NOTES ON THE CERACINI (LEPIDOPTERA, TORTRICIDAE) [1])

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Abstract

The group is defined as a tribe of the Tortricidae, *Eurydoxa* Filipjev (type-species, *E. advena* Filipjev) is reestablished as distinct from *Cerace* Walker, owing to recent studies of chaetotaxy. Described as new are *C. malayana* (Malay States, close to *stipatana* Walker), ♀ of *C. cyanopyga* Diakonoff (Burma), ♀ genitalia of *C. ios* Diakonoff; *C. leechi* spec. nov., ♀ (China) is defined. Sunk as synonyms are *C. guttana* Felder & Rogenhofer (syn. of *onustana* Walker); *C. tamsi* Diakonoff (syn. of *mesoclasta* Meyrick); *stipatana clara* Diakonoff is suppressed as subspecies, *Bathypluta triphaenella melanoptera* Diakonoff and *B. t. nox* Diakonoff are relegated to colour formae. Transferred to *Eurydoxa* is *Eucosma tetrakore* Wileman & Stringer and *Ceraceopsis ussuriensis* Kurentsov. Lectotypes are designated for: *Pentacitrotus vulneratus* var. *distinctus* Diakonoff, *Cerace tetraonis* Butler, *C. t. archimedis* Diakonoff, *C. xanthocosma* Diakonoff, *C. stipatana* Walker, *C. s. formosana* Diakonoff, and *Bathypluta triphaenella melanoptera* Diakonoff.

Twenty years ago the author published a revision of the present group of brightly coloured large species of the family Tortricidae (Diakonoff, 1950). In the course of time little additional material has come to our notice. These years have not been too favourable for collecting in Central and South Asia, the native countries of the Ceracini, except the profitable series of expeditions by the Munick Museum to Nepal, 1955—1969. Several important specimens have been found recently, though, chiefly in old collections of the British Museum (Natural History) and also in other museums, which are worth recording; besides, certain additional remarks to my above mentioned paper have become necessary, in order to make the descriptions of that time to answer modern requirements of nomenclature.

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Ceracini

The concept of the group as a separate family, Ceracidae, of the suborder Tortricoidea, is no longer tenable. Although the characteristic species, especially of the genus *Cerace*

[1]) Dedicated to my friend, Dr. H. Blöte, the Dutch hemipterist, on the occasion of his 70th birthday.

Walk., are in many respects peculiar indeed, they prove now to stand rather closely to the tribe Archipini of the Tortricinae. Therefore the Ceracini should be treated as a tribe, as Obraztsov (1949) already suggested (under the name of Ceraciini).

An unusual feature of the Ceracini is the smooth head, which they have in common with certain tropical Archipini, as e.g., *Zacorisca* and allies. To this character Meyrick attached great importance (1910). It is indeed remarkable that the species in possession of this feature all are brightly coloured diurnal insects; perhaps smooth heads have some connection with the diurnal life habits which is unknown at present.

The latest contribution to the knowledge of the present tribe is the description of the larval characters of *Eurydoxa advena* Fil. and *Cerace xanthocosma* Diak., both from Japan (Diakonoff, 1956, Yasuda, 1965).

Although in general the larval characters proved to be tortricine, some interesting minor points came to light. However, it should be stressed that the larval characters of the Tortricidae, relatively, have considerably less value for taxonomy than the adult characters have. Apparently the larva is much more subject to adaptations and secondary functional changes than other stages, depending on environment, biology etc. This statement is convincingly corroborated by the fact that the larval characters are of no use at present for the separation of two subfamilies: the Tortricinae and the Olethreutinae (Mackay, 1962: 7).

The chaetotaxy of the two above mentioned species reveals considerable differences in support of the validity of the genus *Eurydoxa* Fil., as against *Cerace* Walk., as is elaborated below, under the first mentioned genus. This chaetotaxy of the larval head shows that both *Cerace* and *Eurydoxa* have an affinity with the genus *Sparganothis* Hb., the angle between the lines connecting the bases of setae P1 and Adf 2 and P1 and P2, respectively, being obtuse. Earlier, I have expressed the view (Diakonoff, 1961) that this last genus should be incorporated in the Archipini rather than regarded as a representative of a separate tribe; in spite of the possession in *Sparganothis* of a structure in the hind wing, rather similar to the cubital pecten of the Olethreutinae. Therefore, Caracini seem to be nearest to Archipini for which speak, of course, all adult characters as well. But there are also differences, e.g., the setae D2 on the eight abdominal segment in Ceracini are as long as setae L1, besides, the setae D2 of that segment are closer together than D1.

Summing up, the larval characters support the concept of the Ceracini being a distinct tribe, close to the Archipini; as well as of *Eurydoxa* Fil. being a distinct genus, related to *Cerace* Walk.

Ceracini have never been collected in really large series, except the two Japanese species which are common pests and can be bred from larvae. Dr. W. Dierl, Munich Museum, told me about his following interesting experiences in Nepal: "Ceracini are indeed quite rare in Nepal. I have never seen more than we have collected[1]). They never come to light and I have always seen them flying in daytime in bright sunshine. During the (wet) monsoon these hours of sunshine are very rare. The Ceracini like to feed on flowers of Umbelliferae where they easily can be collected". However scanty these remarks are, they are about the only ones ever published on the life habits and behaviour of the Ceracini (perhaps except those in the Japanese language).

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[1]) Nine specimens (A.D.).

Here follow complementary remarks to my 1950 paper. The pages under the names pertain to that revision. Where necessary, lectotypes are disignated. Two new species and a neallotype are described.

Pentacitrotus quercivorus Diakonoff

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The complete text of the labels of the unique type specimen is as follows. "Holotype", "STEB Coll. L, 10.VII.02. Moths begin August .02, Coll. E. P. Enkling, Deobar, NE Himalaya, India, Quercus semicarpifolia" (written and printed). "Type, Pentacitrotus quercivorus A. Diakonoff, 1947". "BM genitalia slide No. 2695". "Walsingham Collection 1910-427" (written and printed) (BM).

Pentacitrotus vulneratus Butler

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Pentacitrotus aeneus Leech, 1890: 83 (Central China, ♂, error! Recte: Darjeeling, ♀ !) **Syn. nov.**

The holotype of *P. vulneratus* Butler has the following labels: "TYPE H.T."; "Darj."; "P. vulneratus Butler, type"; "Pentacitrotus vulneratus Butler, Ill. Lep. Het. B.M. 5, p. 35, pl. 86 '5 (1881). Type ♂ (figd.)", without abdomen (BM).

Additional material of *P. vulneratus* Btl.: India, Punjab, Murree, 7500 ft, June, 1918 (Dutt Coll.), 1 ♂, 2 ♀ (BM).

Sikkim, Katapahar (Gebauer), 1 ♂ (VM).

When describing the species "*Pentacitrotus aeneus*" Leech apparently made a mistake. His description of a surmised male specimen of "*aeneus*" from China, does not agree with the unique female specimen from that country, bearing the labels "Central China, Chang Yang, Hoope, VI.1888 (A. E. Pratt)", "Leech Collection 62352", but obviously is a description of a female of *P. vulneratus* Butler, from India.

In order to retain Leech's name, in 1950 I redescribed the female from Chang Yang under the name "*P. aeneus* Leech" but am now satisfied that this action is of no effect, as this Leech's name is simply a synonym of *P. vulneratus* Butler. The name "*Pentacitrotus aeneus* Diakonoff, 1950", is not available, being preoccupied by *Pentacitrotus aeneus* Leech, 1890.

As the unique female from Chang Yang represents a distinct and undescribed species, I propose for it the name: **Pentacitrotus leechi** spec. nov.

Pentacitrotus vulneratus var. **distinctus** Diakonoff

p. 181.

Lectotype, hereby designated, male, labelled thus: "Kulu Distr.", "Brit. Mus. 1932—454", "Cerace vulnerata Btl.", "Holotype, Pentacitrotus vulneratus var. distinctus A. Diakonoff, 1947". "Genitalia slide no. 1186" (BM).

Pentacitrotus vulneratus var. ♀ **congruens** Diakonoff

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The holotype, a female, bears the following labels: "Holotype", "India, Elwes 1901". "Walsingham Collection 1910—427", "Pentacitrotus vulneratus var. ♀ congruens Diak., det. W. G. Tremewan, 1962" (BM).

Pentacitrotus vulneratus vulneratus Butler

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Additional male from: Sikkim, Katapahar (Gebauer) (VM).

Eurydoxa Filipjev

Eurydoxa Filipjev, 1930: 373, figs. 2—3 (♀ type-species, *E. advena* Fil., by monotypy; ♀, Sutchan). — Diakonoff, 1950: 184 (*Ceraceopsis* syn.).

Ceraceopsis Matsumura, 1931: 1068 (type-species, *C. sapporensis* Mats., by monotypy; ♂, Sapporo, Japan).

The present genus is distinct from *Cerace* Walk. as I have elaborated in my 1950 revision. Superficially it may be separated by vein Ib in the fore wing being furcate over not more than ¼ of its length, as against over more than ¼, in *Cerace*. It is a minor difference, but in a group with so rigid a neuration as Ceracini, significant enough. Besides, the signum is a flat sclerotized scobinate sclerite in the wall of bursa about halfway its length; while in *Cerace* the signum is double-folded, with scobinations on the outer side, and is situated at the border of the ductus bursae and the corpus bursae.

The recent studies of larval characters, cited in the introduction to this paper and above, have shown that there is one more, unexpected but cardinal difference between *Eurydoxa advena* Fil. and *Cerace xanthocosma* Diak., to which genera Dr. Yasuda dedicated a comparative paper. The seta SD 2 on abdominal segments 1—8 is implanted on its own minute pinnaculum and not on a joined pinnaculum with SD 1, as in *Cerace*. Besides, all principal setae are upon normal pinnacula, while in *Cerace* these pinnacula are strongly elevated and sclerotized.

Eurydoxa advena Filipjev

Eurydoxa advena Filipjev, 1930, C. R. Acad. Sci. URSS (A): 374, figs. 1—3 (♀, neur.). — Diakonoff, 1950, Bull. Brit. Mus. Ent. 1 (2): 187. — Obraztsov, 1954, Tijdschr. Ent. 97 (3): 154 fig. 3 (neur.). — Kurentzov, 1956, Trans. Far-Eastern Branch Acad. Sci. USSR 3 (6): 237, figs. 1—6 (♀, neur.). — Issiki, 1957, Icon. Het. Jap. Col. Nat. 1: 82, pl. 14, fig. 430 (♀). — Okano, 1959, Icon. Ins. Jap. Col. Nat. Ed. 1: 263, pl. 176, figs. 10a, b (♂, ♀). — Oku, 1961, Coenonympha, Trans. Lep. Sci. Hokkaido (11): 190. — Diakonoff, 1964, Zool. Mededelingen 39: 59, figs. 1—3, pl. 9 (larva, pupa).

Ceraceopsis sapporensis Matsumura, 1931: 6000 Ill. Ins. Jap.: 1068, no. 2129 (♂); — 1932, Insecta Matsumurana 6: 199.

Eurydoxa sapporensis Diakonoff, 1950. Bull. Brit. Mus. Ent. 1 (2): 186, figs. 7, 12 (♂ genitalia, neur.). — Inoue, 1954, Check List Lep. Jap. 1: 90. — Uchida, 1956, Insecta Matsumurana 20 (3—4): 100, figs. 1, 2 (♂, ♀). — Issiki, 1957, Icon. Het. Jap. Col. Nat. 1: 82, pl. 14, fig. 431 (♂).

The above references are as adopted from Yasuda, 1965. This author had extensive material of both *E. advena* and *sapporensis* for comparison and came to the conclusion that they are conspecific, *sapporensis* being the male and a synonym of *advena*.

The most important larval characters of the species have already been cited above.

Additional material. China, Sechuan, "O — Er 26 mi N Li Fan", 1 ♀ (USNM).

Eurydoxa advena forma orbimaculata (Kurentsov), comb. nov.

Ceraceopsis advena orbimaculata Kurentsov 1956: 242.

This differs from the nominate form only by the median longitudinal row of pale yellow spots being a series of large spots, becoming smaller basad, while in the nominate form these spots are much smaller. The description is based on a single specimen and its validity is therefore somewhat problematic.

Eurydoxa tetrakore (Wileman & Stringer), comb. nov.
Pl. 1

Eucosma tetrakore Wileman & Stringer, 1929: 66.

This obscure species escaped my attention earlier. Dr. Obraztsov came across its type in the collection of the British Museum and detected its true identity (verbal communication).

The holotype (and the only specimen) is labelled as follows: "Arizan, Formosa, 7300 ft., 24.VII.1908 (A. E. Wileman)". Genit. slide no. 113 (BM).

The rather damaged specimen may be briefly described thus. Blackish-purple, with an obliquely oval white spot beyond upper angle of cell, encircled by reddish-orange suffusion, widest above and almost reaching 2/3 of costa; a large rounded patch on upper half of base of wing and an oblique, wedge-shaped transverse moderate marking on 1/3 of costa, similarly reddish-orange, the latter hardly reaching cell; these markings with a narrow edge of ground colour, beyond this indistinctly edged with bluish-metallic lines. Cilia purplish.

Hind wing fuscous-purple, with an oblong-oval white subcostal spot.

Male genitalia. Somewhat resembling those of *Pentacitrotus vulneratus* Btl. Tegumen moderate, narrowed. Uncus gradually narrowed, pointed. Socius rather large, broadly oval. Gnathos, a long hook, longer than socii. Valva suboval, moderately and gradually narrowed, cucullus with a somewhat curved longitudinal and supramarginal patch of bristles, becoming dark and dense at the top. Vinculum strong. Aedeagus long, curved, with a large and thickened coecum penis.

The holotype is in the British Museum. The species apparently is allied with *Eurydoxa rhodopa* Diak., from China, described after a single female.

Eurydoxa ussuriensis (Kurentsov), comb. nov.

Ceraceopsis ussuriensis Kurentsov, 1956: 241, figs. 1, 3. — Yasuda, 1965: 3.

This species, described after a single male specimen, is extremely close to *E. advena* Fil. I did not study the type specimen which probably is in the museum of the Far Eastern Division of the Academy of Sciences of the USSR in Vladivostok. The figure shows a much coarser pattern of longitudinal dotting and a larger, pale (orange?) longitudinal streak in the hind wing than in *advena* and also a more conspicuous row of subdorsal (orange) spots.

The genitalia have not been described.

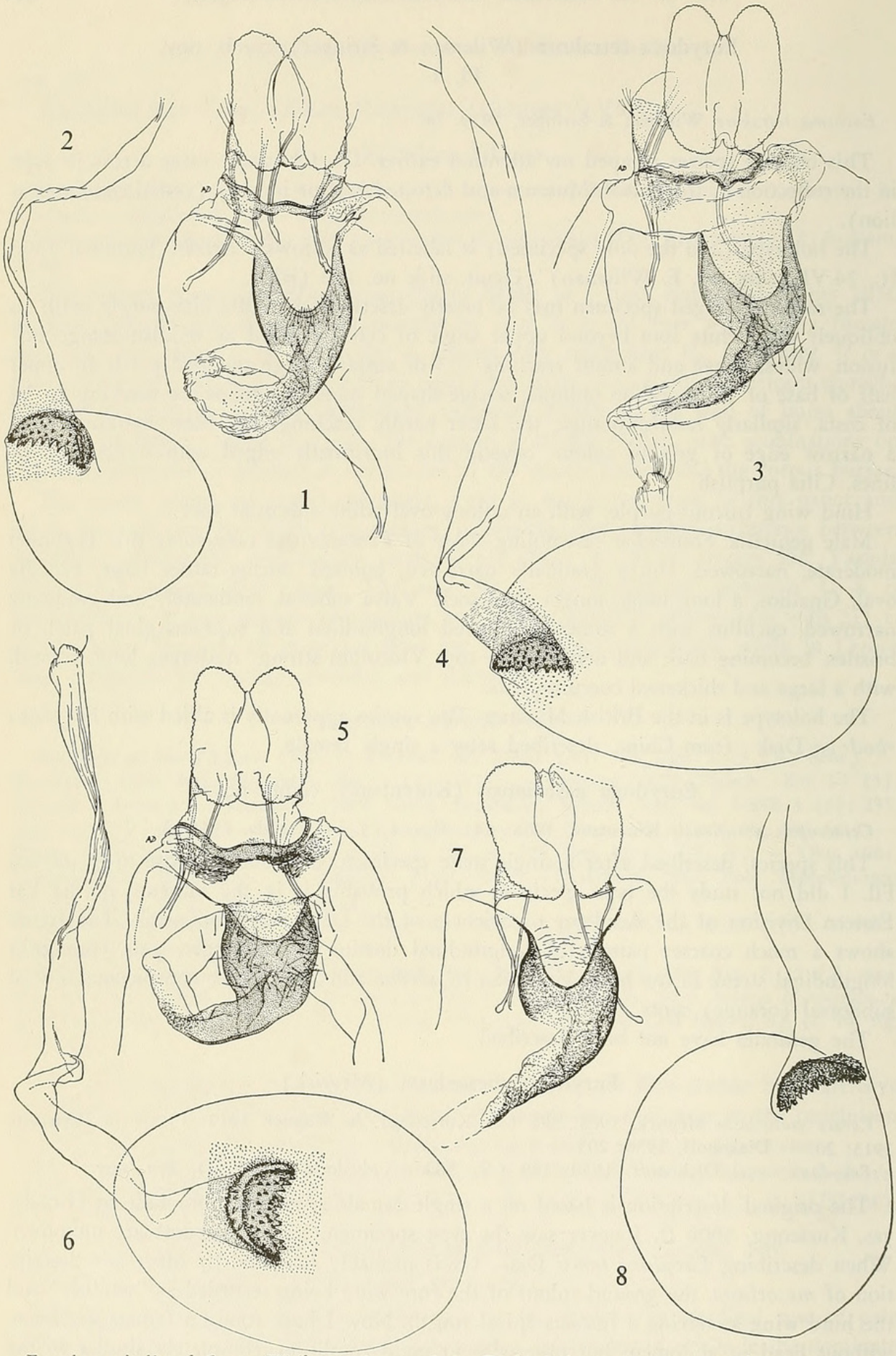
Eurydoxa mesoclasta (Meyrick)

Cerace mesoclasta Meyrick, 1908: 395 (♀, Kurseong). *in* Wagner. 1912: 15. — *in* Wytsman, 1913: 20. — Diakonoff, 1950: 203.

Eurydoxa tamsi Diakonoff, 1950: 189 (♀, Sikkim, Phedong =Padong). **Syn. nov.**

The original description is based on a single female specimen from Eastern Himalayas, Kurseong, 5000 ft. I never saw the type specimen, its whereabouts are unknown. When describing *Eurydoxa tamsi* Diak. I was probably confused by Meyrick's description of *mesoclasta,* the ground colour of the fore wing being recorded as "whitish" and the hind wing as having a fuscous apical fourth. Now I have found a female specimen, without head or abdomen, but otherwise in good condition, completely similar to the type of *E. tamsi,* but with the label "*Cerace mesoclasta* Meyrick det.".

It appears that Meyrick's description of the unknown holotype from Himalaya, except



Female genitalia of *Cerace* Walk. species, 1, *C. ios* Diak., holotype; 2, the same, bursa capulatrix; 3, *C. cyanopyga* Diak., neallotype; 4, the same, bursa copulatrix; 5, *C. malayana* spec. nov., holotype; 6, the same, bursa copulatrix; 7. *C. lemeepauli* Lemée, holotype; 8, the same, bursa copulatrix

for the ground colour, agrees sufficiently well with the above mentioned specimen — and so, with my "*tamsi*". Therefore I am satisfied that they are conspecific.

The present female specimen is from Sikkim, Katapahar (Gebauer) (VM). The ground colour of the hind wing and the markings of the fore wing are pure silvery-white.

Cerace tetraonis Butler

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Lectotype of *C. tetraonis,* hereby designated: male, bearing the following labels: "Syntype", Murree, 86-54(9), 28-8.85"; "Cerace tetraonis Butl., Proc. Zool. Soc. Lond., 1886—394, Murree, Yerbunj. Type 1/1 descr."

The male genitalia of the specimen from Simla, illustrated by me, my nr. 579D, are registered under nr. BM 2726.

Interesting additional material of this species is labelled thus: "Pakistan, Murree, Kuldana, leaf stitcher on *Quercus dilatata,* IV. '67", 1 ♂, 1 ♀. Apparently *Quercus* species are favorite food plants of more than one species of *Cerace.*

Also from China, West Tien-Mu-Shan, 1600 m, Province Chekiang 10-31.IX.1932 (H. Höne), 12 ♂ (SM).

Cerace tetraonis archimedis Diakonoff

p. 193.

Lectotype, hereby designated, a male, labelled as follows. "Holotype", "Cherra Punji, Khasis, 1895, Nat. (Doncaster)", "Walsingham Collection BM 1910—427"; "Type, Cerace tetraonis archimedis, A. Diakonoff, 1947"; Genitalia slide No. 2694.

Cerace xanthocosma Diakonoff

p. 197. — Yasuda, 1969: 95, 206, pl. 46 figs. 184 (list of references as follows:) — Inoue, 1954, Check List Lep. Jap. 1: 90. — Obraztsov, 1955, Tijdschr. Ent. 98 (3): 199. — Issiki, 1957, Icon. Het. Jap. Col. Nat. 1: 81, pl. 14, figs 428, 429 (♂, ♀). — Okano, 1959, Icon. Ins. Jap. Col. Nat. Ed. 1: 263, pl. 176, figs. 11a, b (♂, ♀).

Cerace onustana Miyake (nec Walker), 1911, Dôbutsugaku Zasshi 23: 302, fig. c. — Nagano (nec Walker), 1914, The Insect World 18 (197): 2, pl. 1 (♂, ♀, neur, larva, pupa); ibid. 18 (203): 301 (host plants). — Issiki (nec Walker), 1922, Dôbutsugaku Zasshi 34: 283. — Matsumura, 1931, 6000 Ill. Ins. Jap.: 1067, no. 2127 (♀). — Wisherd & Murayama, 1929: 73, pl. 16 fig. 6.

Cerace guttana Issiki (nec Felder), 1932, Icon. Ins. Jap.: 1449, fig. 2867 (♀). — Hirose (nec Felder), 1936, The Insect World 40 (471): 419 (host plants).

Lectotype, hereby designated, male, labelled as follows. "Holotype"; "Brit. Mus. genitalia slide ♂ No. 2699" my no. 585D, "Japan, Pryer, 1886, 70822", "Holotype, Cerace xanthocosma A. Diakonoff, 1947"; "Walsingham Coll. BM 1910—427".

The corresponding female syntype is labelled thus: "Allotype", "Japan, Pryer, 1886, 70829" and "Brit. Mus. genitalia slide ♀ No. 2705".

More material of this species has been added since 1950, labelled thus: "Nara, 19.6.19 18/6, Honshyu Yamato, S. Moriuti, bred from *Picris japonica*" (BM).

Recently Yasuda (1969) published for the first time a coloured figure of the larva. A description of the setal pattern of the larva appeared earlier (Yasuda, 1965). This description briefly amounts to the following.

Spinneret obtusely pointed; head: lines connecting bases of P1 with Adf 2 and P1 with P2, respectively form an obtuse angle. All larger setae of the body, viz. D1 and

D2 and SD1 and SD2 upon all segments, and also L1 + L2 and L3 upon the thorax are implanted on thick, elevated prinnacula. SD2 on joined pinnaculum with SD1; D1 upon abdominal segments 9 on its own pinnaculum. Anal segments with setae D2 as long as setae L1; setae D2 of the abdominal segments 8 are closer together than setae D1.

It should be pointed out that in Yasuda's fig. 2 the connotations of the setae D1 and D2 upon the 9th abdominal segment have been confounded: D2 is actually D1 etc.

As host plants are recorded Jezo spruce (*Picea jezoensis* Carr.) and Veitch fir (*Abies Veitchii* Lindl.); and also *Picris japonica.*

Additional material: "1874, Japan, Cerace guttana R. & F., Novara 139, f. 51", 1 ♀. "Japan", 1 ♂. Mt. Kasuga near Nara, June 18, 1919 (I. Sugitani), 2 ♂ (VM).

Japan, Honshu, Nara, 27. 29.V.8.VI.1964 em. Bred from *Picris japonica* D. Don., 3 ♂ 1 ♀ (SM).

Cerace onustana Walker

p. 204.

Cerace onustana Walker, 1863: 423. — Moore, 1867: 668. — Cotes & Swinhoe, 1889: 699, no. 4770. — Meyrick, *in* Wagner, 1912b: 15. — *in* Wytsman, 1913: 20. —? Matsumura, 1931: 1067 fig. 2127 (♀). — Diakonoff, 1941a: 30, pl. 3 fig. 3.

Cerace guttana Felder & Rogenhofer, 1875: pl. 139 fig. 51 (♀). — Cotes & Swinhoe, 1889: 699, no. 4769. — Walsingham *in* Swinhoe, 1900: 565. — Meyrick, *in* Wagner, 1912b: 15. — *in* Wytsman, 1913: 20. — Diakonoff, 1939: 130 (*guttana* syn.) — 1941a: 29. **Syn. nov.**

Cerace guttana obscura Diakonoff, 1950: 202. **Syn. nov.**

The holotype of *C. onustana* Walk. is labelled as follows. "Holot.", "Nepal", "Hardwicke Bequest", "Cerace onustana Wkr. Cat. Lep. B. M. 28: 423 (1863) Nepal (Hardwicke). Type ♂ (1/1) descr." (BM).

Hind wing light yellow, with black spots as in the female of *C. guttana* and with a broad fuscous-black marginal suffusion, extending from apex to before tornus, gradually attenuated downwards, at apex reaching over one fifth of the wing breadth.

The study of the available material and of the above references convinced me of the correctness of my previously abandoned statement of 1939, that "*C. guttana* Felder" is only the female of *C. onustana* Walker. Neither could I find any males of *guttana,* nor any differences between the supposed females of these two "species". Therefore I again propose to suppress the name *Cerace guttana* Felder & Rogenhofer, 1875, as a synonym, in favour of the name *Cerace onustana* Walker, 1863.

The final check of this problem pertains of the following material: *Cerace guttana* F. & R.: 1 ♂, "Khasis, Sept. 1894, Nat. Coll.", genit. slide 7724; 1 ♀, "Himalayas, 24" "E. Meyrick det., in Meyrick Coll. 5/5", genit slide 7725. *Cerace onustana* Walk.: 1 ♂, "N. India", "Norris Coll. 73—41", genit. slide 7726; 1 ♀, "Sikkim, chasseurs indigènes (R. P. Bretandeau), 1894", genit. slide 7727. (All in the BM).

Further additional material. "Darjeeling, 1893 (Mövis)", 1 ♀. "NO Afghanistan, Petze-Tal, W. v. Schari-Sarai, 2100 m (Kazy & Vartian)", 1 ♀ (VM).

Further additional specimens have the following labels. "Gopaldhara, Darjeeling, 3440 —5800' (H. Stevens) 18.IX.16". "Himalaya". "Kulu Distr.", "Rothschild Bequest" (BM).

The holotype of *C. guttana* Felder & Rogenhofer, 1875, has the following labels: "Holotype, "Novara PXXXIX f. 51, Cerace guttana, Silhet, ♀, n.f."; "Felder Coll., Rothschild 1913—86"; "Cerace onustana Walk. affin."; "Felder's Type". This is also the type of my subspecies *"obscura"* which name has to be suppressed.

The complete collection of labels of the holotype of *"Cerace onustana obscura"* Diakonoff, 1950 : 202, reads thus „Holotype", "Bengal (Russell)", "Moore Coll. 94—106". "Genitalia slide no. 20 ♀" (BM).

There is a series of females of "*C. guttana* Feld." in the British Museum, but not a single male.

Cerace cyanopyga Diakonoff
(Fig. 3—4)

p. 205.

Three additional specimens of this elegant species were found among duplicates in the collection of the British Museum; two males with labels identical to that of the holotype: Burma, Malmyo, 11.V.1901 (H. J. W. Barrow), and, a third specimen, a female, labelled "Maymyo, 3500', 7.7.1934 (W. C. Carrott). which is described as neallotype, genitalia slide 7722.

♀, neallotype, 59 mm. Head as in male, thorax black, tegulae with a broad white edge, top of thorax with three white dots. Abdomen fuscous-orange, without black margins.

Fore wing of the characteristic *Cerace* shape, with apex notched. Colouring and markings similar to those in the male, but all white markings larger, strigulae thicker than in male. Costal transverse streaks more numerous and thicker, about 17 of them, some irregularly furcate below; crimson median area with one upper row of white dots along posterior half and two entire series, upper from before base, lower from base, emitting two branches, at $\frac{1}{3}$ and $\frac{2}{3}$ respectively, which run obliquely through dark dorsal part of wing; this dark part containing four horizontal series of dots; first of these entire, divided posteriorly into two rows, second: half as long, third: not quite reaching tornus, fourth: entire and marginal; orange terminal spot as in male, but paler; terminal spots and cilia similar.

Hind wing bright orange, unicolored; tornal half of wing with about five series of inequal round black dots, gradually becoming larger posteriorly, first of these rows formed of four slender transverse strigulae on dorsum, submarginal; apical $^2/_5$ of wing with three transverse confluent rows of spots, more or less parallel to wing edge in left, straight in right wing, posterior of these broader, its median spot largest; two small dots before apex. Cilia (damaged) orange, black around apex, black-barred along upper part of termen.

Female genitalia. 8th sternite slightly sclerotized. 7th sternite with a large triangular excision of upper edge extending over the whole breadth of segment. Ostium and colliculum sclerotized, ostium broad, edge rather shallowly emarginate; colliculum turned to the left, broad at base, about as long as colliculum is high; signum of moderate size, less wide than ostium, teeth moderate.

The neallotype can be recognized at once by the bright orange ground colour of the hind wings.

Cerace ios Diakonoff
(Fig. 1—2)

p. 207.

The holotype, a female, from "North East Borneo, Mt. Kina Balu", "Coll. Staud", is preserved in the Berlin Museum. To my surprise a second, identical, female specimen with a printed label: "Kinabalu, N. Borneo" and additional labels: "Rothschild Bequest, BM 1939—1" and "Cerace ios Diakonoff, det. W. Tremewan", was present in the British Museum collection.

At the time of the original description the genitalia of the female had not been studied. They have been dissected and studied now (slide no. 7721, Berlin Museum), and may be described as follows. Seventh sternite moderately excised. Ostium wide, sclerotized, more erected vertically than in, e.g., *C. onustana,* sides more gradually curved, consequently. Colliculum shorter than ostium is high. Signum as in *onustana,* but relatively smaller.

Cerace stipatana birmensis Diakonoff

p. 210.

A statement omitted from the original description is that the holotype is a male, and the allotype a female, consequently. The genitalia slide of the holotype is 589D ♂ = BM 2734. The complete labels of the holo- and allotype are: "Rubi Mines District, Kosemba, 1922", my label, "Cerace stipatana birmensis Diakonoff, 1947", and "Archbold Coll. B.M. 1926—391".

A new record of this subspecies is a male, labelled "Burma, Zacher", (SM) (Diakonoff, in press). Another specimen, a female from the same museum, is only labelled: "Burmah".

Cerace stipatana stipatana Walker

p. 209, 211.

Cerace stipatana clara Diakonoff, 1950, p. 211. Syn. nov.

Lectotype of *C. stipatana stipatana* Walker, 1863, hereby selected, a male, labelled: "India, Silhet." (BM).

I am satisfied that my subspecies *C. s. clara* should be suppressed. It is so variable, as to the brightness of the colouring of the huid wing and the exact shape of the anterior edge of the black marginal fascia, that the extremes cannot be satisfactorily discriminated from the nominate form.

Additional material: "Assam, R. Gunther don.", 1 ♀ (VM).

"Khasia Hills", 1 ♂, 1 ♀, "Shaowu, Fukien, 500 m, 30.X.1937 (J. Klapperich), 1 ♀ (GAM).

Nepal, Gorka, Chepe Tor, 1300 m, 7.V-10.VI1968 (Urkien), 2 ♀. "Himalaya", 1 ♀. Mokanshan, Prov. Chekiang, 16.VI.1930 (H. Höne), 1 ♀. (SM).

Sikkim (Gutmaur), 1 ♀ (SMF).

Cerace stipatana formosana Diakonoff

p. 211.

Lectotype, hereby designated, a male, labelled "Koshun, Formosa", "Swinhoe Coll. Brit. Mus. 1926—239", "Type ♀, Cerace stipatana formosana A. Diakonoff, 1947" (BM.)

A second specimen from the same locality has been found in the collection of the British Museum.

Cerace stipatana exul Diakonoff

p. 212.

The four specimens available bear the same locality and date labels; only the holotype, male and the allotype, female, have been labelled with type labels by me in 1947.

Additional material. A small male, completely similar to the holotype: "Kwang tzeh, Fukien, 18.11" (GAM).

Cerace lemeepauli Lemée
(Fig. 7—8)

Cerace Lemée-Pauli Lemée, 1950: 61 (♀, Haut Tonkin).

The female holotype, 51 mm, is labelled thus: "Haute Tonkin, Backan", "Type" (red label), "Cerase Lemée-Pauli, Backan" (sic). Genitalia slide 8061.

Female genitalia. Ostium + colliculum considerably sclerotized, upper part of ostium distinctly constricted, forming a short "neck" with small horizontal folds of the lamella postvaginalis and with far projecting narrow lateral rims; frontal excision of ostium rather small and narrow-subtriangular. Colliculum gradually narrowed, almost as long as ostium is high. Signum strong, dark, with rather inequal teeth.

The species is exactly similar to *Cerace stipatana stipatana* Walk. by the shape, the colouring and the markings. However, the female genitalia are distinct so that I prefer to maintain its specific status.

Cerace malayana spec. nov.
(Fig. 5—6)

♀ 44.5 mm. (Head missing). Thorax black with white spots (rubbed). Abdomen pale yellow. Fore wing oblong-suboval, long and narrow (7x20), costa strongly arched along the anterior fourth, straight in middle, less than posterior fourth gently curved, apex rectangularly notched, strongly prominent and rounded below notch, termen gently curved, strongly oblique. Black on costal half, purplish-black turning black-ferruginous on dorsal half, a suffused rather narrow median ferruginous streak in upper half of cell from well beyond base to top of wing, just above vein 5 and along vein 6; prominent part of termen bright orange, this colour slightly extending basad along end of vein 6; the entire wing densely covered with interneural rows of small more or less interconnected round white dots, costa transversely streaked with white; these streaks anteriorly reaching to upper edge of cell, posteriorly gradually becoming shorter. Cilia (imperfect) black, barred with white.

Hind wing white faintly touched with yellowish, sparsely strewn with black scales, less than apical fourth purplish-black, edge rather well-defined, but irregular, tolerably straight, except a moderate excision in middle; this edge preceded by two round spots, below costa and above dorsum, respectively, and with a series of greyish, transversely oblong spots along costa to base (being black spots of underside showing through). Cilia (imperfect) black barred with white.

Female genitalia. Ostium + colliculum short and broad, upper edge in front only shallowly excised, colliculum less than height of ostium. Signum moderate, smaller than in *C. stipatana.*

Malay States, Bukit Kutu, 3300 ft (A. R. Sanderson), 1 ♀, holotype, genit. slide 7723.

A rather slender species with very narrow fore wings, otherwise very similar to *C. stipatana* Walk., where width: length ratio of the fore wing in the female is about 9½: 25, but with less extended black colouring of the termen of hind wing, and with a distinctly shaped ostium.

This is the southernmost locality in the area of distribution of the genus *Cerace.*

Cerace sardias Meyrick

p. 212. — Clarke, 1958: 80, pl. 40 figs 2—26 (lectotype designated, ♀ genit., wings, figured). "Khasi Hills, Assam. CS. 05" slide 6827 BM.

Except the male in BM, cited in my paper, two males have been discovered in the British Museum, labelled as follows: "Golaghat, Naga Hills, Assam", nos. 40222 and 40223, respectively. One of these males has a black anal tuft, the other, also black but, pale yellow above.

Bathypluta triphaenella var. nox (Diakonoff) status nov.

Cerace triphaenella nox Diakonoff, 1941b: 378.

This is a remarkable melanism; it should be regarded a a variety, not as a subspecies: the genitalia are similar, as is the locality, while the superficial differences with the nominate species are only those of the colouring.

Bathypluta triphaenella var. melanoptra (Diakonoff) status nov.

Cerace triphaenella melanoptera Diakonoff, 1941b: 378.

Lectotype, hereby designated: the unique male syntype. Also this is a variety and not a subspecies, for the same reasons as above.

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