

INSECTA : LEPIDOPTERA

PART I. PAPILIONIDAE

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INTRODUCTION

The Lepidoteran fauna of the region appears to be very rich. This report deals only with the family Papilionidae. The material comprises 21 species and subspecies distributed over 5 genera under three tribes, of which *Dabasa g. gyas* (Westwood) (rare) is a new record for Arunachal Pradesh, while *Graphium (G.) bathycles chiron* (Wallace), *G. (G.) doson axion* (C. & R. Felder), *G. (Pathysa) macareus indicus* (Rothschild), *Papilio e. epycides* Hewitson (rare), *P. paradoxa telearchus* Hewitson (rare), *P. r. rhetenor* Westwood, *P. paris decorosa* Fruhstorfer, *Parides (Atrophaneura) polla* (de Nicéville) (very rare), *P. (A) philoxenus polyeuctes* (Doubleday) and *P. (A) aidoneus* (Doubleday) (rare) are new records for the Tirap district. Other species and subspecies, incorporated in this paper, are either common or not rare in status except *Parides (Atrophaneura) dasarada barata* (Rothschild), which is considered as rare by Evans (1932).

Betts (1950) reported 25 papilionid species and subspecies from Arunachal Pradesh. Later, Varshney and Chanda (1971) and Arora and Mondal (1981) also studied the material from this area. In the present paper, the author records for the first time 11 more species and subspecies either from Tirap district or Arunachal Pradesh as a whole.

SYSTEMATIC ACCOUNT

Fam. PAPILIONIDAE Leach

Subfam. PAPILIONINAE Swainson

Tribe LEPTOCIRCINI

Genus **Lamproptera** Gray

1832. *Lamproptera* Gray, In Griffith's *Cuvier's Anim. Kingdom*, 15, pl. 102, fig. 4.

One form under this genus is presently dealt with hereunder.

1. **Lamproptera curius curius** (Fabricius)

1787. *Papilio curius* Fabricius, *Mant. Ins.*, 2 : 9.

1939. *Lamproptera curius curius*, Talbot, *Fauna Brit. India, Butterflies*, 1 : 244.

Material examined : Four ♂♂, Namdapha, 21.iv.1981, 6 ♂♂, Hornbill, 13, 14, 15.iv.1981 (S. Biswas and Party Coll.). Wing exp. 42-44 mm.

Distribution : INDIA : Assam, Arunachal Pradesh. (Siang and Tirap districts); Burma; Java and Philippines; Palawan. Reported also from Sundaland.

Remarks : The species is popularly known as 'The White Dragon Tail'. The subspecies known only from the North Eastern region of India where it is not rare.

Genus **Graphium** Scopoli

1777. *Graphium* Scopoli, *Introd. Hist. nat.*, p. 433.

Seven forms under this genus are, presently, dealt with.

Subgenus **Graphium** Scopoli

1961. *Graphium* (*Graphium*), Munroe, *Canad. Ent.*, Suppl., 17 : 19.

Three forms under this subgenus are dealt with hereunder.

2. **Graphium** (**Graphium**) **bathycles chiron** (Wallace)

1831. *Papilio bathycles* Zinken-Sommer, *Nov. Act. Ac. Nat. Cur.*, p. 157, pl. 14, figs 6-7.

1865. *Papilio chiron* Wallace, *Trans., Linn. Soc. Lond.*, 25 : 66.

1939. *Graphium bathycles chiron*, Talbot, *Fauna Brit. India, Butterflies*, 1 : 228.

1981. *Graphium* (*Graphium*) *bathycles chiron*, Arora and Mondal, *Rec. zool. Surv. India, Occ. Paper, No- 29*, pp. 11-12.

Material examined : Five ♂♂, 1 ♀, Namdapha, Hornbill, 11, 13, 14.iv.1981, 1 ♂, Deban North, 28.iv.1981 (S. Biswas and Party coll.). Wing exp. 72-84 mm.

Distribution : INDIA : Sikkim, Assam, Arunachal Pradesh (Kameng, Siang and Lohit districts); Burma and Vietnam, Tong-King, Annam.

Remarks : The species commonly known as 'The Veined Jay'. The subspecies is not rare from Sikkim to Burma and is reported for the first time from Tirap district of Arunachal Pradesh.

3. **Graphium** (**Graphium**) **doson axion** (C. & R. Felder)

1864. *Papilio doson* C. & R. Felder, *Verh. Zool. bot. Ges. Wien.*, 14 : 305.

1864. *Papilio axion* C. & R. Felder, *Verh. zool. bot. Ges. Wien.*, 14 : 305.

1939. *Graphium doson axion*, Talbot, *Fauna Brit. India, Butterflies*, 1 : 223-224.

1981. *Graphium* (*Graphium*) *doson axion*, Arora and Mondal, *Rec. zool. Surv. India, Occ. Paper, No. 29*, pp. 10-11.

Material examined : One ♂, Namdapha, Hornbill, 15.iv.1981 (S. Biswas and Party coll.), Wing exp. 80 mm.

Distribution : INDIA : Kumaon (U.P.), Assam, Arunachal Pradesh (Kameng and Siang districts); Burma; Thailand; Vietnam : Tong-King, Annam, Cochin-China and South China, Hainan.

Remarks : The species is popularly known as 'The Common Jay'. The subspecies is common in the Indian region and is a new record for Tirap district of Arunachal Pradesh.

4. *Graphium (Graphium) sarpedon luctatius* Fruhstorfer

1758. *Papilio sarpedon* Linnaeus, *Syst. Nat.*, ed. 10 : 461.

1907. *Graphium sarpedon luctatius* Fruhstorfer, *Ent. Zeit.*, 21 (30) : 183.

1981. *Graphium (Graphium) sarpedon luctatius*, Arora and Mondal, *Rec. zool. Surv. India*, Occ. Paper No. 29, pp. 8-9.

Material examined : Two ♂♂, Namdapha, Hornbill, 14, 16.iv.1981, 1♂, Deban, 8.iv.1981 (S. Biswas and Party coll.). Wing exp. 80-82 mm.

Distribution : INDIA : Kashmir to Arunachal Pradesh (Kameng, Siang and Tirap districts); Burma; Indonesia; Lombok; Vietnam; Tong-King, Sundaland; Borneo, Natuna Is.; Philippines and Malaya.

Remarks : The species is popularly known as 'The Common Blue Bottle'. The subspecies is common in the Indian subregion and has been recorded from almost all the districts of Arunachal Pradesh except Subansiri and Lohit.

Subgenus *Pathysa* Reakirt

1864. *Pathysa* Reakirt, *Proc. ent. Soc. Phil.*, 3 : 503.

1961. *Graphium (Pathysa)*, Munroe, *Canad. Ent.*, Suppl. 17 : 21.

Four forms under this subgenus are dealt with hereunder.

5. *Graphium (Pathysa) agetes agetes* (Westwood)

1843. *Papilio agetes* Westwood, *Arc. Entom.*, 2 : 23, pl. 55, figs. 1,2 (♂).

1909. *Papilio agetes agetes*, Jordan *Macrolep. World*, 9 : 87.

1939. *Graphium agetes agetes*, Talbot, *Fauna Brit. India*, Butterflies, 1 : 206.

1961. *Graphium (Pathysa) agetes*, Munroe, *Canad. Ent.*, Suppl. 17 : 42.

Material examined : Two ♂♂, Namdapha, 22.iv.1981, 6♂♂, 2♀♀ Hornbill, 13, 14, 16.iv.1981 (S. Biswas and Party coll.). Wing exp. 68-80 mm.

Distribution : INDIA : Sikkim, Assam, Arunachal Pradesh, (Tirap district) ; Burma ; Vietnam, Tong-King, Annam and S. China, Hainan.

Remarks : The species commonly known as 'The Fourbar Swordtail', is not rare from Sikkim to Burma. Varshney & Chanda (1971) reported only one example from Namchik, Tirap district and mentioned its status as rare.

6. *Graphium (Pathysa) antiphates pompilius* (Fabricius)

1775. *Papilio antiphates* Cramer, *Pap. Exot.*, 1 : 13, pl. 72, figs. A, B.

1787. *Papilio pompilius* Fabricius, *Mant. Ins.*, 2 : 8.

1939. *Graphium antiphates pompilius*, Talbot, *Fauna Brit. India*, Butterflies, 1 : 215.

1981. *Graphium (Pathysa) antiphates pompilius*, Arora and Mondal, *Rec. Zool. Surv. India*, Occ. Paper, No. 29. p. 15.

Material examined : Three ♂♂, Namdapha, Hornbill, 13, 14, 16.iv.1981 (S. Biswas and Party coll.). Wing exp. 78-84 mm.

Distribution : INDIA : Sikkim, Assam, Arunachal Pradesh (Lohit and Tirap districts) ; Burma ; Thailand ; Vietnam ; Annam and S. China, Hainan.

Remarks : 'The Fivebar Swordtail', as the species is popularly known, is common in Sikkim to Burma. The subspecies is recorded from two districts of Arunachal Pradesh including Tirap.

7. *Graphium (Pathysa) macareus indicus* (Rothschild)

1819. *Papilio macareus* Godart, *Encl. Math.*, 9 : 76.

1895. *Papilio macareus indicus* Rothschild, *Novit. zool.*, 2 : 457.

1939. *Graphium macareus indicus*, Talbot, *Fauna Brit. India*, Butterflies, 1 : 233, fig. 65.

1981. *Graphium (Pathysa) macareus indicus*, Arora and Mondal, *Occ. Paper*, No. 29, pp. 17-18.

Material examined : One ♂, Namdapha, Hornbill, 13.iv.1981. (S. Biswas and Party coll.). Wing exp. 90 mm.

Distribution : INDIA : Sikkim, Arunachal Pradesh (Subansiri and Lohit districts).

Remarks : 'The Lesser Zebra', as the species is commonly known, is a good mimic of *Danaus aglea* (Cramer). This subspecies is recorded for the first time from Tirap district of Arunachal Pradesh. Talbot (1939) mentioned the males of this subspecies as not rare in Sikkim.

8. **Graphium (Pathysa) xenocles** (Doubleday)

1842. *Papilio xenocles* Doubleday, In Gray, *Zool. Misc.*, p. 74.

1961. *Graphium (Pathysa) xenocles*, Munroe, *Canad. Ent.*, Suppl. 17, p. 42.

Material examined : Four ♂♂, 1 ♀, Namdapha, Hornbill, 14, 15, 16.iv.1981 (S. Biswas and Party coll.). Wing exp. 90-104 mm.

Distribution : INDIA : Assam, Arunachal Pradesh (Tirap district) ; Burma ; Thailand and S. China, Hainan.

Remarks : The species is popularly known as 'The Great Zebra' and is common in status in Assam and Arunachal Pradesh. The females mimic *Danaus melaneus* (Cramer) very much. The species has earlier been recorded only from Tirap district of Arunachal Pradesh.

Genus **Dabasa** Moore

1888. *Dabasa* Moore, *Descrip. New Ind. Lep. Ins. Coll. Atkinson*, (3), p. 283.

One form under this genus is dealt with hereunder.

9. **Dabasa gyas gyas** (Westwood)

1841. *Papilio gyas* Westwood, *Arc. Entom.*, 1 : 41, Pl. 11., fig. 1(♂).

1903. *Dabasa gyas*, Moore, *Lep. Indica*, 6 : 49, pl. 484., figs. 1, 1a, 1b (♂♀).

1939. *Graphium gyas gyas*, Talbot, *Fauna Brit. India, Butterflies*, 1 : 240-241.

1961. *Dabasa gyas*, Munroe, *Canad. Ent.*, Suppl. 17, p. 42.

Material examined : One ♂, Namdapha, 21.iv.1981. (S. Biswas and Party coll.).

Distribution : INDIA : Sikkim, Assam, Arunachal Pradesh (Tirap district) and Burma.

Remarks : The species is commonly known as 'The Brown Gorgon'. The subspecies is rare in status and recorded for the first time from Arunachal Pradesh (Tirap district).

Tribe PAPILIONINI

Genus **Papilio** Linnaeus

1758. *Papilio* Linnaeus, *Syst. Nat.*, ed. 10, 1 : 458.

Eight forms under this genus are dealt with hereunder.

10. **Papilio epycides epycides** Hewitson

1862-66. *Papilio epycides* Hewitson, *Exot. Butt.*, 3, pl. 6, fig. 16.

1895. *Papilio epycides epycides* Rothschild, *Novit. zool.*, 2 : 361.

Material examined : Two ♂♂, Namdapha, 21.iv.1981. 4 ♂♂, 3 ♀♀, Hornbill 11, 14, 16.iv.1981 (S. Biswas, and Party coll.). Wing exp. 78-82 mm.

Distribution : INDIA : Sikkim, Assam, Arunachal Pradesh (Kameng district) and North Burma.

Remarks : The species is commonly known as 'The Lesser Mime'. The subspecies is recorded for the first time from Tirap district of Arunachal Pradesh and is rare in the Indian subregion.

11. *Papilio paradoxa telearchus* (Hewitson)

1832. *Papilio paradoxa* Zinken-Sommer, *Nov. Act. Ac. Nat. Cur.*, 15 : 162, pl. 15, figs. 9,10.

1852. *Papilio telearchus* Hewitson, *Trans. ent. Soc. Lond.*, (N. S.) 2 : 22, 2 pls.

1907. *Papilio paradoxus telearchus*, Bingham, *Fauna Brit. India, Butterflies*, 2 : 78.

1981. *Papilio paradoxa telearchus*, Arora and Mondal, *Rec. zool. Surv. India, Occ. Paper*, No. 29, pp. 24-25.

Material examined : One ♂, Namdapha, Hornbill, 15.iv.81 (S. Biswas and Party coll.). Wing exp. 110 mm.

Distribution : INDIA : Assam, Arunachal Pradesh (Kameng district) ; Burma ; Thailand and Vietnam, Tong-King.

Remarks : The species is commonly known as 'The Great Mime'. This subspecies, rare in status, mimics *Euploea diocletiana* (Fab.), and is recorded for the first time from Tirap district of Arunachal Pradesh.

12. *Papilio castor castor* Westwood

1842. *Papilio castor* Westwood, *Ann. Mag. Nat. Hist.*, 9 : 37.

1895. *Papilio castor castor*, Rothschild, *Novit. Zool.*, 2 : 357.

Material examined : One ♂, Namdapha, 22.iv.81, 4 ♂♂, 1 ♀, Hornbill, 13, 14, 16.iv.81 and Deban 2 ♂♂, 1 ♀, 7, 8.iv.81 (S. Biswas and Party coll.). Wing exp. 98-105 mm.

Distribution : INDIA : Assam, Arunachal Pradesh (Tirap and Kameng districts) and North Burma.

Remarks : The species, popularly known as 'The Common Raven', mimics *Euploea core* (Cramer). The subspecies is recorded from Arunachal Pradesh and is not rare in this region.

13. *Papilio rhetenor rhetenor* Westwood

1841. *Papilio rhetenor* Westwood, *Arc. Ent.*, 59, pl. 16, fig. 1a.

1909. *Papilio rhetenor rhetenor*, Jordan, In Seitz's *Macrolep. World.*, 9 : 76, pl. 296.

Material examined : One ♂, Namdapha, Hornbill, 13.iv.81 (S. Biswas and Party coll.). Wing exp. 110 mm.

Distribution : INDIA : Kumaon to Arunachal Pradesh (Kameng and Siang districts) and Burma, upto Karen Hills.

Remarks : The species, commonly known as 'The Red Breast', mimics *Parides dasarada* (Moore) and *P. philoxenus* (Cramer). The subspecies, not rare in status, is a new record for Tirap district.

14. *Papilio helenus helenus* Linnaeus

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

1895. *Papilio helenus helenus*, Rothschild, *Novit. zool.*, 2 : 284.

Material examined : One ♂, Namdapha, Hornbill, 14.iv.81. (S. Biswas and Party coll.). Wing exp. 104 mm.

Distribution : INDIA : Uttar Pradesh, Mussoorie, Assam, Arunachal Pradesh, (Kameng, Subansiri, Siang and Tirap districts) ; Burma ; Thailand and Malay Peninsula.

Remarks : The species is popularly known as 'The Red Helen'. The subspecies is recorded from almost all the districts of Arunachal Pradesh including Tirap and is common in status.

15. *Papilio chaon chaon* Westwood

1845. *Papilio chaon* Westwood, *Arc. Ent.*, 2 : 97, pl. 72, fig. 1.

1909. *Papilio chaon chaon*, Jordan, In Seitz's *Macrolep. World*, 9 : 53 ; pl. 22, b.c.

Material examined : One ♂, Namdapha, Hornbill, 11.iv.81 (S. Biswas and Party coll.). Wing exp. 102 mm.

Distribution : INDIA : Orissa, Assam, Arunachal Pradesh (Kameng, Siang and Tirap districts) ; Nepal and North Burma.

Remarks : The species is popularly known as 'The Yellow Helen'. The subspecies has earlier been recorded from Kameng, Siang and Tirap districts of Arunachal Pradesh and is common in status.

16. *Papilio protenor euprotenor* Fruhstorfer

1775. *Papilio protenor* Cramer, *Pap. Exot.*, 1 : 77, pl. 49, figs. A, B.

1908. *Papilio protenor euprotenor* Fruhstorfer, *Ent. Zeit. Stutt.*, 22(11) : 46.

Material examined : Two ♂♂, Namdapha, Hornbill, 15.iv.81, 1 ♂, Gibbon Land, 6.iv.81, 3 ♂♂, Deban, 7, 8.iv.81 (S. Biswas and Party coll.). Wing exp. 100-115 mm.

Distribution : INDIA : Sikkim, Assam, Arunachal Pradesh ; North Burma ; and Vietnam, Tong-King.

Remarks : The species is commonly known as 'The Spangle'. The subspecies is recorded from all the districts of Arunachal Pradesh and is not rare in status.

17. *Papilio paris decorosa* Fruhstorfer

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

1909. *Papilio paris decorosa* Fruhstorfer, *Ent. Zeit.*, 23(25) : 116.

Material examined : One ♂, Namdapha, Hornbill, 11.iv.81, 1 ♂ Gibbon Land, 6.iv.81, 1 ♂, Deban, 7.iv.81 (S. Biswas and Party coll.).

Distribution : INDIA : Uttar Pradesh, Kumaon, Sikkim, Assam, Arunachal Pradesh, Orissa and Burma, Tenasserim.

Remarks : The species is popularly known as 'The Paris Peacock'. The subspecies is a new record for Tirap district of Arunachal Pradesh and is common in the Indian region but rare in the Tenasserim of S. Burma.

Tribe TROIDINI

Genus *Parides* Hubner

1819. *Parides* Hubner, *Verz. bek. Schmett.*, p. 87.

Subgenus *Atrophaneura* Reakirt

1864. *Atrophaneura* Reakirt, *Proc. ent. Soc. Phil.*, 3 : 446.

1961. *Atrophaneura (Atrophaneura)*, Munroe, *Canad. Ent.*, Suppl., 17 : p. 34.

Four forms under this subgenus are dealt with hereunder.

18. *Parides (Atrophaneura) polla* (De Niceville)

1897. *Byasa polla* De Niceville, *J. Asiat. Soc. Bengal*, 66(2) : 565, pl. 4, Fig. 28.

1961. *Parides (Atrophaneura) polla*, Munroe, *Canad. Ent.*, Suppl., 17, p. 46.

Material examined : Three ♂♂, Namdapha, Hornbill, 15.iv.1981 (S. Biswas and Party coll.). Wing exp. 130-138.

Distribution : INDIA : Assam, Arunachal Pradesh, Manipur, Nagaland and Burma, Northern Shan States, N. Chin Hills, and Bernardmyo.

Remarks : The species, commonly known as 'The De Niceville's Windmill', is very rare in status and is recorded for the first time from Tirap district of Arunachal Pradesh.

19. Parides (Atrophaneura) philoxenus polyeuctes (Doubleday)

1831. *Papilio philoxenus* Gray, *Zool. Misc.*, 1 : 32.
 1842. *Papilio polyeuctes* Doubleday, *Zool. Misc.*, p. 74.
 1909. *Papilio Philoxenus polyeuctes*, Jordan, in Seitz's *Macrolep. World*, 9 : 32.
 1981. *Parides (Atrophaneura) philoxenus polyeuctes*, Arora and Mondal, *Rec. zool. Surv. India*, Occ. Paper, No. 29, pp. 48-49.

Material examined : Two ♂♂, Namdapha, Deban, 7.iv.1981, 1 ♂, Zero Camp, 9.iv.1981 (S. Biswas and Party coll.). Wing exp. 110-130 mm.

Distribution : INDIA : Sikkim, Assam, Arunachal Pradesh ; Burma ; Thailand ; Vietnam, Annam, Tong-King and S. China, Yunnan.

Remarks : The species is popularly known as 'The Common Wind-Mill'. The subspecies is common in status and is recorded for the first time from Tirap district of Arunachal Pradesh.

20. Parides (Atrophaneura) dasarada barata (Rothschild)

1857. *Papilio dasarada* Moore, *Cat. Lep. Mus. E. I. C.*, 1 : 96.
 1895. *Papilio philoxenus* ab. *barata* Rothschild, *Novit. zool.*, 2 : 266. (part).
 1908. *Papilio dasarada barata* Rothschild, *Novit. zool.*, 15 : 168.
 1981. *Parides (Atrophaneura) dasarada barata*, Arora and Mondal *Rec. zool. Surv. India*, Occ. Paper. No. 29, P. 50.

Material examined : One ♀, Namdapha, 21.iv.1981, 2 ♂♂, Hornbill, 13.iv.1981 (S. Biswas and Party coll.). Wing exp. 120-135 mm.

Distribution : INDIA : Arunachal Pradesh (Siang and Tirap districts) ; Burma, Shan states, Tenasserim and Vietnam, Tong-King.

Remarks : The species is commonly known as 'The Great Wind Mill'. The subspecies has been recorded recently by Arora *et al* (1981) from Arunachal Pradesh as well as from India for the first time. Evans (1932) recorded the subspecies from Burma and considered it as rare.

21. Parides (Atrophaneura) aidoneus (Doubleday)

1845. *Papilio aidoneus* Doubleday, *Ann. Mag. Nat. Hist.*, 16 : 178.
 1961. *Parides (Atrophaneura) aidoneus*, Munroe. *Canad. Ent.*, Suppl. 17 : 46.

Material examined : One ♀, Namdapha, Zero Camp, 9.iv.1981, 1 ♀, Miao, 4.iv.1981 (S. Biswas and Party coll.). Wing exp. 125-130 mm.

Distribution : INDIA : Garhwal (U. P.), Sikkim, Assam, Arunachal Pradesh (Lohit district) ; Burma ; Shan States ; Vietnam ; Tong-King ; Hainan and South China.

Remarks : The species commonly known as 'The Lesser Batwing', is rare in India, except Sikkim where it is considered as not rare. The species is recorded for the first time from Tirap district, Arunachal Pradesh.

SUMMARY

The paper incorporates a systematic account of 21 species and subspecies of Papilionidae of which all are new records for Namdhapa including 10 from the Tirap district and one from the entire Arunachal Pradesh.

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