

ON THE BUTTERFLY FAUNA OF ANDAMAN AND NICOBAR ISLANDS (INDIA). I. PAPILIONIDAE

By

G. S. ARORA AND D. N. NANDI

Zoological Survey of India, Calcutta

INTRODUCTION

The present study is based on the material mainly collected by the various parties of Zoological Survey of India during the period from 1964 to 1976, and the old material in the National Zoological Collections (abbreviated in the text as N. Z. C.). The various parties, which collected the material from the Andaman and Nicobar group of Islands during the months from September to May, were led by the following scientists of the department : Dr. B. S. Lamba (March to April, 1964) ; Drs. A. Daniel & H. K. Bhowmik (March to April, 1966) ; Dr. B. K. Tikader (February to March, 1970 and April to May, 1971) ; Dr. B. Dutta (January to February, 1972) ; Drs. K. Raddiah & P. T. Cherian (September to October, 1972) ; Sri K. S. Pradhan, Dr. G. S. Arora and Sri D. N. Nandi (December 1972 to January, 1973) ; Dr. G. K. Srivastava (February to March, 1975) ; and Dr. P. K. Maiti and S/Shri D. K. Mandal and D. N. Nandi (December 1975 to January, 1976).

The paper deals with 21 species and subspecies, distributed over five genera under three tribes viz, *Troidini* (*Troides*, *Parides* and *Pachliopta*) ; *Papilionini* (*Papilio*) ; and *Leptocircini* (*Graphium*).

It is interesting to observe that the species like *Pachliopta hector* and *Papilio memnon agenor*, common on Indian mainland, are rare in Andaman and Nicobar Islands and have never been collected by any of the recent parties. Besides, as many as four subspecies namely, *Troides helena ferrari* from S. Nicobar, *Papilio fuscus andamanicus*, *Graphium eurypylus macronius* and *G. agamemnon andamana*, from the Andamans, are also very rare and have not been collected recently but all except *ferrari* are represented in N. Z. C. *Parides coon sambilanga*, a very rare species from Great Nicobar Island, is represented by only a single example in N. Z. C., a mention of which has also been made by Ferrar (1951), who has given a fine account of topography of the areas and dealt with the lepidopterous fauna.

Papilio demoleus (L.), a very common species throughout India, Burma and Sri Lanka but hitherto unrecorded from the Andaman and Nicobar group of Islands, is being recorded for the first time from Port Blair, Andaman. Similarly, *Parides rhodifer* known only from Andamans has been recorded from Car Nicobar ; and *Pachliopta aristolochiae kondulana* and *Papilio polytes nikobarus* known from Car

Nicobar, are reported from Gt. Nicobar Island. All these new records are of zoogeographical interest. The distribution of all the different species found on these Islands, is given in details.

The nomenclature has been followed after Talbot (1939), Munroe (1961) and Hemming (1967).

SYSTEMATIC ACCOUNT

1. *Troides helena heliconoides* (Moore)

1877. *Ornithoptera heliconoides* Moore, *Proc. zool. Soc. Lond.* : 592.

Material examined.—S. Andaman : 4 ♂♂, 8 ♀♀, (in N. Z. C. : no further data) ; Burmah Nallah, 4 ♂♂, 18. iv. 1964. N. Andaman : Tugapur Rest House, Mayabunder, 1 ♀, 13.v.1971.

Wing expanse.—Males, 131-135 mm.; females, 154-160 mm.

Distribution and Status.—Andaman Islands. Not rare. Ferrar (1951) observes that roads leading to Ramgachang and Mairmyo and paths to Black rock on Mt. Harriet, are good places for collecting this butterfly.

Remarks.—The subspecies popularly known as the 'Common Birdwing' is one of the largest species, and is characterised by the hindwing being usually golden yellow; the postdiscal spots larger in female, small or absent in male except in area Cu_{1a} in males where the spot is conjoined with terminal marking.

2. *Troides helena ferrari* Tytler

1926. *Troides ferrari* Tytler, *J. Bombay nat. Hist. Soc.*, 31 : 248-249.

Material examined.—No material of the species was available for study.

Wing expanse.—140-170 mm. (*vide* Talbot, 1939).

Distribution and Status.—South Nicobar Islands. Rare.

Remarks.—Originally recorded from Kondul, the subspecies is reported (*vide* Ferrar, 1951) to be occurring in Gt. and Little Nicobar Islands.

3. *Parides coon sambilanga* (Doherty)

1886. *Papilio doubledayi sambilanga* Doherty, *J. asiat. Soc. Beng.*, (2) 55 (3) : 263.

Material examined.—Gt. Nicobar : 1 ♂ (in N. Z. C. : no further data).

Wing expanse.—Male, 111 mm.

Distribution and Status.—Great Nicobar Island. Very rare.

Remarks.—The subspecies hitherto known from Great Nicobar Island only, has neither been collected by survey parties during the present surveys, nor seems to have been observed by Ferrar (1951) in Southern Nicobars. It is very rare and represented by a single example of male from Great Nicobar in N. Z. C., and is characterised by the tail being black, unlike red in *rhodifer* to which it is closely allied.

4. *Parides rhodifer* (Butler)

1876. *Popilio rhodifer* Butler, *Ent. Mon. Mag.* 13 : 77.

Material examined.—Andamans : 7 ♂♂, 3 ♀♀ (in N. Z. C. : no further data). S. Andaman : Port Blair, Haddo Guest House, 1 ♀, 28. iii. 1964 ; Burmah Nallah, 5 ♂♂, 13, 17. iv. 1964 ; Mt. Harriet range, Mannarghat, 1 ♀, 2. iv. 1964 ; Wright Mayo, 2 ♂♂, 18. iv. 1971, 1 ♂, 1 ♀, 16, 26. xii. 1972 ; Humfraygunj, 2 ♂♂, 17. xii. 1972 ; Chiriatapu, 2 ♂♂, 20. xii. 1972 ; Panighat, 1 ♂, 3. i. 1973 ; South Point, 1 ♀, i. xii. 1975. Mid. Andaman : Panchwati, 2 ♂♂, 6. i. 1973. Car Nicobar : Malacca-Kakana Road, 1 ♂, 25. xii. 1972.

Wing expanse.—Males, 101-133mm.; females, 115-135 mm.

Distribution and Status.—Andaman Islands ; Car Nicobar (New record). Not rare.

Remarks.—Hitherto recorded from Great Andaman Islands, the species is being recorded for the first time from Car Nicobar as well, so that its distribution is extended further southwards.

The species is characterised by the presence of a white patch in the apical half of cell and large white postdiscal patches close to cell below veins $R_s - M_1$ and Cu_{1b} on hind wing ; spots below M_2 and M_3 and rarely below Cu_{1a} , absent on upperside, obsolescent or weakly developed on underside.

5. *Pachliopta hector* (Linnaeus)

1758. *Papilio hector* Linnaeus, *Syst. Nat.*, 10th ed : 459.

Material examined.—No material of this species was available for study.

Wing expanse.—Males and females, 90-110 mm. (*vide* Talbot, 1939).

Distribution and Status.—Peninsular India, the Andaman islands and Sri Lanka. Very rare in Andaman Islands.

Remarks.—Referable to the genus *Pachliopta*, the subspecies is very rare in Andamans only and has neither been collected by survey parties nor represented in N. Z. C. by any material from Andamans. The species is characterised by the presence of a postdiscal and a submarginal row of red spots, on hind wing; forewing with an interrupted white band from subcosta, running obliquely to tornus and another similar subapical band from subcosta to vein M_1 , or slightly below M_1 .

6. *Pachliopta aristolochiae goniopeltis* (Rothschild)

1908. *Papilio aristolochiae goniopeltis* Rothschild, *Novit. zool.*, 15 : 167.

Material examined.—S. Andaman : Rajatgarh, Baratang, 1 ♂, 22. iii. 1964; Burmah Nallah, 1 ♂, 14. iv. 1964, 1 ♂, 15. iv. 1964, 7 ♂♂, 17. iv. 1964; Aniket, 1 ♀, 16. i. 1973; Wright Mayo, Kalatang forest, Mt. Harriet, 1 ♀, 28. ii. 1975.

Wing expanse.—Males, 76-84 mm; females 75-94 mm.

Distribution and Status.—Burma; India (Andaman Islands); also found in South China and Thailand (Siam). Common.

Remarks.—It differs from nomino-typical subspecies in the basal area of forewing being black upto the origin of vein Cu_{1b} and the white postdiscal spot in hind wing being long and pointed in the area above vein Cu_{1a} .

7. *Pachliopta aristolochiae sawi* (Evans)

1932. *Tros aristolochiae sawi* Evans, *Identification of Indian Butterflies* : 44.

Material examined.—Car Nicobar : Malacca-Kakana Road, 1 ♂, 2 ♀♀, 25. xii. 1972.

Wing expanse.—Males, 95 mm; females, 88-93 mm.

Distribution and Status.—Car Nicobar Islands. Not rare.

Remarks.—Very common at Car Nicobar, particularly at Sawi, the subspecies is closely allied to *goniopeltis* except for the postdiscal series of spots which are not as large as in same-sized specimens of *goniopeltis*.

8. *Pachliopta aristolochiae camorta* (Moore)

1877. *Papilio camorta* Moore, *Proc. zool. Soc. Lond.* : 592.

Material examined.—Kamorta, 4 ♀ ♀, (in *N. Z. C.* : no further data)
Car Nicobar : Kamorta Islands. 1 ♂, 1 ♀, 19. iii. 1970 ; 1 ♂, 24. iii. 1970.

Wing expanse.—Males, 94-102 mm ; females, 93-106 mm.

Remarks.—The subspecies is very common in central group of Nicobar Islands, particularly at Kamorta and Nankowri, the subspecies differs in hindwing from both *goniopeltis* and *sawi* in respect of the presence of only two postdiscal spots, i. e., one below Cu_{1b} and another above it on upperside, those in areas above vein Cu_{1a} and M_3 are obsolescent on upperside and weakly developed on underside ; cell also with a spot at its apex on the underside.

9. *Pachliopta aristolochiae kondulana* (Evans)

1932. *Tros aristolochiae kondulana* Evans, *Identification of Indian Butterflies* : 45.

Material examined.—Gt. Nicobar : 1 ♂, 1 ♀, (in *N. Z. C.* : no further data) ; Campbell Bay, 1 ♂, 27. xii. 1975.

Wing expanse.—Male, 102 mm ; female, 93 mm.

Distribution and Status.—The subspecies is restricted to southern group of Nicobar Islands and is easily recognised from all the preceding subspecies by the shorter postdiscal spots which are not rounded at their apical ends ; the spot in area Cu_{1b} reddish in distal half on upperside, completely reddish on underside, interrupted by black scaling on upper margin. Ferrar (1951) was of the opinion that the species, originally taken at Kondul, probably occurred on the rest of the southern group. A single male from recent collections and a male and female from the old material in *N. Z. C.*, collected from Great Nicobar Islands, confirm his observations.

10. *Papilio clytia flavolimbatus* (Oberthür)

1879. *Papilio dissimilis* var *flavolimbatus*, Oberthür, *Et. d'Ent.*, 4 : 101.

Material examined.—S. Andaman : Cowrighat, 1 ♀, 8. iv. 1964. N. Andaman : Tugapur Rest House, 1 ♂ 12. v. 1971.

Wing expanse.—Male, 93 mm ; female, 105 mm.

Distribution and Status.—Andaman Islands Not rare.

Remarks.—This species is close to the f. *dissimilis* of *clytia clytia* except for its large size, narrow streaks in cell on both wings and large prominent yellow marginal spots on hind wings.

11. *Papilio memnon agenor* Linnaeus

1758. *Papilio agenor* Linn., *Syst. Nat.*, 10th ed : 460.

Material examined.—No material was available for study.

Wing expanse.—Male and female, 120-150 mm. (*vide* Talbot, 1939).

Distribution and Status.—India (Sikkim) to South Burma and the South Nicobar Islands. Talbot reports stragglers on the Andaman and Car Nicobar Islands. Very rare.

Remarks.—Commonly called the ‘The Great Mormon’, the species is well known for its polymorphic forms in both sexes ; in females particularly, as many as nine forms have been reported to occur in the species, with only f. *agenor* occurring in Andaman and Nicobar Islands. However, no material has been collected by the Z. S. I. parties recently, nor represented in N. Z. C., for these areas.

12. *Papilio mayo* Atkinson

1853. *Papilio mayo* Atkinson, *Proc. zool. soc. Lond.* : 736.

Material examined.—S. Andaman : Humfraygunj, Waterfall, 1 ♂, 7. iii. 1964. Mid. Andaman : Panchwati, 1 ♀, 6. i. 1973.

Wing expanse.—Male, 113 mm.; female, 130 mm.

Distribution and Status.—Gt. and Little Andaman Islands. ♂ common, ♀ rare.

Remarks.—The species is closely allied to the preceding species in the basal area in wings, on underside, being prominent red and in the hindwing in the females being tailed. The two species, However, differ from each other, in the male having a broad pale blue discal band and in the female with the abdomen being black. The species, represented by an example each of male and female, shows sexual dimorphism,

13. *Papilio fuscus andamanicus* Rothschild

1908. *Papilio fuscus andamanicus* Rothschild, *Novit. zool.*, 15 : 171.

Material examined.—No material has been collected recently. However, the N. Z. C. has 7 ♂♂ and 6 ♀♀, all from Andamans, and with 2 exs. showing the date as 'April'

Wing expanse.—Males, 94-106 mm ; females, 94-114 mm.

Distribution and Status.—Andaman Islands. Rare.

Remarks.—Referable to the *Helenus* group, including *polytes*, the species, however, is close to *P. chaon* particularly in the discal band on hind wing extending between veins R_s - M_3 , but differs from it in the submarginal lunules being bluish, unlike yellowish as in *chaon*. The present specimens are slightly smaller in expanse as compared to the minimum recorded expanse as 105 mm. (*vide*, Talbot, 1939).

14. *Papilio polytes stichioides* Evans

1912. *Papilio polytes stichioides* Evans, *J. Bombay nat. Hist. Soc.*, 21 : 972.

Material examined.—S. Andaman : 6 ♂♂, 1 ♀ (in N. Z. C. : no further data) ; Wrafters creak, Baratang, 1 ♂, 12. xii. 1964 ; Port Blair, Dockyard, 1 ♀, (f. *cyrus*), 25. ii. 1970 ; Chiriatapu, 1 ♂, 27. v. 1971, 1 ♂, 1 ♀, (f. *stichius*), 28. v. 1971, 1 ♀, (f. *stichius*), 19. i. 1972, 3 ♂♂, 1 ♀ (f. *cyrus*), 20. xii. 1972. ; Ferargunj, 1 ♂, 17. i. 1973 ; Bambooflat, 1 ♂, 19. xii. 1975. Mid. Andaman : Bakultala, 1 ♀ (f. *cyrus*), 7. i. 1973. N. Andaman : Mayabunder, 1 ♂, 4. v. 1971 ; Tugapur, 1 ♀ (f. *stichius*) i. 1973. Dundas point, 5 ♂♂, 1 ♀ (in N. Z. C. : no further data).

Wing expanse.—Males 85-97 mm ; females, 77-97 mm.

Distribution and Status.—Andaman Islands. Common.

Remarks.—The subspecies is quite common in S. Andaman Islands, and both the forms of female have been collected in recent surveys. Besides, 11 ♂♂ and 2 ♀♀ (f. *cyrus* only), all from S. Andamans, are also present in N. Z. C.

15. *Papilio polytes nikobarus* Felder

1862. *Popilio pammon* var. *nikobarus* C. Felder, *Verh. zool. bot. Ges. Wien.*, 12 : 483.

Material examined.—Car Nicobar : Sawi, 1 ♂, 16. ii. 1972, 1 ♂, 24. ii. 1972 ; Teetop, 2 ♂♂, 21. ii. 1972, 4 ♂♂, (1 ♂ on citrus), 1 ♀, (f. *stichius*), 24. ii. 1962, 2 ♂♂, 26. ii. 1972, 3 ♂♂, 27. ii. 1972 ; near C. P. W. D. office, 1 ♂, 23. ix. 1972 ; Malacca village, 2 ♂♂, 4. iii. 1970 ; Malacca-Kakna, 2 ♂♂, 25. xii. 1972, 1 ♂, 27. xii. 1972 ; Biglapati,

1 ♂, 28. xii. 1972 ; Keating point, 2 ♂♂, 7. iii. 1970. Central Nicobar ; Nankowri, 1 ♀, (f. *cyrus*) (no date collection) ; 1 ♀ (f. *cyrus*), 6. x. 1972 ; Kamorta, 1 ♀, (f. *cyrus*) (both without further data, in *N. Z. C.*) Kondul 4 ♂♂, 2 ♀♀, (no further data, in *N. Z. C.*). Gt. Nicobar : 4 ♂♂, 2 ♀♀ (no further data, in *N. Z. C.*) ; Galathea Bay, 1 ♀, (f. *stichius*), 22. iii. 1966, 2 ♀♀ (f. *cyrus*), 29. iii. 1966, 4. iv. 1967, Lakshman beach, Campbell Bay, 2 ♂♂, 3. iv. 1966, 1 ♂, 28. xii. 1975 ; Rajendra Nagar. 1 ♂, 30. xii. 1975.

Wing expanse.—Males, 81-95 mm. ; females, 90-102 mm.

Distribution and Status.—Car Nicobar, Central Nicobar and Southern group of Nicobar Islands, including Gt. Nicobar. The ♀ f. *stichius* is rare.

Remarks.—Reportedly distributed over Nicobar group of Islands, this constitutes first ever specific record of the subspecies right upto Gt. Nicobar, and is well represented by large number of males compared to number of female forms. Out of nearly 44exs. examined, only two are *stichius* against 5 of *cyrus*, the remaining are males.

16. *Papilio demoleus demoleus* Linnaeus

1758. *Papilio demoleus* Linnaeus, *Syst. Nat.* 10th ed : 464.

Material examined.—S. Andaman : Port Blair, 1 ex., 1. iii. 1964 (without abdomen).

Wing expanse.—Male and female, 80-100 mm. (Talbot, 1939.)

Distribution and Status.—Sri Lanka, the whole of India to Northern Burma. Also extending to Persia and Arabia. Very Common.

Remarks.—The subspecies is although distributed throughout India, Sri Lanka and Burma, the present record from the Andamans constitutes the first ever from these islands.

17. *Graphium antiphates epaminondas* (Oberthür)

1879. *Papilio epaminondas* Oberthür, *Et. d'Ent.*, 4 : 62.

Material examined.—Andamans : 6 ♂♂, 5 ♀♀, (in *N. Z. C.* : no further data). N. Andaman : Smith Island, Near Forest department Camp, 1 ♂, 27. iv. 1971.

Wing expanse.—Males, 81-86 mm. ; females, 85-93 mm.

Distribution and status.—Andaman Islands. Not rare.

Remarks—Restricted to Andamans only, the subspecies is characterised by the presence of broader bands on forewings.

18. *Graphium eurypylus macronius* (Jordan)

1909. *Papilio eurypylus macronius* Jordan, in Seitz, *Macrolepidoptera of the World*, 9 : 98.

Material examined.—Andamans : 4 ♂♂, 3 ♀♀, (in N. Z. C. : no further data).

Wing expanse.—Males, 81-95 mm ; females, 82-90 mm.

Distribution and Status.—Andaman Islands. Rare.

Remarks.—The subspecies is reported to be rare and restricted to Andaman Islands. No material has been collected during recent surveys. However, the old material in N. Z. C. has 4 ♂♂ and 3 ♀♀, from Andaman Islands without further data.

19. *Graphium agamemnon andamana* (Lathy)

1907. *Papilio agamemnon andamana* Lathy, *Trans. ent. Soc. Lond.* : 5.

Material examined.—Andamans 3 ♂♂, 10 ♀♀ (in N. Z. C. : no further data).

Wing expanse.—Males, 86-90 mm. ; females, 85-97 mm.

Distribution and Status.—Andaman Islands. Not rare.

Remarks.—No material has been collected during the recent surveys, but the material already present in the old collections in N. Z. C. from 'Andamans and S. Andamans' only is referable to this subspecies, but differs from the mainland subspecies *menides* in having lighter green-coloured markings on upperside. The series present before us for study, shows that the ground colour is equally darker as in mainland specimens, and the specimens with both shorter and larger tails are present.

20. *Graphium agamemnon decoratus* (Rothschild)

1895. *Papilio agamemnon decaratus* Rothschild, *Novit. zool.*, 2 : 452.

Material examined.—Car Nicobar : 1 ♂, (in N. Z. C. : no further data) ; Horticulture garden, 2 ♂♂, 8-9. iii. 1970 ; Kakana, 1 ♂, 27.

xii. 1972. 1 ♀, 28. xii, 1972 ; Biglapati, 1 ♂, 28. xii. 1972 ; Kamorta, 2 ♀ ♀, (no further data, in *N. Z. C.*).

Wing expanse.—Males, 81-89 mm ; females, 71-79 mm.

Distribution and Status.—Car Nicobar and central group of Nicobar Islands. Not rare.

Remarks.—The material present here and referable to this subspecies, is in general lighter in ground colour on upper and undersides of wings, but is characterised by the presence of five to seven red-coloured spots on underside of hindwings.

21. *Graphium agamemnon pulo* (Evans)

1932. *Zetides agamemnon pulo* Evans, *Identification of Indian Butterflies* : 56.

Material examined.—Gt. Nicobar, 1 ♀, (in *N. Z. C.* : no further data) ; Campbell Bay, 1 ♀, 6. iv. 1966 ; Rest House compound, Campbell Bay, 1 ♀, (*at light*) 29. xii. 1975.

Wing expanse.—Females, 43-71 mm.

Distribution and Status.—South Nicobar Islands (including Gt. Nicobar). Not rare.

Remarks.—Referable to this subspecies, it is close to *decoratus* from Car Nicobar Island, particularly in being lighter and in the presence of red spots on underside of hind wings, except in the tail being smaller. The subspecies extends right up to Great Nicobar Islands. The collection of this species at light is rare and of interest.

SUMMARY

The paper deals with 21 species and subspecies distributed over five genera and three tribes of the family Papilionidae. It brings to light one species as new to these areas ; one species as new to Nicobars ; and two as new to Great Nicobar Islands, besides detailed distributional records of the species.

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