

Lophophorus refulgens.—The Monal Pheasant is fairly common in the higher and wooded slopes of all the Dir and Swat valleys. It appears to suffer from snow blindness, and is easily caught at such times. Several live specimens have been brought to me from Dir, and one from near Thana in Lower Swat.

Circus cyaneus.—Hen Harrier. One specimen obtained from the edge of the Peshawar plain, November, 1900.

Duck and teal of many kinds pass through Swat and Dir on their way to and from India in the autumn and spring. Quail and snipe also pass through. I have never heard of Sand Grouse having been seen.

The Chickor and Scarse are permanent residents and very common. So also are the Grey and Black Partridges. The Black Partridge only frequent the lower ends of the valleys. The Grey extend further up the valleys.

Pisces.—The Panjkora and Swat rivers are full of fish, chiefly of the kind commonly known as Snow Trout, which would appear to be a species of *Cyprininæ*.

Mahaseer (*Barbus tor*) ascend both rivers in considerable numbers in the spring, but very few remain during the winter, as they nearly all descend again to the Cabul river in the late autumn. Mahaseer up to 30 lbs. have been obtained in the lower reaches of the Panjkora and Swat rivers.

III.—*Note on the Butterflies comprised in the subgenus Tronga of the genus Euplœa*.—By LIONEL DE NICÉVILLE, F.E.S., C.M.Z.S., &c.

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In the Proceedings of the Asiatic Society of Bengal, 1892, pp. 158-161, will be found a note by me on the Indian and Malayan Peninsula Butterflies of the subgenus *Stictoplœa* of the genus *Euplœa*. In the Trans. Ent. Soc. Lond., 1892, pp. 247-248, is practically a *resumé* of this paper. In the Journal of the Asiatic Society of Bengal, vol. lxi, pt. 2, pp. 237-245 (1892), I gave a note on the subgenus *Pademna* of the genus *Euplœa*. In the present paper I propose to deal with the subgenus *Tronga* of the genus *Euplœa*. I am driven to do so by the circumstance that Mr. Robert Shelford, Curator of the Sarawak Museum, Borneo, has from time to time sent me large numbers of *Trongas*, imploring me to name them for him, as he is unable to do so from Dr. F. Moore's paper on the *Euplœina* in the Proceedings of the Zoological Society of London for 1883, pp. 253-324, in which six

species of the subgenus from Borneo are given as distinct, and from the other literature at his disposal. I was no more successful than Mr. Shelford, and as in Calcutta I am shut off from access to the type specimens of all the described species, I despatched twenty-two male *Trongas* from Sarawak to Dr. Moore, who has been so kind as to set them all, and to return them to me. Under the date 7th October, 1900, he writes to me:—"I have compared your twenty-two male *Trongas* with the types available, and have put the name to a specimen agreeing exactly with the types of *T. crameri*, Lucas, *T. brookei*, Moore, and *T. labuana*, Moore. I have also enclosed a pencil sketch of the types of *T. moorei*, Butler, and *T. pryeri*, Moore, to which none of yours agree. The types of all these are now in the British Museum. The other unlabelled specimens of *Tronga* returned you will easily be able to match with the verified specimens. I have not been able to examine them with *T. daatensis*, Moore, as I have no opportunity now of comparing them with the type. I hope these will enable you to satisfy yourself as to their specific value or otherwise." I would have been still more grateful to Dr. Moore for his kindness than I am had he been so good as to have given me his opinion as to the names by which the nineteen specimens he returned unnamed should be known. In this and similar cases it is not difficult to pick out and name extreme individual forms of a variable species, but it is the intermediate specimens that puzzle one. However, with three named species, drawings of two others, and the description of the sixth it is not difficult to deal with the species of *Tronga* found on the northern side of Borneo. I may note that the Island of Daat, from whence *T. daatensis* was described, is quite close to the much larger island of Labuan on the North-West coast of Borneo; both these islands lie very near to the coast, and are therefore not likely to possess any species peculiar to them, especially *Euplœas*, which are well known to have very tough constitutions and to take long and voluntary journeys. On this subject Mr. W. P. Pryer in Ann. and Mag. of Nat. Hist., fifth series, vol. xix, p. 48, n. 16 (1887) has some very interesting notes on the migrations of *Euplœas* in North Borneo.

Dr. Moore in Proc. Zool. Soc. Lond., 1883, gives twelve species of *Tronga*, from the Nicobar Isles, Lower Burma, the Malay Peninsula, Sumatra, Nias, Borneo, and China. The latter habitat is most vague, as China is a vast country. In "Lepidoptera Indica," vol. i, pp. 76-80 (1890), Dr. Moore retains twelve species in the genus, out of which he describes as new *T. nicevillei* from the Sunderbunds near Calcutta, and *T. heylærtsii* from Sumatra, but he sinks his *T. olivacea*, Moore, as a synonym of *T. bremeri*, Felder, and omits all reference to *T. kinbergi*,

Wallengren, from China, the total number therefore remaining the same as in 1883.

In 1896, Mr. H. Fruhstorfer recorded *E. (Tronga) kinbergi*, Wallengren, from the Tengger mountains, 2,000 feet, East Java. In 1898, Mr. Fruhstorfer described *Tronga crameri tenggerensis*, new subspecies, from the same place.

In 1896, Dr. B. Hagen described and figured an *Euplœa pagenstecheri* from Bawean Island, which lies midway between Borneo and Java. The describer says it comes into Moore's genus *Menama*, which has in the male an androconal patch of shining black scales on the upperside of the hindwing behind the subcostal nervure towards the base of the wing (not mentioned by Dr. Moore), this character being absent from the genus *Tronga*. Dr. Hagen says it is allied to *E. lorzæ*, Boisduval (a MS. name only, the species should be credited to Dr. Moore, who first described it). Mr. Fruhstorfer, however, makes it a local race of *Tronga crameri*, Lucas. From the figure I should say that it is a *Menama* rather than a *Tronga*, but it is impossible to be certain without seeing a male specimen.

In 1898, Dr. Hagen described *Euplœa (Tronga) mentawica* and *E. (T.) morrissi*, from the Mentawej Islands, which lie to the south of the centre of the island of Sumatra.

In 1898, Mr. F. Fruhstorfer gave a list of the butterflies of the genus *Tronga*, and described *Tronga crameri tenggerensis* from the Tengger mountains, East Java, 2,000 feet, and *Tronga crameri*, ab. *biseriata*, from East Java. It is not known to me if Mr. Fruhstorfer considered in 1898 that his *E. tenggerensis* is the same species as the *E. kinbergi*, Wallengren, he recorded in 1896 from the same spot. As noted above, the latter was originally described from China. But he remarks that the specimen in question appears to him to be a form of the very variable female of *Euplœa (Isamia) rafflesi*, Moore, described from Java. He goes on to say that "In the British Museum *E. kinbergi* is apparently by mistake labelled as coming from China," although it was originally described from thence. In the same paper Mr. Fruhstorfer notes that *Euplœa (Tronga) brookei*, Moore, from Borneo is identical with *Euplœa (Menama) lorzæ*, Moore, also from Borneo. This is wholly wrong, the two species are absolutely distinct, and Dr. Moore has correctly placed them in his genera *Tronga* and *Menama* respectively, although he has omitted to describe the satiny shining black patch of androconia on the upperside of the hindwing of the male by which *Menama* can in that sex be at once distinguished from males of *Tronga*, which lack this patch. Mr. Fruhstorfer further notes that it is impossible to establish the genus *Menama* [as distinct from *Tronga*],

inasmuch as in Borneo as well as in Sumatra there are "double" forms of *Tronga* and *Menama*. He says that he possesses, for example, specimens of *Tronga niasica*, Moore, from Nias Island with rounded forewings and others with angled forewings. That is quite probable, most likely in addition to *Tronga niasica* there is an undescribed species of *Menama* from that island, which I have not seen, though I have many males of *T. niasica*. Mr. Fruhstorfer also notes that the *E. (Tronga) crameri* of Lucas which I recorded from Bali seems to belong to *E. crameri tenggerensis*, Fruhstorfer. This is not absolutely the case, as my single specimen from that island does not agree entirely with Mr. Fruhstorfer's new subspecies, as it has fewer and smaller spots on the forewing, so is not typical, and is certainly in my opinion not a species distinct from *E. crameri*. In the genus *Euploea* I do not consider as a rule an extra spot or two, or even a whole series of spots, of any specific value whatever; the maculation in *Euploea*s is in nearly every species a most variable character. Lastly Mr. Fruhstorfer notes that it is curious that no species of *Tronga* has been found in the island of Palawan in the Philippines, but that in the other parts of the Malayan region there are two distinctly marked species of *Tronga* which may be classified according to the following scheme:—

A. Hindwing with a prominent row of submarginal dots:—under which he places (1) *T. crameri*, Lucas, (2) *T. crameri brookei*, Moore, (3) *T. crameri marsdeni*, Moore, (4) *T. crameri bremeri*, Felder, (5) *T. crameri moorei*, Butler [incorrect, as this is a *Menama*, not a *Tronga*], (6) *T. crameri pagenstechei*, Hagen, (7) *T. crameri tenggerensis*, Fruhstorfer, and ab. *biseriata*, Fruhstorfer, (8) *T. crameri biseriata*, Moore, and (9) *T. crameri morrissi*, Hagen. He notes that *T. daatensis*, Moore, *T. tabuana*, Moore, *T. johanna*, Kirby, and *T. olivacea*, Moore, all fall to *T. crameri*, Lucas. As regards *T. olivacea* this is incorrect from even Mr. Fruhstorfer's views of the genus *Tronga*, as that species is, according to Dr. Moore himself, based on a small female variety of *T. bremeri*, Felder.

B. Hindwing with a double series of very large clear white spots:—under which he places (1) *T. pryeri*, Moore, (2) *T. pryeri heylærtsii*, Moore, (3) *T. pryeri niasica*, Moore, (4) *T. pryeri mentawica*, Hagen, and (5) *T. pryeri nicevillei*, Moore. Of *T. crameri brookei*, Moore, he notes that it is perhaps a dry-season form of *T. crameri*, Lucas; while of *T. pryeri heylærtsii*, Moore, he notes that it is apparently a rainy-season form. These surmises are I think quite incorrect, as in Borneo, Sumatra, and the Malay Peninsula, where these species are said to occur, very few butterflies indeed exhibit seasonal changes, there being no well-marked wet- and dry-seasons, rain falling almost throughout the year, and

certainly no such seasonal forms are found in the genus *Euplœa* occurring in those regions.

I have long held the opinion, gained by an extensive knowledge of the genus *Euplœa* in life, that in nearly all cases it is highly improbable that any one spot will contain two really distinct species of one group of the genus. Dr. Moore in his most valuable monograph of the genus *Euplœa* written in 1883 evidently had no such suspicion, never having seen a live *Euplœa*, nor an opportunity of examining hundreds of specimens from a single locality as I have frequently done, as, for instance, he gave six (one with a query) species of *Tronga* from Borneo; six of *Pademna* from Assam, and probably several others, as he records four other species from E. and N.-E. Bengal, and another with a query, which probably mean Assam; four of *Isamia* from South China and three from Cochin China; and four of *Stictoplœa* from Assam. While working up the Bornean *Trongas*, I thought it would be well to verify as far as I could this general opinion of mine that it is exceptional for two distinct species of one group to really occur in any one given locality, and taking up only India and those regions lying adjacent thereto and Southern China, regions that I am more or less well acquainted with from visiting many of them for the purpose of collecting butterflies, I find on the whole that my conjectures are likely to prove correct, though in two or three groups, subgenera or genera (it is immaterial for our purpose how we term them, though I prefer subgenera in our present ignorance of the transformations of most of the species), this is certainly not the case, as in *Penoa* we have a brilliantly blue-glossed species (*deione*, Westwood) and a non-blue-glossed species (*doubledayi*, Felder) occurring together in Sikkim, Assam and Burma; while two quite distinct non-glossed species, differing entirely in size and male sexual brands, *gardiñeri*, Fruhstorfer, and *menetriesii*, Felder (= *pinwilli*, Butler and *evalida*, Swinhoe) occur together in the Malayan Peninsula and Sumatra; again in *Pademna* we have in the region of Calcutta and southwards to Travancore a species (*kollari*, Felder) which is but slightly if at all blue-glossed in those regions, gradually merging in other parts of Bengal (the Maldah district for instance), Sikkim, Bhutan and Assam into a strongly blue-glossed species (*klugii*, Moore). It is difficult to know how to deal in systematic work with such forms, as the one is quite distinct and constant in one region, while in another region this erst-while "good species" becomes gradually merged into another species which in its extremest form is absolutely different. In Hongkong also two apparently quite distinct species of *Crastia* occur, viz., *godartii*, Lucas, and *kinbergi*, Wallengren. However, these exceptional groups do not greatly invalidate my previous conceptions of these various subgenera

of *Euplœa*, as speaking generally I think it may be treated as an axiom that no two really distinct species of one subgenus will be found to inhabit one limited area. If would-be describers of *Euplœas* and several other genera would bear this in mind in future, we would be saved many of the synonyms of the past which burden our butterfly literature and give endless trouble in trying to unravel them. I may note here that I wholly dissent from the opinions held by Colonel C. Swinhoe as expressed in Trans. Ent. Soc. Lond., 1893, p. 270, that varietal forms of well-known species should be named. It may be arguable that "varieties" may perhaps be described and named for the sake of convenience, though I consider it to be very inexpedient to do so, especially in certain groups of *Euplœas* in which it is almost impossible to find two specimens marked exactly alike, and to be logical every specimen should have a name and thus reduce scientific nomenclature to an absurdity; but what I especially deprecate is calling these obvious varieties "new species," which they certainly are not. However, the late Capt. E. Y. Watson in Journ. Bomb. Nat. Hist. Soc., vol. x, pp. 639-640 (1897) has already very clearly pointed out the untenable position taken up by Col. Swinhoe in this matter, so I will not further attempt to "kill the slain."

To prove my thesis I will give some lists of subgenera of *Euplœa* which I think will help to substantiate my case. These lists are not exhaustive and may perhaps contain some slight inaccuracies, but they are I believe in the main correct, and may prove perhaps to be some help to others in working at this great group. The names placed in brackets are in my opinion synonyms. The order of subgenera is that followed in Dr. Moore's monograph of the *Euplœina* published in 1883. It would have been better to have given two lists, one of localities the other of species, but this would have taken up too much time and space, so I have adopted the second course; the first can with a little trouble be evolved from it.

MENAMA, Moore.

Lower Burma, *modesta*, Butler (*cupreipennis*, Moore, *tavoyana*, Malay Peninsula, *modesta*, Butler. [Moore]).

Siam, *camaralzeman*, Butler.

„ *modesta*, Butler.

Nicobar Isles, *simulatrix*, Wood-Mason and de Nicéville.

Sumatra, *moorei*, Butler.

„ *buxtoni*, Moore.

Borneo, *lorzæ*, Moore.

Menama does not apparently support my theory, as from the list above two species are given from Siam; but Siam is a large country and may have two distinct species of *Menama* occurring in different parts of it, though as *camaralzeman* and *modesta* apparently differ not at all except in size—this difference being very considerable—it may be that they are one and the same species. Again two species, *moorei* and *buxtoni*, are recorded from Sumatra, the former is non-blue-glossed, the latter is blue-glossed. I have had very numerous specimens of *moorei* from thence, it is very common there, but I have never seen *buxtoni*, so there may be some mistake about the habitat of that species. Dr. Moore places *moorei* in *Tronga*, but it is a true *Menama*.

TRONGA, Moore.

Lower Burma, *crameri*, Lucas (*bremeri*, Felder, *johanna*, Kirby, *marsdeni*, Moore, *olivacea*, Moore, *brookei*, Moore, *labuana*, Moore, *daatensis*, Moore, *pryeri*, Moore, *heylærtsii*, Moore).

Malay Peninsula, *crameri*, Lucas.

Nicobar Isles, *frauenfeldii*, Felder (*esperii*, Felder, *biseriata*, Moore).

Sumatra, *crameri*, Lucas.

Banka, *crameri*, Lucas.

Bali, *crameri*, Lucas.

Borneo, *crameri*, Lucas.

Natuna Isles, *crameri*, Lucas.

Java, *tenggerensis*, Fruhstorfer, and ab. *biseriata*, Fruhstorfer.

Nias Island, *niasica*, Moore.

Bawean Island, *pagenstecheri*, Hagen.

Mentawej Isles, *morrisi*, Hagen.

„ „ *mentawica*, Hagen.

The subgenus *Tronga* is more fully considered on pages 30-38. I need only note here that I have not seen the two species recorded from the Mentawej Isles described as distinct by Dr. Hagen. It is highly probable I think that they are synonymous, and moreover are not separable from some previously-described species.

ADIGAMA, Moore.

Malay Peninsula, *malayica*, Butler (*stolli*, Weymer).

Sumatra, *malayica*, Butler.

Nias Island, *malayica*, Butler.

Java, *ochsenheimeri*, Moore.

Borneo, *scudderii*, Butler.

Palawan (Philippines), *claudina*, Staudinger.

I have nothing to remark about this subgenus; each of the four known species inhabits a distinct area, and no two of them have been recorded from the same area.

PENOA, Moore.

Eastern Himalayas, *doubledayi*, Felder.

„ „ „ *deione*, Westwood (*poeyi*, Felder, *magnifica*,
Assam, *doubledayi*, Felder. [Butler).

„ „ *deione*, Westwood.

Upper Burma, *doubledayi*, Felder.

„ „ „ *deione*, Westwood.

Lower Burma, *doubledayi*, Felder.

„ „ „ *gardineri*, Fruhstorfer.

„ „ „ *limborgii*, Moore.

Malay Peninsula, *gardineri*, Fruhstorfer.

„ „ „ *menetriesii*, Felder (*pinwilli*, Butler, *evalida*,
Indo-China, *limborgii*, Moore. [Swinhoe).

„ „ „ *gardineri*, Fruhstorfer.

Sumatra, *menetriesii*, Felder.

„ „ „ *gardineri*, Fruhstorfer.

Nias Island, *menetriesii*, Felder.

„ „ „ *kheili*, Weymer.

„ „ „ ? *uniformis*, Moore.

Banka, *menetriesii*, Felder.

Java, *alcathoë*, Godart (*melancholica*, Butler).

„ „ „ *wallengrenii*, Felder.

„ „ ? *geyeri*, Felder.

„ „ ? *eyndhovii*, Felder.

Billiton, *transpectus*, Moore.*

Lombok, ? *geyeri*, Felder.

„ „ „ *sapitana*, Fruhstorfer.

Borneo, *uniformis*, Moore.

„ „ „ *zonata*, Druce.

„ „ „ *masina*, Fruhstorfer.

Mentawej Isles, *seitzi*, Hagen.

Palawan (Philippines), *cyllene*, Staudinger.

„ „ „ „ *distincta*, Staudinger.

I have made some remarks on the subgenus *Penoa* on page 16. It is

* Mynheer P. C. T. Snellen in Tijds. voor Ent., vol. xxxiii, p. 284, n. 4 (1890), records *E. alcathoë* from Billiton. It is unknown to me whether or no he considers *P. transpectus* to be a synonym of that species.

an exception to my theory that two allied species of the same subgenus do not as a rule occur in the same region. The synonymy of the subgenus has been greatly changed since Dr. Moore's Monograph of the *Euplaëina* was published in 1883, and since his "*Lepidoptera Indica*" appeared. In the first-named paper his No. 1, *alcathoë*, Godart, is the *doubledayi* of Felder; his No. 3, *menetriesii*, Felder, is the *gardineri* of Fruhstorfer; and his No. 4, *pinwillii*, Butler, is the *menetriesii* of Felder. I think the number of recorded species in this genus will be greatly reduced in the future, and many of the names given above as representing distinct species will be reduced to the rank of synonyms. I possess only *doubledayi*, *deione*, *gardineri*, *limborgii*, *menetriesii*, *alcathoë*, ? *geyeri*, *uniformis*, and *zonata*.

CRASTIA, Hübner.

- | | | |
|-------------------|---|--|
| Western Himalayas | } | core, Cramer (<i>cora</i> , Hübner, <i>vermiculata</i> ,
Butler, <i>nicevillei</i> , Moore). |
| Eastern „ | | |
| Continental India | | |
| Peninsular „ | | |
- Ceylon, *asela*, Moore.
 Burma (Upper only) *core*, Cramer.
 Burma, *godartii*, Lucas (*siamensis*, Felder, *layardi*, Druce, *subdita*,
 Malay Peninsula, *graminifera*, Moore. [Moore, *binghami*, Moore].
 „ „ ? *godartii*, Lucas.
 „ „ *distantii*, Moore.
 Indo-China, *godartii*, Lucas.
 „ „ *mouhotii*, Moore.
 „ „ ? *amymone*, Godart.
 China, *kinbergi*, Wallengren.
 „ *lorquinii*, Felder (*felderi*, Butler).
 „ ? *amymone*, Godart.
 „ *godartii*, Lucas.
 „ *prunosa*, Moore.
 Nicobar Isles, *scherzeri*, Felder (*camorta*, Moore).
 Sumatra, ? *amymone*, Godart.
 „ *inconspicua*, Moore.
 „ *distantii*, Moore.
 „ *felderi*, Butler.
 Engano Isle, *enganensis*, Doherty.
 „ „ *oceanis*, Doherty.
 Java, *haworthii*, Lucas (*eleusina*, Hübner, part, pl. ccxxii (ix),
 figs. 1, 2, *nec* Cramer, *hübneri*, Moore,
moorei, Felder, *janus*, Butler).

Java, *godartii*, Lucas.

Philippines, *snelleni*, Moore.

„ *godartii*, Lucas.

From the list above it would appear that *Crastia* does not bear out my theory at all. Under *core* I have placed *cora*, Hübner, and *vermiculata*, Butler, as these names represent the dry-season form of the species. I have also added *nicevillei*, Moore, which comes from the Sunderbans, near Calcutta. Many years ago four specimens of the "species" were given to me, taken in February, and I set them down to be rather unusually white examples of the dry-season form of *core* (*cora*+*vermiculata*). Two of these I gave to Colonel Swinhoe, and Dr. Moore described them as *Tronga nicevillei* in Lep. Ind., vol. i, p. 77, pl. xx. The male has no sexual brand in the submedian interspace of the forewing, this brand, however, is often obsolete in *C. core*, and is not a character of much importance. The wings also are broader than in typical *C. core*. In spite of these obvious differences, I am still of opinion that *Tronga nicevillei* is nothing more than the dry-season form of *Crastia core* found in the swamps of the Sunderbans. I cannot believe that an absolutely distinct species of *Euploea* is alone to be found in a very limited area of recently formed alluvial land attached to the mainland of Bengal. Except for this "species" India proper and Ceylon is each inhabited by only a single species of *Crastia*.

We now come to Burma, where *godartii*, Lucas, of which *siamensis*, Felder, is an undoubted synonym, is the dominant form. With it is found *layardi*, Druce, of which *binghami*, Moore, is a pure synonym. In this form the pale violet apical area to the forewing on the upperside in both sexes is absent; but this feature is not constant, and intergrades between true *godartii* and true *layardi* are occasionally found. But in the extreme north of Burma on the coast at Akyab, at Rangoon, and in Upper Tenasserim in Central Burma at Hatsiega is found *subdita*, Moore, which is the type and only species of Moore's genus *Mahintha*. The only specimens of this form that I have seen are from Akyab and the Arakan Hills, the latter locality being rather uncertain, as my specimens did not reach me direct from the collector but through a third person. These examples do not quite agree with Dr. Moore's figures of *subdita* from Akyab, (Lep. Ind., vol. i, pl. xxix), being less broad in the wing. As a species I do not consider it to be distinct from *layardi*, which again equals *godartii*, although its wings are a little broader than typical specimens of the last-named species. It bears the same relation to *godartii* that *nicevillei* does to *core*. In Upper Burma (Akyab, the Arracan Coast, and at Rungamutti in the Chittagong district) *E. core* has been obtained singly.

In the Malay Peninsula, *distantii*, Moore, was described from a single specimen from Province Wellesley (in Sumatra it is the common and dominant *Crastia*), but *godartii* has been recorded by Mr. Distant from Singapore, probably erroneously, and Dr. Moore has described *Crastia graminifera* from the "Malay Peninsula" apparently from a unique male example in Mr. Oberthür's collection. He compares it with *vermiculata*, Butler, but from the description it would appear to be nothing but a form of *C. distantii*, Moore, with rather smaller spots than in the typical specimens of that species; an obviously variably character in my large series of that species. Mr. Distant in his "Rhopalocera Malayana" ignores *graminifera* altogether.

In Indo-China, which includes Siam, *godartii* is the commonest species. Dr. Moore records *Crastia amymone*, Godart, originally described from Amboina, from Cochin China, a species I am quite unable to recognise from the original description, and Dr. Arnold Pagenstecher says in his paper on the butterflies of Amboina that he has not seen it from thence. Lastly, Dr. Moore describes a *Menama mouhotii* from Cambodia, of which I have a typical male from Chentaboon in Siam. This species has no male brand, and the wings are broader and more rounded than in typical *Crastia*. It therefore is an analogous species to *nicevillei* and *subdita*, and in my opinion is nothing but an aberrant form of *layardi* (= *binghami*), which again equals *godartii* (= *siamensis*). If my conjectures are right, it is very remarkable that the subgenus *Crastia* should have given rise to three aberrant forms in three well-defined regions, all differing one from the other and in different ways from the parent forms. *Crastia* appears to be in a highly plastic state.

From China proper five species have been recorded—*kinbergi*, Wal-lengren, of which *lorquinii*, Felder, and *felderi*, Butler, are I believe synonyms; *godartii*, Lucas (these two species occur together in Hongkong, and are I believe distinct); *amymone*, Godart, the Amboina species twice before mentioned; and *prunosa*, Moore. This latter is described from the very vague locality "China" apparently from a single male in M. Oberthür's collection. If it should be found to occur in Hongkong it will probably prove to be a synonym of *kinbergi*.

In the Nicobar Isles we have a single species of *Crastia*, the *scherzeri* of Felder, which was I believe originally wrongly labelled from Ceylon, and is therefore almost certainly the *camorta* of Moore.* It is not a true *Crastia*, as although it has the *Crastia* brand on the forewing in the male, it has as well the secondary sexual characters of *Menama* on the hindwing, which are not found in true *Crastia*.

* Vide de Nicéville, Journ. A.S.B., vol. lxxviii, pt. 2, p. 178 (1899).

In Sumatra, the butterflies of the N.-E. portion of which are well-known to me in life,* only one species of *Crastia* is I believe to be found, the *distantii* of Moore; though *amymone*, Godart, described from Amboina, has been recorded from thence; and *inconspicua*, Moore, and *felderi*, Butler, have been both described from Sumatra. *C. felderi* certainly occurs in Hongkong and is a synonym of *lorquinii*, Felder; while *C. inconspicua*, the description of which discloses a species apparently distinct from either *distantii* or *felderi*, having an immaculate forewing on the upperside, may have been wrongly labelled by Dr. A. R. Wallace, or occurs in a different part of the island to that with which I am familiar.

From Java two distinct species have been recorded—*godartii*, Lucas, which was I believe originally described from Java, but the work in which it is described is not in the Calcutta libraries, anyhow, it probably does not really occur in Java; and *haworthii*, Lucas (= *hübneri*, Moore, + *moorei*, Felder, + *janus*, Butler, = *eleusina*, Hübner, part, *nec* Cramer). In my collection I have but a single *Crastia* from Java, which I call *haworthii*, Lucas. It is extremely variable, in some male specimens the brand is almost half the length and quite half the breadth that it is in others, and the maculation also is not exactly the same in any two of my fourteen specimens. I think that Mr. W. F. Kirby in the new edition of Hübner's Ex. Schmett., pp. 6, 7, has misinterpreted the figures on pl. 222 (9) of that work. Figures 1 and 2 represent a male *Crastia* which will stand as *C. haworthii*, Lucas, = *hübneri*, Moore, = *moorei*, Felder, = *janus*, Butler; while figures 3 and 4 represent the female of *Selinda eleusina*, Cramer, the male of which is figured by Cramer in Ex. Lep., on plate cclxvi, fig. D. Mr. Kirby calls figs. 1 and 2 "*Selinda janus*, Butler," and figs. 3 and 4 "*Selinda eleusina*, Stoll [Cramer]. In Java only one species of *Crastia* appears to be found.

From the Philippines two species of *Crastia* have been recorded, *snelleni*, Moore, and *godartii*, Lucas, the latter almost certainly incorrectly.

TREPSICHROIS, Hübner.

Himalayas,	}	<i>claudius</i> , Fabricius† (<i>linnæi</i> , Moore, <i>van-deventeri</i> , Forbes).
Oudh,		
Central Provinces,		
Assam,		
Burma,		
Malay Peninsula,		

* *Vide* de Nicéville, Journ. A.S.B., vol. lxiv, pt. 2, pp. 357-555 (1895).

† *Vide* Aurivillius, Ent. Tids., vol. xviii, p. 141, n. 7 (1897).

Indo-China,	}	<i>claudius</i> , Fabricius* (<i>linnæi</i> , Moore, <i>van-deventeri</i> , Forbes).
China,		
Formosa,		
Nicobar Isles,		
Sumatra,		
Bawean,		
Natuna Isles,		
New Guinea?		

Ganjam on the E. coast of peninsular India, *kalinga*, Doherty.

Nias Isle, *verhuelli*, Moore.

Bali,	}	<i>basilissa</i> , Cramer.
Java,		

? Malay Peninsula,	}	<i>mulciber</i> , Cramer.
Billiton,		
Banka,		
Borneo,		

Engano Isle, *malakoni*, Doherty.

Mentawij Isles, *maassi*, Hagen.

Philippine Isles, *semperi*, Felder (*tisiphone*, Butler).

„	„	<i>diocletia</i> , Hübner	(<i>dufresne</i> , Godart, <i>megilla</i> ,
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„	„	<i>kochi</i> , Moore.	[Erichson).
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„	„	<i>visaya</i> , Semper.
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„	„	<i>mindanaensis</i> , Semper.
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„	„	<i>seraphita</i> , Fruhstorfer.
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„	„	<i>linnæi</i> , var. <i>paupera</i> , Staudinger.
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The subgenus *Trepsichrois* bears out my theory very well, no two species occurring in the same spot. The development of the subgenus is very remarkable in the different islands of the Philippine Archipelago, where the most aberrant and distinct species are found.

EUPLŒA, Fabricius.

Ceylon, *corus*, Fabricius (*elisa*, Butler).

Assam? *vitrina*, Fruhstorfer?

Burma, *vitrina*, Fruhstorfer.

Malay Peninsula, *castelnawi*, Felder (*phæbus*, Butler).

Indo-China, *drucei*, Moore.

Nicobar Isles, *castelnawi*, Felder.

Sumatra, *castelnawi*, Felder.

Nias Isles, *phæretena*, Kheil.

Engano, *micronesia*, Doherty.

* Vide Aurivillius, Ent. Tids., vol. xviii, p. 141, n. 7 (1897).

Java, *pavettæ*, Zinken-Sommer.

„ *gyllenhalii*, Lucas.

„ *castelnaui*, Felder.

Banka, *castelnaui*, Felder.

Borneo, *butleri*, Moore.

„ *godmani*, Moore.

Bawean, *castelnaui*, Felder.

Philippines (Palawan), *salvini*, Staudinger.

Celebes, *celebica*, Fruhstorfer.

Talaut Isles, *locupletior*, Fruhstorfer.

Engano Isle, *micronesia*, Doherty.

The subgenus *Euplœa* bears out my theory very well. It is true that three species have been recorded from Java and two from Borneo, but it is almost certain that only one species occurs in each island. Mr. Fruhstorfer in Stet. Ent. Zeit., vol. lx, p. 353 (1899), gives only *pavettæ* from Java and *butleri* from Borneo, which is almost certainly a correct statement of the facts.

CALLIPLÆA, Butler.

Lower Burma, *ledereri*, Felder (*inquinata*, Butler).

Malay Peninsula, *ledereri*, Felder.

Indo-China, *musa*, Swinhoe.

Sumatra, ? *ledereri*, Felder.

„ *eunus*, de Nicéville.

Java, *mazares*, Moore.

Bali, *mazares*, Moore.

Natuna Isles, *mazares*, Moore.

Borneo, *aristotelis*, Moore.

Lombok, *sambavana*, Doherty.

Sumba, *sumbana*, Doherty.

Batjan, *ledereri*, Felder.

Flores, *mazares*, Moore.

Philippines, *pollita*, Erichson.

„ *monilis*, Moore.

„ (Palawan), *palawana*, Fruhstorfer.

Hainan Island, China, *hainana*, Holland.

North China, *mariesis*, Moore.

The subgenus *Calliplœa* supports my theory very well, although the two first-named species occurring in the Philippine Archipelago are sometimes found on the same islands. It is very doubtful if two species are found in Sumatra, the recorded *ledereri* being probably my later-described *eunus*.

DANISEPA, Moore.

Eastern Himalayas,
Assam,
Burma,
Malay Peninsula,
Indo-China,
Sumatra,
Billiton,
Banka,
Natuna Isles,

} *diocletianus*, Fabricius (*radamanthus*,
Fabricius, *ramsayi*, Moore).

Nias Island, *schreiberi*, Butler (*maasseni*, Weymer, *niasana*, Swinhoe,
Java, *alcidice*, Godart (*thoosa*, Hübner). (*niasica*, Snellen).
Borneo, *lowei*, Butler.

Dr. Moore in Lep. Ind., vol. i, p. 114 (1891) records *D. schreiberi* [sic!] from Borneo, but that species is I believe strictly confined to Nias. Mynheer P. C. T. Snellen has written an interesting note on the subgenus *Danisepe* in Tijds. voor Ent., vol. xlii, pp. 101–105 (1899), but omits all reference to *D. schreiberi*, Butler, which is an older name than *D. niasica*, Snellen. I am unable, as Dr. Moore did in 1883, to draw any line between *diocletianus* and *radamanthus*. In 1890 he united these two species, but gave the latter name (*rhadamanthus*, sic!) precedence, while *diocletianus* in the older, and described *ramsayi* as a new species, restricting it to the Eastern Himalayas. That species gradually merges into *diocletianus*, though typical specimens have the white markings larger; but this is an inconstant character. Mr. W. F. Kirby points out in the new edition of Hübner's Ex. Schmett., p. 5, that in Godart's *D. alcidice* from Java no mention is made in the description of the white marginal spots on the forewing. This is probably an omission only, as no species of *Danisepe* is known from Java or elsewhere in which these spots are lacking, though they are blue rather than white. Kirby gives *D. thoosa* specific rank to the exclusion of the older *alcidice*. *Danisepe* supports my theory very well, as the several species nowhere overlap.

SALPINX, Hübner.

Lower Burma,
Malay Peninsula,
Western China,
Nicobar Isles,
Sumatra,

} *leucostictos*, Gmelin (*dehaanii*, Lucas,
novaræ, Felder, *vestigata*, Butler, *lazulina*,
Moore, *leucogonys*, Butler).

- | | | |
|---|---|--|
| Nias Isle, | } | <i>leucostictos</i> , Gmelin (<i>dehaanii</i> , Lucas,
<i>novaræ</i> , Felder, <i>vestigata</i> , Butler, <i>lazulina</i> ,
Moore, <i>leucogonys</i> , Butler). |
| Java, | | |
| Bali, | | |
| Borneo, | | |
| Talaut Islands, | | |
| Borneo, <i>kadu</i> , Eschscholtz. | | |
| Engano Island, <i>phane</i> , Doherty. | | |
| Philippine Isles, <i>kadu</i> , Eschscholtz (<i>eunice</i> , Godart, <i>hewitsonii</i> , | | [Butler). |
| „ „ <i>oculata</i> , Moore. | | |
| „ „ <i>simillima</i> , Moore. | | |
| „ „ <i>althæa</i> , Semper. | | |
| „ „ <i>meldolæ</i> , Moore. | | |
| Amboina, <i>leucostictos</i> , Gmelin. | | |
| Hainan Island, <i>negleyana</i> , Holland. | | |
| N. Formosa Island, <i>hobsoni</i> , Butler. | | |

In the Philippine Isles the various species of *Salpinx* occur together on several of the islands, which goes to disprove my theory; elsewhere the several species appear to inhabit well-defined separate areas, except in Borneo, where *leucostictos* and *kadu* are both found.

PADEMMA, Moore.

- | | | |
|---|---|---|
| Behar, | } | <i>klugii</i> , Moore (<i>illustris</i> , Butler, <i>grantii</i> ,
Butler, <i>dharma</i> , Moore, <i>augusta</i> , Moore,
<i>indigofera</i> , Moore, <i>imperialis</i> , Moore, <i>regalis</i> ,
Moore, <i>macclellandi</i> , Moore, <i>uniformis</i> ,
Moore, <i>sherwillii</i> , Moore, <i>hamiltoni</i> ,
(Swinhoe). |
| Bengal (Maldah), | | |
| Sikkim hills, | | |
| Bhutan, | | |
| Assam, | | |
| Upper Burma, | | |
| Bengal (Maldah), | } | <i>klugii</i> , Moore, geographical race <i>erichsonii</i> ,
Felder (<i>crassa</i> , Butler, <i>masoni</i> , Moore, <i>pem-</i>
<i>bertoni</i> , Moore, <i>apicalis</i> , Moore, <i>burmeisteri</i> ,
Moore). |
| Assam, | | |
| Upper Burma, | | |
| Lower Burma, | | |
| Malay Peninsula, | | |
| Indo-China, | | |
| Sikkim, | } | <i>klugii</i> , Moore, geographical race <i>kollari</i> , Felder
(<i>rothneyi</i> , Moore). |
| Bengal, | | |
| Orissa, | | |
| South India, | | |
| Ceylon, <i>sinhala</i> , Moore. | | |
| Hainan Island, <i>minorata</i> , Moore. | | |

I have nothing to add to what I wrote on this subgenus nearly ten years ago. The two geographical races separated above are not strictly

geographically separated, as they overlap the typical form at certain points. The Ceylonese species can be satisfactorily separated from the continental form; the species from Hainan I have not seen.

ISAMIA, Moore.

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|---|---|---|
| Nepal, | } | <i>rogenhoferi</i> , Felder (<i>splendens</i> , Butler, <i>irawada</i> , Moore). |
| Sikkim, | | |
| Bhutan, | | |
| Assam, | | |
| Upper Burma, | | |
| Central Burma, | } | <i>margarita</i> , Butler (<i>adamsoni</i> , Marshall, <i>brahma</i> , Moore, <i>carpenteri</i> , Moore). |
| Central Burma, | | |
| Lower Burma, | | |
| Malay Peninsula, | | |
| Indo-China, <i>grotei</i> , Felder (part, male only). | | |
| „ „ | | <i>margarita</i> , Butler. |
| „ „ | | <i>marseuli</i> , Moore. |
| „ „ | | <i>fabricii</i> , Moore. |
| Southern China, | { | <i>midamus</i> , Linnæus (<i>superba</i> , Herbst, <i>alopia</i> , Godart, <i>sinica</i> , Moore). |
| Northern China, <i>dameli</i> , Moore. | | |
| Malay Peninsula, | } | <i>chloë</i> , Guérin (<i>ægyptus</i> , Butler, <i>dejeani</i> , Distant, <i>staudingeri</i> , Kheil, <i>raftlesi</i> , Moore, <i>singapura</i> , Moore, <i>sophia</i> , Moore, <i>lowei</i> , Moore). |
| Sumatra, | | |
| Nias Island, | | |
| Natuna Isles, | | |
| Java, | | |
| Banka, | | |
| Billiton, | | |
| Borneo. | | |
| Mantawej Isles, <i>sticheli</i> , Hagen. | | |

From the list given above it will be seen that it is only in Indo-China that more than one species of *Isamia* is found. *I. grotei*, male only, described from "Cochin" (Cochin China being evidently meant, not the district of that name in South India) is probably the same as *I. margarita*, Butler; *I. marseuli* is probably the same species; but *I. fabricii* belongs to quite another group (i.e., to the *chloë* group), being entirely unglossed with blue on the upperside, which is a conspicuous feature in the other three species. Unfortunately I do not possess a single specimen of *Isamia* from any part of Indo-China, so am unable to speak about them from first-hand knowledge.

NARMADA, Moore.

Ceylon, *montana*, Felder (*lankana*, Moore).South India, *coreta*, Godart (*coreoides*, Moore).Sumatra, ? *consimilis*, Felder.,, *martinii*, de Nicéville.Java, *consimilis*, Felder.

I have seen no specimen of *N. consimilis* from Sumatra. *N. martinii* from that island is not a true *Narmada*, as the male sexual brands are not typical; nor does the shape of the wings agree with those of typical *Narmada*. I may mention that *N. coreta* does occur in Orissa, I have many specimens from thence. Dr. Moore notes in Lep. Ind., vol. i, p. 134, that its identification from thence "Is probably erroneous, and requires confirmation." *N. consimilis* seems to be extremely rare, I have seen no specimen of it.

STICTOPLÆA, Butler.

Eastern Himalayas,	}	<i>harrisii</i> , Felder (<i>grotei</i> , Felder, part, female only, <i>hopei</i> , Felder, <i>microsticta</i> , Butler, <i>binotata</i> , Butler, <i>regina</i> , Moore, <i>pygmæa</i> , Moore, <i>crowleyi</i> , Moore).
Assam,		
Burma,		
Malay Peninsula,		
Indo-China,		

Sumatra,	}	<i>tyrianthina</i> , Moore.
Borneo,		

Palawan (Philippines), *dotata*, Fruhstorfer.Philippines, *lætifica*, Butler.,, *bazilana*, Fruhstorfer.Sumatra, *picina*, Butler.,, *inconspicua*, Butler.,, *mæsta*, Butler.

Java,	}	<i>lacordairei</i> , Moore.
Sambawa,		

Formosa, *swinhoei*, Wallace.

S. tyrianthina is very doubtfully distinct from *S. harrisii*. Four species of *Stictoplæa* have been recorded from Sumatra. Out of the many hundreds of *Euplæas* which have passed through my hands from that island, I have seen but one species, which I identify as *tyrianthina*. *S. mæsta* is recorded from thence by Dr. Butler in Proc. Zool. Soc. Lond., 1866, p. 284, n. 49, p. 281, fig. 3, *male*, and Trans. Ent. Soc. Lond., third series, vol. v, p. 474, n. 51 (1867), and these records were overlooked by me in my paper on the butterflies of Sumatra in Journ. A.S.B., vol. lxiv, pt. 2, pp. 357–555 (1895). Dr. Moore gives it from New Guinea only. Notes by me on the Indian and Malay Peninsula

species of *Stictoplaea* will be found in Proc. A.S.B., 1892, pp. 158-161, and Trans. Ent. Soc. Lond., 1892, pp. 247-248.

I now return to the discussion of the various species of the subgenus *Tronga*, and will take up each of them in the order in which they were first described.

1. *TRONGA CRAMERI*, Lucas.

Euplaea crameri, Lucas, Rev. et Mag. de Zool., 1853, p. 318, *male*; id., Moore, Horsfield and Moore, Cat. Lep. Mus. E.I.C., vol. i, p. 129, n. 256 (1857), *male*; id., Butler, Proc. Zool. Soc. Lond., 1866, p. 277, n. 27; id., Druce, Proc. Zool. Soc. Lond., 1873, p. 338, n. 4; *Crastia crameri*, Butler, Journ. Linn. Soc. Lond., Zool., vol. xiv, p. 297, n. 7 (1878); id., Snellen, Notes Leyden Mus., vol. xvii, p. 118, n. 2 (1895); *Euplaea* (*Crastia*) *crameri*, Marshall and de Nicéville, Butt. of India, vol. i, p. 78, pl. viii, fig. 15, *male* (1882); *Tronga crameri*, Moore, Proc. Zool. Soc. Lond., 1883, p. 266, n. 1; idem, id., Lep. Ind., vol. i, p. 79 (1890); id., Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 188 (1898).

HABITAT: Manilla (*Lucas*); Borneo (*Moore*); Borneo (*Butler*); Borneo (*Druce*); Natuna Isles (*Snellen*); Borneo (*Marshall and de Nicéville*); North and South Borneo, Mt. Mulu (*Fruhstorfer*).

This species was originally described from Manilla, in Luzon, the capital of the Philippines, but according to all authors including Herr G. Semper in Schmett. Philipp., p. 33 (1886), it is not found there. I have not had access to the original description, so do not know exactly what form of it M. Lucas described. The specimen I figured in 1882 may perhaps be typical, it has, on the upperside of the forewing, one discal spot in the second median interspace, and six submarginal spots, both the marginal and submarginal series on the hindwing obsolete. The specimen Dr. Moore has kindly marked for me as typical has eight submarginal spots on the forewing and a few (six) marginal spots on the hindwing, one belonging to the inner series. Dr. Butler notes that "The description by M. Lucas answers to Moore's species." It is extremely variable, even in Borneo, and has been given, in my opinion, nine synonymic names.

2. *TRONGA KINBERGI*, Wallengrén.

Euplaea kinbergi, Wallengrén, Wien. Ent. Monatsch., vol. iv, p. 35, n. 8 (1860); idem, id., Kongl. Svenska Fregatten Eugenies Resa, Zoologi, Insecta, pt. 4, p. 352, n. 4 (1861); id., Butler, Proc. Zool. Soc. Lond., 1866, p. 273, n. 11, p. 453; *Crastia kinbergi*, id., Journ. Linn. Soc. Lond., Zoology, vol. xiv, p. 297, n. 6 (1878); *Tronga kinbergi*, Moore, Proc. Zool. Soc. Lond., 1883, p. 269, n. 12; *Euplaea* (*Tronga*) *kinbergi*, Fruhstorfer, Berl. Ent. Zeitsch., vol. xli, p. 300 (1896).

HABITAT: China, December (*Wallengrén*); China (*Butler*); China (*Moore*); Tengger mountains, 2,000 feet, East Java (*Fruhstorfer*).

When describing this species, Wallengrén gave "China" as its habitat, which is very vague, but as most of the older writers had access to species from Southern China only, *T. kinbergi* probably came from the Canton district or from the Island of Hongkong, both in Southern China. He compares it with *E. alopia*, Godart, which is an *Isamia*. He does not give the sex of the type specimen. The description agrees very well with some of my specimens of the very variable *Euplœa* (*Crastia*) *lorquini*, Felder (= *E. felderi*, Butler), the commonest species in Hongkong. Should this species prove to be same as *lorquini*, Wallengrén's name will stand, being the older. Butler in 1866 recorded it from China, and noted that "*E. felderi* may be a local form of *E. kinbergi*, Wallengren," which is probably a correct assumption. Moore in 1883 gave it as a *Tronga* from China, and said that specimens were in the collection of the British Museum, but in 1890 he made no mention of it in "Lep. Ind." amongst the extra-Indian species of *Tronga*. Fruhstorfer recorded it from Java, which is almost certainly incorrect; as far as I know, no species of *Euplœa* is common to both China and Java, and there is no reason to suspect that *E. kinbergi* came from anywhere else than China.*

3. TRONGA BREMERI, Felder.

Euplœa bremeri, Felder, Wien. Ent. Monatsch., vol. iv, p. 398, n. 16 (1860); id., Butler, Proc. Zool. Soc. Lond., 1866, p. 277, n. 28; idem, id., Trans. Linn. Soc. Lond., Zool., second series, vol. i, pp. 535, 564, n. 6 (1877); id., Druce, Proc. Zool. Soc. Lond., 1873, p. 338, p. 5; id., Godman and Salvin, Proc. Zool. Soc. Lond., 1878, p. 638, n. 8; id., Distant, Rhop. Malay., pp. 23, 410, n. 2, pl. ii, fig. 4, *male* (1882, 1886); id., Marshall and de Nicéville, Butt. India, Burmah and Ceylon, vol. i, p. 78, n. 60 (1882); id., Marshall, Proc. A. S. B., 1882, p. 143, n. 60; id., Adamson, Notes *Danainæ* Burmah, p. 10 (1889); idem, id., Cat. Butt. Burmah, p. 5, n. 26 (1889); id., Hagen, Tidjsch. van het Kon. Ned. Aard. Genootsch., 1890, p. 191, n. 2; idem, id., Berl. Ent. Zeitsch., vol. xxxvii, p. 143, n. 8 (1892); idem, id., Iris, vol. vii, p. 41, n. 104 (1894); id., Pagenstecher, in Kükenthal's Erg. einer zool. Forsch. Molukken und in Borneo, p. 389, n. 109 (1897); *Crastia bremeri*, Butler, Journ. Linn. Soc. Lond., Zool., vol. xiv, p. 298, n. 9 (1878); *Tronga bremeri*, Moore, Proc. Zool. Soc. Lond., 1883, p. 267, n. 4, pl. xxix, fig. 5, *male*; idem, id., Journ. Linn. Soc. Lond., Zool., vol. xxi, p. 30 (1886); idem, id., Lep. Ind., vol. i, p. 76, pl. xix, figs. 1, 1a, 1b, *male*; 1c, 1d, *female* (1890); *E. (Tronga) bremeri*, Adamson, Cat. Butt. Burmah, p. 7, n. 15

* Since the above was written Professor Chr. Aurivillius has sent me a beautiful coloured drawing of the type specimen of *Euplœa kinbergi*, Wallengrén, this drawing I hope to reproduce in a later paper. It represents a female example of probably the commonest form of *Euplœa* found in Hongkong and on the opposite mainland of Southern China. The *Euplœa lorquini* of Felder and *E. felderi* of Butler are synonyms of *E. kinbergi*. It is a *Crastia*, not a *Tronga*.

(1897); id., de Nicéville and Martin, Journ. A.S.B., vol. lxiv, pt. 2, p. 370, n. 19 (1895); *Tronga crameri bremeri*, Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 188 (1898).

HABITAT: Malay Peninsula (*Felder*); Malayan Peninsula; India; Assam and Nepal (sic!); Malacca; Province Wellesley; Penang; Singapore; Borneo; Sumatra (*Butler*); Borneo; Peninsula Malayica (*Druce*); Billiton; Borneo; Malacca (*Godman and Salvin*); Assam; Burma; Province Wellesley; Malacca; Tenasserin (*Distant*); Mergui Archipelago; Penang; Malacca; Singapore; Borneo; Sumatra (*Marshall and de Nicéville*); Akyab, July (*Marshall*); Moulmain, June; Moumagan in Tavoy, September (*Adamson*); Deli on the east coast of Sumatra; Banka Island; Further India; Malacca (*Hagen*); Samarinda in Borneo (*Pagenstecher*); Malacca; Sumatra; India (*Butler*); Province Wellesley; Tavoy; Mergui, December to March, very common; Akyab, July; Thoungyeen forests in Upper Tenasserim; Mergui Archipelago, December to March; Malay Peninsula (*Moore*); Tavoy coast, September, common; Moulmain, one pair, June (*Adamson*); N.-E. Sumatra, plains to 1,500 feet (*de Nicéville and Martin*); Malacca; Sumatra; Natuna Isles (*Fruhstorfer*).

I consider this species to be a synonym of *T. crameri*, Lucas. It is extremely variable; Dr. Moore has devoted an entire plate to it in his Lep. Ind., which shews a few of these variations. Even its male secondary sexual characters are inconstant, as in Sumatra I have recorded that a few specimens have on the upperside of the forewing a short, sometimes quite a long and distinct, brand in the submedian interspace. These examples do not fit into Dr. Moore's definition of his genus *Tronga*, which is described and usually does not possess a sexual-mark or scent-producing organ. But these aberrant examples are certainly not distinct as species from the more common typical specimens of *T. bremeri*. This brand is sometimes present and sometimes absent in other species of *Euplœa*, as will be noticed hereafter. *T. bremeri* has been recorded from Assam and Nepal by Dr. Butler, but is not found further north than Akyab in Upper Burma.

4. *TRONGA FRAUENFELDII*, *Felder*.

Euplœa frauenfeldii, *Felder*, Verh. zool.-bot. Gesellsch. Wien, vol. xii, p. 479, n. 87 (1862); idem, id., Reise Nov., Lep., vol. ii, p. 342, n. 474, pl. xli, fig. 4, male (1865); id., *Marshall and de Nicéville*, Butt. Ind. Burmah and Ceylon, vol. i, p. 83, n. 66 (1882); id., de Nicéville, Journ. A.S.B., vol. lxviii, pt. 2, p. 178 (1899); *E. frauenfeldi*, *Butler*, Proc. Zool. Soc. Lond., 1866, p. 453; idem, id., Journ. Linn. Soc. Lond., Zool., vol. xiv, p. 300, n. 19 (1878).

HABITAT: Ceylon (*Felder*); Ceylon (*Marshall and de Nicéville*); Nicobar Isles (*de Nicéville*); Ceylon (*Butler*); Trincomalee (*Butler*).

Felder in 1862 described this species from Ceylon from a male collected by the officers of the "Novara" frigate which called at various ports. I believe that the specimen was incorrectly labelled, and really came from the Nicobars, where the "Novara" called, as no *Euplœa* answering to the description has since been found in Ceylon. Felder in 1865 redescribed both sexes of the species, retaining Ceylon as its habitat, but uniting to it his *E. esperi*, described from a female example from Kar Nicobar, though in his second description of *E. frauenfeldii* he omitted the Nicobars from the habitat of the species. In his 1866 monograph Dr. Butler noted quite correctly that the species is a local form of *E. crameri*, Lucas, and that it is very near to *E. bremeri*, Felder, as Felder said when describing it. In 1878 Dr. Butler recorded a male from Trincomalee in Ceylon. Dr. Moore described this specimen in his Lep. of Ceylon (where he gave *E. esperi* as a synonym), and again in his Lep. Indica, and figured it in the latter work. It is not *T. frauenfeldii*, having been wrongly identified, but is *Crastia kinbergi*, Wallengren, = *E. lorquini*, Felder, and *E. felderi*, Butler. I am convinced that it never came from Ceylon, but was probably caught at Hongkong, where it is very common, by an officer of some man-of-war which subsequently visited the naval station of Trincomalee, and the specimen reached the British Museum from thence. *E. esperi* is undoubtedly a synonym of *E. frauenfeldii*, as also is *Tronga biseriata*, Moore.

T. frauenfeldii may be retained as a species or good local race of *T. crameri*, Lucas, as all the white spots on the forewing are very small and nearly uniform in size, while in *E. crameri* the spots of the submarginal series in the forewing are irregular in size, several of those towards the apex of the wing being much larger than the others. It is found in the Nicobar isles only, occurring on most of the islands. It has a sexual brand in the male in the forewing in the submedian interspace in some specimens, which is variable in size and prominence, and wholly absent in others. Those bearing this brand are considered by Dr. Moore to represent a distinct species, which he has called *T. biseriata*. As noted by me in several places in this paper, this brand is very inconstant in many groups of *Euplœas*, and cannot be relied on to separate genera or subgenera by.

5. *TRONGA ESPERI*, Felder.

Euplœa esperi, Felder, Verh. zool.-bot. Gesellsch. Wien, vol. xii, p. 482, n. 109 (1862); id., Butler, Proc. Zool. Soc. Lond., 1866, p. 453*; id., Moore, Proc. Zool. Soc.

* Omitted altogether by Dr. Butler in his 1878 revision of the butterflies of the genus *Euplœa* in the collection of the British Museum.

Lond., 1877, pp. 582, 623; id., Wood-Mason and de Nicéville, Journ. A.S.B., vol. 1, pt. 2, p. 227, n. 8 (1881); vol. li, pt. 2, p. 15, n. 7 (1882); id., Marshall and de Nicéville, Butt. India, Burmah and Ceylon, vol. i, p. 83, n. 65 (1882); id., de Nicéville, Journ. A.S.B., vol. lxviii, pt. 2, p. 178 (1899); *Crastia esperi*, Moore, Proc. Zool. Soc. Lond., 1883, p. 278, n. 6; idem, id., Lep. Ind., vol. i, p. 88, pl. xxvii, figs. 2, 2a, male; 2b, female (1890).

HABITAT: Kar Nicobar (*Felder*); Nicobar Islands (*Butler*); Kar Nicobar, Nicobars (*Moore*); Pulo Kondul, Kamorta, Trinkut, Katschall (*Wood-Mason and de Nicéville*); Nicobars (*Marshall and de Nicéville*); Nicobar Isles (*de Nicéville*); Kar Nicobar, Kamorta (*Moore*).

This species is, in my opinion, a synonym of *E. frauenfeldii*, *Felder*, to which *Felder* himself united it, as also did Dr. Moore in 1880. *Felder* compared it with the Philippine [sic] *E. crameri*, *Lucas*. For further notes regarding it see the last species.

6. TRONGA JOHANNA, Kirby.

Euploea johanna, Kirby, Syn. Cat. Diurn. Lep., p. 17, n. 131 (1871); id., Kheil, Rhop. Nias, p. 17 (1884); id., Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 189 (1898).

HABITAT: Borneo (*Kirby*).

Mr. W. F. Kirby renamed the *Euploea crameri*, *Moore*, described in *Horsfield and Moore's Cat. Lep. Mus. E.I.C.*, vol. i, p. 129, n. 256 (1857), from Borneo, as he considered it to represent a species distinct from the earlier *E. crameri* of *Lucas*, from Manilla in the Philippines, this locality, as previously noted, being in all probability incorrect. As, however, Dr. Moore says that his *E. crameri* is the same species as that of *Lucas*, Kirby's *E. johanna* falls to it as a synonym.

7. TRONGA BISERIATA, Moore.

T. biseriata, Moore, Proc. Zool. Soc. Lond., 1883, p. 266, n. 2; idem, id., Lep. Ind., vol. i, p. 78, pl. xxi, figs. 1, 1a, 1b, male; 1c, 1d, female (1890); id., de Nicéville, Journ. A.S.B., vol. lxviii, pt. 2, p. 178 (1899); *Tronga crameri biseriata*, Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 188 (1898).

HABITAT: Trinkut, Great Nicobar, Little Nicobar, Nancoury, Pulo Kondul—all in the Nicobar Isles (*Moore*); Nicobars (*de Nicéville*); Nicobars (*Fruhstorfer*).

I have said all that is necessary about this species under *T. frauenfeldii*, *Felder*, of which it is a synonym.

8. TRONGA MARSDENI, Moore.

T. marsdeni, Moore, Proc. Zool. Soc. Lond., 1883, p. 266, n. 3; idem, id., Lep. Ind., vol. i, p. 79 (1890); *Euploea marsdeni*, Distant, Rhop. Malay., p. 411, n. 18,

pl. xxxix, fig. 1, male (1886); *Tronga crameri marsdeni*, Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 188 (1898).

HABITAT: Singapore (Moore); Singapore (Distant); Singapore (Fruhstorfer).

Mr. Distant allows this species full specific rank, and says he has received two specimens from Singapore, which both differ from the type specimen described by Dr. Moore from the same island, which shews that this "species" is as variable as most of the other species in the subgenus. In my opinion it is a synonym of *T. crameri*, Lucas, which species (as *E. bremeri*, Felder), has been recorded by several authors from numerous localities in the Malayan Peninsula. It is highly improbable that Singapore island, which has hardly a scrap of virgin forest remaining, has a distinct species of *Tronga* to itself. Dr. Moore says that it is "An intermediate form between *T. bremeri*, Felder, and *T. crameri*, Lucas."

9. *TRONGA OLIVACEA*, Moore.

T. olivacea, Moore, Proc. Zool. Soc. Lond., 1883, p. 267, n. 5; id., Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 189 (1898).

HABITAT: Minthantoung, Thoungyeen valley, Tenasserim (Moore).

This species was described from a single very small female specimen. Dr. Moore in Lep. Ind., p. 76, admits that it is a "small var." of *T. bremeri*, Felder, which itself is a synonym of *T. crameri*, Lucas.

10. *TRONGA NIASICA*, Moore.

T. niasica, Moore, Proc. Zool. Soc. Lond., 1883, p. 267, n. 7; idem, id., Lep. Ind., vol. i, p. 79 (1890); *Euploea niasica*, Kheil, Rhop. Nias, p. 17, n. 13, pl. i, fig. 2, female (1884); *Tronga pryleri niasica*, Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 189 (1898).

HABITAT: Nias Island, W. coast of Sumatra (Moore); Nias (Kheil); Nias (Fruhstorfer).

I have eight males, but no females, of this species. The markings are more constant than usual, though they vary considerably in detail, for instance, the submarginal dots on the hindwing may form a complete series or may be reduced to a solitary spot, and there are intergrades between these two extremes; the spots on the forewing vary also in size and number. The species may, perhaps, be kept distinct, as the spots in the forewing are more uniform in size than in the other species of the subgenus known to me, except *T. frauenfeldii*, Felder, in which they are constantly smaller.

11. *TRONGA BROOKEI*, Moore.

T. brookei, Moore, Proc. Zool. Soc. Lond., 1883, p. 268, n. 8; idem, id., Lep. Ind., vol. i, p. 79 (1890); id., Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 188 (1898).

Dr. Moore has kindly identified a male specimen of this species for me from Sarawak, Borneo, and marked it "Same as type," though it does not agree with the type, as in the forewing it has no marginal series of spots, in the type they are said to be present but "very minute." Mr. Fruhstorfer says that *Tronga brookei* is identical with *Menama lorzæ*, Moore. This is entirely incorrect, the genus *Menama* has a sexual patch of androconia on the upperside of the hindwing not found in *Tronga*, *brookei* is a *Tronga*, and *lorzæ* is a *Menama*. I consider *T. brookei* to be a synonym of *T. crameri*, Lucas. Dr. Moore says it is "Comparatively smaller and narrower winged than *T. crameri*; of a paler brown colour, and with a violet-blue tint."

12. *TRONGA LABUANA*, Moore.

T. labuana, Moore, Proc. Zool. Soc. Lond., 1883, p. 268, n. 9; idem, id., Lep. Ind., vol. i, p. 80 (1890); id., Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 189 (1898).

HABITAT: Labuan, Borneo (*Moore*).

Dr. Moore has identified a male specimen of this species for me from Sarawak, Borneo. Though marked "Same as type" it does not agree exactly with the description of the type; and it would be extraordinary perhaps if it did, as in these Borneo *Trongas* I cannot find two marked exactly alike. Mr. Fruhstorfer says that this species is a synonym of *T. crameri*, Lucas, wherein I agree with him.

13. *TRONGA DAATENSIS*, Moore.

T. daatensis, Moore, Proc. Zool. Soc. Lond., 1883, p. 268, n. 10; idem, id., Lep. Ind., vol. i, p. 80 (1890); id., Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 189 (1898).

HABITAT: Island of Daat, Labuan, Borneo (*Moore*).

Dr. Moore, not having access to the type of this species, was unable to match it with any of the Bornean *Trongas* I sent to him. As, however, from the description it only appears to differ from other Borneo *Trongas* in some slight details of maculation I concur with Mr. Fruhstorfer in considering it to be a synonym of *T. crameri*, Lucas.

14. *TRONGA PRYERI*, Moore.

T. pryeri, Moore, Proc. Zool. Soc. Lond., 1883, p. 269, n. 11; idem, id., Lep. Ind., vol. i, p. 80 (1890); id., Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 189 (1898);

Euplœa bremeri, var. *pryeri*, Distant and Pryer, Ann. and Mag. of Nat. Hist., fifth series, vol. xix, p. 47, n. 12 (1887).

HABITAT: Sandakan, Borneo (*Moore*); North Borneo (*Fruhstorfer*); Sandakan, Borneo (*Distant* and *Pryer*).

Dr. Moore has sent me a sketch of the type male of this species, none of the specimens I sent to him being identical. Its chief peculiarity appears to be the presence of a complete double series of rather large spots on the hindwing. Mr. Fruhstorfer takes *T. pryeri* as the type of his second division of the genus *Tronga*, based on this character, and gives *heylærtsii*, Moore, *niasica*, Moore, *mentawica*, Hagen, and *nicevillei*, Moore, as subspecies of *pryeri*, though why he gives *pryeri* precedence over *niasica*, the latter being the older species, and *brookei* over *lorzæ* for the same reason, is best known to himself. Though I sent no typical specimens of *T. pryeri* from Borneo to Dr. Moore, I possess several of both sexes that agree with his description and sketch of that species, and it is in my opinion another synonym of *T. crameri*, Lucas.

15. TRONGA HEYLÆRTSII, Moore.

T. heylærtsii, Moore, Lep. Ind., vol. i, p. 79 (1890); *E. (Tronga) heylærtsii*, de Nicéville and Martin, Journ. A.S.B., vol. lxiv, pt. 2, p. 371, n. 21 (1896); *T. pryeri heylærtsi*, Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 189 (1898).

HABITAT: Sumatra (*Moore*); Sumatra (*de Nicéville* and *Martin*); Sumatra; Malacca (*Fruhstorfer*).

From the description alone I can identify this species without difficulty, as it is the commonest form of *Tronga* occurring in Sumatra. It is another synonym of *T. crameri*, Lucas.

16. TRONGA PAGENSTECHEI, Hagen.

Euplœa pagenstecheri, Hagen, Jahr. des Nass. Ver. für Natur., vol. xlix, p. 182, n. 18, pl. iv, fig. 8, male (1896); *Tronga crameri pagenstecheri*, Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 188 (1898).

HABITAT: Bawean Island (*Hagen*); Bawean (*Fruhstorfer*).

I have not seen this species. Dr. Hagen says that it comes into Moore's subgenus *Menama*, near *M. lorzæ*, Moore, [nec Boisduval], while Fruhstorfer puts it in the subgenus *Tronga*.

17. TRONGA MENTAWICA, Hagen.

Euplœa (Tronga) mentawica, Hagen, Ent. Nach., vol. xxiv, p. 199 (1898); *Tronga pryeri mentawica*, Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 189 (1898).

HABITAT: Mentawej Islands (*Hagen*); Mentawej (*Fruhstorfer*).

I have not seen this species.

18. *TRONGA MORRISI*, Hagen.

Euploea (*Tronga*) *morrissi*, Hagen, Ent. Nach., vol. xxiv, p. 199 (1898); *Tronga morrissi*, Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, p. 188 (1898).

HABITAT: Mentawej Islands (*Hagen*); Mentawej (*Fruhstorfer*).

This species also I have not seen. It is highly improbable I think that two distinct species of *Tronga* inhabit one tiny group of islets lying to the south of the central portion of Sumatra. Should one prove to be a *Tronga* and the other a *Menama* the occurrence of two closely-allied but subgenerically distinct species would be accounted for.

19. *TRONGA TENGGERENSIS*, Fruhstorfer.

T. crameri tenggerensis, Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, pp. 187, 188 (1898).

HABITAT: Tengger mountains, 2,000 feet, East Java (*Fruhstorfer*).

I have seen no specimen of this species. See remarks on p. 14.

20. *TRONGA BISERIATA*, Fruhstorfer.

T. crameri, ab. *biseriata*, Fruhstorfer, Berl. Ent. Zeitsch., vol. xliii, pp. 187, 188 (1898).

HABITAT: East Java (*Fruhstorfer*).

Mr. Fruhstorfer describes this as an "aberration" of *T. crameri*, Lucas, which latter he records from "North and South Borneo, Mt. Mulu," only, and not from Java at all. Probably he intends it to be understood that it is an aberration of his *tenggerensis* rather than of *crameri*. There is already a *Tronga biseriata* (see n. 7, p. 34) of Moore, so as a distinct species it cannot stand in any case. I have not seen it.

The two following species have been described in the genus *Tronga* :—

1. *Tronga moorei*, Butler, *vide* Moore, Proc. Zool. Soc. Lond., 1883, p. 267, n. 6, is a *Menama*.

2. *Tronga nicevillei*, Moore, Lep. Ind., vol. i, p. 77, pl. xx (1890), is an aberrant *Crastia* in my opinion.

Also *Menama mouhotii*, Moore, Proc. Zool. Soc. Lond., 1883, p. 265, n. 7, pl. xxxi, fig. 6, *male*, is in my opinion another aberrant *Crastia*.



Nicéville, Lionel de. 1901. "Notes on the Butterflies comprised in the subgenus *Tronga* of the genus *Euploa*." *The journal of the Asiatic Society of Bengal* 70(II), 12–38.

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