, Gebe and Aru, with *A. n. bosnikiana* Joicey & Talbot, 1916 from Schouten and Mefor islands in Geelvink Bay.

North Moluccan populations are here regarded as *A. n. alce*. The BMNH has specimens from Halmahera and Bacan, to which we add the islands of Morotai (1 ♂, Daeo, viii. 2004) and Kasiruta (1 ♂, xi. 2004).

Arhopala wildei Miskin, 1891

(Figs. 16, 17)

Evans (1957: 108–109) reported *A. wildei* from Australia, and proposed the subspecies names *soda* Evans, 1957 for a short series from the Louisiade Archipelago and Woodlark Island in Milne Bay Province, Papua New Guinea, and *neva* Evans, 1957 for a pair from western New Guinea. A large ♀ specimen from Morotai (Daeo, v. 1994) extends the range of *A. wildei* westwards significantly; whilst recognising that it may represent an undescribed race, it is placed provisionally with nominotypical *wildei* until further material becomes available.

Arhopala halmaheira Bethune-Baker, 1904

Previously regarded as endemic to Halmahera, H. Detani (pers. comm. to A. Rawlins) reported a ♀ from Morotai. To this we further add Kasiruta (1 ♂, xi. 2007).

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Arhopala acetes (Hewitson, 1862)

Vane-Wright & de Jong (2003: 123) gave the distribution of *A. acetes* as Sulawesi, Kep. Talaud, Kep. Tukangbesi and Kep. Banggai. We specify Peleng (2 ♂♂, vi. 2006) from the Banggai Islands and Binongko (1 ♀, ii. 2005) from the Tukangbesi Islands, and add Muna (1 ♀, ii. 2001; 1 ♀, ii. 2005; 2 ♂♂, ii. 2005; 1 ♂: iv. 2005) and Buton (1 ♀, vi. 2005; 1 ♂, vi. 2005; 2 ♂♂, xi. 2004; 1 ♂, vii. 2003) to the known distribution of this species.

Arhopala tephlis Hewitson, 1869

Subspecies *bicolora* (Röber, [1886]) was previously only recorded from Sulawesi. We record this taxon from central Taliabu (1 ♂, vii. 2003), in coll. C. Müller.

Arhopala chamaeleona Bethune-Baker, 1903

(Figs. 18–29)

A. chaemeleona was described from the Upper Aroa River in Papua New Guinea. Evans (1957: 112) reported nominotypical *chamaeleona* from both eastern and western parts of the island of New Guinea, and from the Schouten Islands (= Biak/Supiori), Mefor (= Numfor) and Jobi (= Yapen). He restricted subspecies *rileyi* Joicey & Talbot, 1922, to Seram, central Maluku. The species also occurs to the northwest, in the Philippines, from where *A. c. mizunumai* Hayashi, 1978 and *A. c. maputi* Takanami, 1984 have been described.

D'Abrera (1990: 312) said of nominotypical *chamaeleona* (Figs. 18–21) "[the ♂ of] this species is especially distinctive in the green colouring of the [upper] surface ... it was extremely difficult to photograph the intense metallic green ... depending on the angle at which the specimen was viewed, one could also see blue and purple colouration ...". The specimen illustrated by D'Abrera as *A. chamaeleona* is clearly dark blue, not green, whether due to lighting, or film processing, or some other reason, is not known. Parsons (1998: pl. 56, fig. 1511) illustrated a ♂ ups. showing the dull green colour very well, and the same specimen depicted by D'Abrera as blue is illustrated here (Fig. 18). Regarding the uns., Evans (1957: 112) declared of the species "below, uniform brown, no white areas" and of subspecies *rileyi* Joicey & Talbot, 1922 (Figs. 22-25) "below, variegated with white areas". D'Abrera (1990: 312) gave the distribution of *A. c. rileyi* as "Sarang" (= Seram).

A. chamaeleona is recorded here from North Maluku for the first time:

Arhopala chamaeleona susyae ssp. n.

(Figs. 26–29)

HT ♂ (Figs.): Indonesia, Maluku, Makian, Bacan, x. 2004 (BMNH).

Paratypes (3 ♀♀): 1 ♀, Daeo, Morotai, iii. 2003 (BMNH); 1 ♀, same data, ii. 2004; 1 ♀, Bacan, viii. 2008 (coll. Rawlins).

Distribution: Bacan and Morotai, North Maluku, Indonesia.

Diagnosis: ♂ fwl. 23 mm; ups. dark, dull, olive green, appearing almost black (dull, shining green in nominotypical *chamaeleona* and *A. c. rileyi*); hw. costa and inner margin plain brown; outer margin with faint pinkish tinge in oblique light (more extensive in nominotypical *chamaeleona* and *A. c. rileyi*); uns. with markings typical of the genus, ground colour plain, dark brown with slightly darker markings lined pale brown (uns. paler, with pinkish tinge, unh. with prominent pale patches in nominotypical *chamaeleona*; markings intermediate in *A. c. rileyi*); unh. with extensive blue-green tornal iridescent scales. ♀ unf. dark brown, almost black, with extensive median blue patch reaching inner margin (slightly less extensive in other races); uph. with a few blue scales basally, otherwise unmarked; uns. like ♂, tinged pink; iridescent tornal scales green.

Arhopala araxes Felder & Felder, 1865

A. araxes occurs from Sumatra, Java and the Lesser Sunda islands to Sulawesi. Distribution of nominotypical *araxes* was given by Vane-Wright & de Jong (2003: 123) as "Sulawesi, Kep. Sangihe, ?Kep. Banggai, Kep. Sula (Mangole)". We can confirm the occurrence of *A. araxes* on the Banggai Islands with records from Peleng (3 ♂♂, viii. 2003; 2 ♀♀, viii. 2006; 2 ♂♂, iv. 2007), and add Taliabu (1 ♂, Jorjoga, iii. 2004) to the Sula Islands distribution. Other new records are Muna (1 ♀, ii. 2005), Buton (3 ♂♂, 1 ♀♀, vi. 2005) and the Tukangbesi Islands of Wangiwangi (3 ♂♂, Wanceh [= Wanci], ii. 2005), Tomea (1 ♂, viii. 2004) and Binongko (3 ♂♂, 2 ♀♀, ii. 2005). *A. a. talauta* Evans, 1957, occurs on Kep. Talaud and *A. a. verelius* Fruhstorfer, 1914 on Kalao.

Arhopala lata Evans, 1957

Previously known only from Halmahera, we extend the distribution to include Morotai (all Daeo: 1 ♂, xii. 2003; 1 ♂, viii. 2004; 2 ♂♂, xi. 2004; 1 ♂, ii. 2006; 1 ♂, xi. 2006; 1 ♂, xii. 2008; 1 ♂, i. 2009).

Arhopala philander Felder & Felder, 1865

A. philander ranges from Kep. Sangihe to Maluku and New Guinea including the Bismarck Archipelago and D'Entrecasteux group. Nominotypical *philander* is restricted to Kep. Sangihe and the northern Moluccan islands of Halmahera, Bacan, Obi and Gebe (Evans 1957, Parsons 1998). A specimen in the BMNH from Ternate appears to have been previously overlooked (1 ♂, Ternate, 1. [ix.] 1896, A. W. Mucks) and we also add Morotai (all Daeo: 1 ♂, 3. vi. 1992; 3 ♀♀, i. 2003; 1 ♀, xi. 2004; 1 ♀, iv. 2006; 1 ♀, vii. 2006; 1 ♂, i. 2009).

Arhopala micale Boisduval, 1853

A. micale ranges from the Moluccas, through New Guinea to the Torres Strait Islands and northern and north eastern Australia. Within Maluku, *A. m. superba* Röber, 1887, is known from Morotai, Halmahera, Ternate and Bacan, to which we add Mandioli (1 ♂, iv. 2003).

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Arhopala acron (Hewitson, 1862) and

(Figs. 30–33)

Arhopala azenia (Hewitson, [1863])

(Figs. 34–41)

In his *Arhopala* revision, Evans (1957: 124–125) treated the taxa *acron* and *azenia* Hewitson, 1863, as conspecific, placing the latter as a subspecies of "*Narathura acron*". He restricted *A. a. acron* to the Moluccan islands of Bacan and Halmahera, and listed the islands of Waigeo, Obi, Seram, Aru, Misol, Jobi (= Yapen) and the main island of New Guinea in the distribution of *A. a. azenia*. Parsons (1998: 392) correctly recognised that the taxa *acron* and *azenia* were distinct and said they were phenotypically separable, without saying how they differed. Parsons restricted distribution of *A. acron* to the north Moluccan islands of Bacan and Halmahera, and added Normanby, in the D'Entrecasteaux group off the north coast of eastern New Guinea, and Sariba, in the Louisiade chain, to the distribution of *A. azenia*.

The taxa are similar in appearance, but ♂♂ are separable by the fact that *A. acron* lacks the distinctive pale purplish sheen, which in effect dulls most of the underlying markings, found on the under surface of both sexes of *A. azenia*. The iridescent blue of the ups. of ♂ *A. azenia* is also distinctively "two-tone" when viewed obliquely, with a darker section along the upf. costa as far as the cell, and extending down the outer margin. The remainder of the ups. is a paler blue with a distinct greenish tinge. By comparison, *A. acron* is generally darker blue, and the "two-tone" effect is less obvious due to the fact that the paler section is less greenish than the corresponding areas of *A. azenia*. The slightly darker section of the *A. acron* upf. is more extensive than that of *A. azenia*, and in some specimens is difficult to discern at all. The ♀ of *A. acron* is darker blue than *A. azenia;* blue areas are more restricted, with a tendency to be "rayed" on the hindwing. On the uns., hw. submarginal markings are significantly more sagittate in *A. acron* than *A. azenia*; the uns. markings of *A. acron* are also darker brown, bordered with almost white, giving a contrasted appearance.

4 ♂♂ and 2 ♀♀ (Daeo, Morotai: 1 ♀, iv. 2002; 1 ♂, x. 2002; 2 ♂♂, iii. 2004; 1 ♂, 1 ♀, ix. 2004) extend the known distribution of *A. acron*. A long series of *A. azenia* in the BMNH from the Moluccan island of Obi are indistinguishable from nominotypical *azenia* on the ups., whilst on the uns. – also fundamentally *A. azenia* – there are some features intermediate between the two species:

Arhopala azenia patsyae ssp. n.

(Figs. 38–41)

HT ♂: Indonesia, Maluku, Obi, H. Fruhstorfer (ex Fruhstorfer coll.), BMNH.

Paratypes (25 ♂♂, 4 ♀♀): 11 ♂♂, 3 ♀♀, same data; 1 ♂, 1 ♀, Laiwui, Obi, ix. [18]97 (W. Doherty); 6 ♂♂, Obi, ex coll. Hamilton Druce 1919 (Joicey deposition); 5 ♂♂, Obi, W. J. C. Frost, vii., ix. 1918 (all BMNH); 1 ♂, Obi, vii. 1992; 1 ♂, Obi, Bobo, iv. 2003 (coll. A. Rawlins).

Distribution: Obi, Maluku, Indonesia.

Diagnosis: ♂ fwl. 22 mm (HT); ups. indistinguishable from nominotypical *azenia;* uns. like nominotypical *azenia,* but lacking distinctive purplish sheen (overlay) present on *A. azenia* from all other localities seen; ♀ like nominotypical *azenia,* upf. bright, shining blue, with broad apical and costal border; uph. largely blue, lacking on costa and inner margin; uns. like ♂.

Arhopala admete Hewitson, [1863]

This species is distributed from Maluku Province, Indonesia, to Waigeo, Misool, Yapen and mainland New Guinea, and as far east as the D'Entrecasteaux and Louisiade groups, Papua New Guinea. Nominotypical *admete* is known from the Moluccan islands of Halmahera, Bacan, Obi (North Maluku), and Seram and Ambon (Central Maluku). To this we add Morotai (all Daeo: 2 ♂♂, 1 ♀, ix. 1994; 1 ♀, ix. 1997; 1 ♀, xi. 2003; 2 ♂♂, 2 ♀♀, ix. 2004; 1 ♂, 1 ♀, xi. 2004; 2 ♂♂, x. 2005) and Kasiruta (5 ♂♂, 6 ♀♀, v. 2005) in N. Maluku and Kelang (4 ♂♂, 1 ♀, Tihu, xi. 2003) in Central Maluku.

Arhopala disparilis (C. Felder, 1860)

A. disparilis is endemic to the Moluccan islands. Evans (1957: 125) recorded it from Ambon and Seram. A ♂ from Morotai (Daeo, iii. 1994) extends the known distribution and suggests it probably also occurs on Halmahera. We also record it from Haruku, Central Maluku (2 ♀♀, x. 2006).

Arhopala fulla (Hewitson, 1862)

This species ranges widely from Burma, the Andaman Islands and Thailand through Malaysia, Borneo, and the Philippines, Indonesia and Papua New Guinea as far east as the Louisiades. Nominotypical *fulla* is known from the central Moluccan islands of Ambon and Buru; *A. f. canulia* Hewitson, 1869 occurs only in North Maluku, on Halmahera, Ternate and Obi. To the latter we add Morotai (1 ♀, Daeo, Morotai, ix. 2004).

Arhopala thamyras (Linnaeus, 1758)

A. thamyras ranges from the Moluccan islands through New Guinea to the Admiralties, D'Entrecasteaux, Trobriand and Louisiade island groups and the Solomon Islands. *A. t. anthore* (Hewitson, 1862) is restricted to Halmahera, Bacan, Ternate and Obi, to which we add Morotai (all Daeo: 1 ♂, 3. vi. 1992; 2 ♂♂, iii. 1994; 1 ♂, iv. 2002; 1 ♀, viii. 2003; 1 ♀, xi. 2003; 1 ♂, iii. 2004; 1 ♀, v. 2004; 1 ♀, viii. 2005; 1 ♀, i. 2009) and Mandioli (1 ♀, Waya, 16. xi. 2006). 3 ♂♂ from the island of Kofiau (2 ♂♂, viii./ix. 1991, 1 ♂, 12. ix. 1991) may warrant recognition as a distinct subspecies.

Etymology

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References

D'Abrera, B. L. (1986): Butterflies of the Oriental Region. Part III. Lycaenidae & Riodinidae. — Melbourne (Hill House), pp. i–xv, 536–672.

—— (1990): Butterflies of the Australian Region., 3rd (revised) edition. — Melbourne (Hill House), 416 pp.

Evans, W. H. (1957): A revision of the *Arhopala* group of Oriental Lycaenidae (Lepidoptera: Rhopalocera). — Bulletin of the British Museum of Natural History (Entomology), London, **5** (3): 85–141.

Holloway, J. D., & Peters, J. V. (1976): The butterflies of New Caledonia and the Loyalty Islands. — Journal of Natural History, London, **10:** 273–318.

Parsons, M. J. (1998): The butterflies of Papua New Guinea: Their systematics and biology. — London (Academic Pr.), xxvi + 736 pp., 104 pls.

Peggie, D., Rawlins, A., & Vane-Wright, R. I. (2005): An illustrated checklist of the papilionid butterflies (Lepidoptera: Papilionidae) of northern and central Maluku (Indonesia). — Nachrichten des Entomologischen Vereins Apollo, Frankfurt am Main, N.F. **26** (1/2): 41–60.

——, ——, & Yata, O. (1995): An illustrated checklist of the pierid butterflies of northern and central Maluku (Indonesia). — Butterflies, Japan, **11:** 23–48.

Rawlins, A. (2004): A review of subspecies and distribution of *Pareronia argolis* (C. & R. Felder) from Maluku Province, Indonesia (Lepidoptera, Pieridae). — Futao, Japan, **48:** 9–[11].

—— (2008): An annotated and illustrated checklist of the butterflies (Papilionoidea) of Wetar island, Maluku, Indonesia. — Rainham, Kent (private publication), 95 pp.

——, & Tennent, W. J. (2003): A new species of *Mynes* Boisduval (Lepidoptera: Nymphalidae) from the Moluccas, Indonesia. — Australian Entomologist, Brisbane, **30** (1): 21–24.

Tennent, W. J. (2009): A field guide to the butterflies of Vanuatu — Ol buttaflae blong Vanuatu. — Oxford (Storm Entomological Publ.), 192 pp.

——, & Rawlins, A. (2008a): A new subspecies of *Ypthima (Thymipa) sepyra* Hewitson, 1864 (Lepidoptera, Nymphalidae, Satyrinae) from the island of Morotai, Maluku, Indonesia. — Butterflies, Japan, **47:** 4–7.

——, & —— (2008b): A review of *Cethosia cydippe* (Linnaeus, 1767) (Lepidoptera: Nymphalidae) from the Moluccan islands (Maluku, Indonesia). — Butterflies (Teinopalpus), Japan, **49:** 67–81.

——, & —— (2009a): A new subspecies of *Elodina egnatia* Godart, 1819, from the island of Obi, Maluku, Indonesia (Lepidoptera, Pieridae). — Futao, Japan, **55:** 12–13, 15, figs. 15–24.

——, & —— (2009b): A new subspecies of *Hypochrysops anacletus* C Felder, 1860, from the island of Buru, Maluku, Indonesia (Lepidoptera, Lycaenidae, Theclinae). — Butterflies (Teinopalpus), Japan, **52:** 4–7.

——, Müller, C. J., & Rawlins, A. (2009): A new species of *Pseudodipsas* from the Moluccan island of Halmahera, with discussion of *P. eone* Felder & Felder, 1860, phenotypes on the island of New Guinea (Lepidoptera, Lycaenidae, Theclinae). — Butterflies (Teinopalpus), Japan, **51:** 31–37.

Vane-Wright, R. I., & de Jong, R. (2003): The butterflies of Sulawesi: annotated checklist for a critical island fauna. — Zoologische Verhandelingen, Leiden, **343:** 1–267.

——, & Peggie, D. (1994): The butterflies of northern and central Maluku: diversity, endemism, biogeography, and conservation priorities. — Tropical Biodiversity, Depok (Indonesia), **2** (1): 212–230.

Yagishita, A. (2006): A new species of genus *Deudorix* (Lepidoptera, Lycaenidae) from Morotai Island, Indonesia. — Futao, Japan, **52:** 18–19, pl. 1, figs. 9–12.

—— (2007): A new subspecies of *Graphium batjanensis* Okano, 1984 and a new species of the genus *Delias* Huebner from central Halmahera Is., Indonesia (Lepidoptera: Papilionidae and Pieridae). — Futao, Japan, **53:** 8–12.

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