kläglich aus, denn 30 davon stammten aus Columbien, wo nur die Stammform vaninka beheimatet sein soll. Ein ganz ähnliches, negatives Ergebnis hatte die Nachprüfung der neuen Megahira corinna lazulina Fruhst. Bei den neuen Fruhstorferschen Catagramma-Formen scheint die Benennung nicht viel berechtigter zu sein: ich habe (mit geringerem Material) in gleicher Weise nur codomannus nachgeprüft, wovon übrigens Röber aus meiner Kollektion aus Ost-Columbien Stücke als typisch ansieht, und ein solches auch im „Seitz" abbildet. Ganz unrichtig ist die Vermutung, daß diese neue codomannus-Form in Muzo vorkomme, da diese (sowie auch peristera, kolyma, aegina und ennomia) nur dem von Brasilien heraufreichenden östlichen Tieflande angehören, während links von der Ostcordillere, also im Magdalenen- und Cauca-Tale sowie am Rio Dagua ganz andere Formen (mionina, brome, texa, denina und atacama) fliegen, und nur pitheas beiden Gebieten gemeinsam ist.

Herr Fruhstorfer möge die vorstehenden Zeilen keineswegs als eine absprechende Kritik seiner Neubeschreibungen auffassen; ich weiß, wie so gut wohl kein anderer ihn als Sammler und Autor besonders hinsichtlich der Fauna Indiens zu schätzen und senke in Ergebung mein Netz vor seinem Urteile, glaube aber bestimmt, daß beim Einteilen der südamerikanischen Tagfalter etwas „Bremsen" bei Neubenennungen sehr am Platze wäre.

57.89 Anaea

Anaea chaeronea corita Fruhst.

Entgegnung von *H. Fruhstorfer*.

Anaea chaeronea corita Fruhst. wird sich trotz des großen Fasslschen bolivianischen Materials stets als Lokalrasse der *Anaea philumena* Doubl. aus Bolivien erweisen — weil es kaum einen Tagfalter gibt, der an der atlantischen Küste absolut identisch mit seinen Vikarianten der pacifischen Küste vorkäme. Der Name *corita* darf sich somit neben *A. philumena* sehen lassen, ebenso wie die Bezeichnung „peruviana Strand". Was nun das Verhältnis der columbischen *Catagrammen* zu jenen von Bolivien angeht, so gilt für *Catagrammen* dasselbe Gesetz, wie für pacifische und atlantische Rassen einer Gesamtart. Kein Tagfalter von Columbien wird sich genau mit seinen Nebenrassen von Bolivien decken, selbst so resistente Arten wie *Aganisthos odius* und *Gynaecia dirce* nicht ausgenommen, welche, wenn auch nur minimale, so doch merkliche geographische Differenzen aufweisen.

Aus den Anmerkungen des Herrn Fassl geht übrigens zur Evidenz hervor, daß er nicht scharf zwischen Species und Unterart trennt. Mir war es nur in ganz seltenen Fällen vergönnt, neue Arten aufzustellen — wenn ich auch weit über 4000 geographische Rassen schaffen konnte. Mein Bestreben, namentlich im Seitz, war immer darauf gerichtet, das Bestehende kritisch zu sichten und die Degradierung so vieler „Arten" hat mir großen Unwillen und Vorwürfe eingebracht. Aber die moderne Methode kennt keine Rücksicht auf das Bestehende — und jede neu erscheinende Monographie, soweit sie auf anatomischer Grundlage beruht, vermindert die Artenzahl — während fast jedes Reiseergebnis die Flut der geographischen Rassen anschwellen wird. Herr Fassl selbst hat mit seiner Anmerkung beispielsweise auch sofort die Anaeen-Artenserie vermindern helfen. Nachdem ich *A. indigotica* und *A. xenica* zu Fall brachte, wird jetzt durch Herrn Fassls Mitwirkung auch *A. chaeronea* und mit Recht ihres Specieswertes beraubt.

Die brasilianische *corita* ist demnach an *philumena* und nicht an *chaeronea* anzureihen. Wir haben somit in Zukunft zu beachten:

A. philumena indigotica Salvin, Zentralamerika.
A. philumena xenica Bates, Guatemala.
A. philumena chaeronea Feld., Columbien.
A. philumena peruviana Strand, Peru.
A. philumena philumena Doubl., Bolivien.
A. philumena leuctra Felder, Oberer Amazonas.
A. philumena corita Frhst., Espiritu Santo.

so daß statt 3 Arten des Kirbyschen Katalogs nur eine, aber statt 4 Rassen desselben Katalogs jetzt 7 Ortsformen zu registrieren bleiben.

Daß die Type von *C. codomannus* etwa aus Ostcolumbien stammt, ist ganz ausgeschlossen, weil zu Fabricius' Zeiten von dort keine Schmetterlinge nach Europa gelangt sind. Die Heimat der Type von Fabricius dürfte vielmehr in Brasilien, sehr wahrscheinlich in Rio de Janeiro zu suchen sein. Es ist deshalb ganz gleichgültig, ob die columbische *codomannus*-Form in der Umgebung von Muzo oder in Ostcolumbien gefunden wurde. Neu ist die columbische *codomannus*-Rasse auf alle Fälle. Daß aber *codomannus* nicht bei Muzo fliegt, sondern daß deren Vorkommen auf die Amazonasseite der Cordilleren beschränkt ist, erscheint sehr natürlich. Ueber derlei Fragen kann selbstverständlich eine sichere Auskunft nur ein Kenner des Landes wie Herr Fassl geben.

Auf weniger sicherem Boden aber steht Herr Fassl mit seiner tapferen Verteidigung des Artwerts der beschriebenen Anaeen. Da haben wir nur ein zuverlässiges Kriterium — die Anatomie. Die von mir auf ihre Genitalien einstweilen untersuchten „Arten" aber lassen bereits jetzt einen großen Zusammenbruch erwarten.

Welche Ueberraschungen die vergleichende Morphologie der Klammerorgane zeitigt, wird schon die nächste Zeit lehren. Herr Fassl dürfte die wie mit Maschinengewehren weggeschossenen dichten Reihen indischer *Papilio* und *Delias* fallen sehen. Und dasselbe Schicksal harrt auch der Anaeen.

57.82 Tortrix: 16.5

Der Ahornwickler[1]).

(Tortrix forskaleana L.)

(Mit 9 Figuren im Texte.)

Mit Genehmigung des Verfassers aus dem Schwedischen übersetzt von Fachlehrer *Mitterberger* in Steyr, O.-Oest.

(Schluß.)

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Summary.

Review of the literature. — The earliest records of life history of *T. forskaleana* L. are found in Bouchés paper (**7**. s. 112—113) but they are apparently wrong, because Wilkinsons (**3**. p. 154—155) account of the habits of the larva and description of the larva and pupa, which I can verify, is quite different. W. found the larva in the folded leaves of the Maple in June. Heinemann (**4**. p. 28) also gives maple as its food-plant. Boisduval (**5**. p. 540), on the other hand, states that he found the larva on roses, together with that of *T. Bergmanniana* and that it often happened to him that he bred one species instead of the other; he further states that he found a second generation in September (contrary to Wilkinson who only records one generation). He describes the larva only by comparing it with that of *T. Bergmanniana* and states that it is smaller and more green than the latter, which, according to him, has a black head, black thoracic legs and a darkbrown prothoracic shield, divided into two by a longitudinal, median line. This statement seems to imply that the larva of *T. forskaleana* according to Boisduval also has black head and thoracic legs and dark brown prothoracic shield; this is, however, not in accordance with the truth, as in the latter larva, as already Wilkinson stated, these parts are of the same colour as the rest of the body. We must therefore assume either that B. has made a mistake and that the larva he found on roses is not that of *T. forskaleana* or that his silence with regards to other characteristics than size and colour must not be interpreted in that way that in other respects the larva agrees with that of *T. Bergmanniana*, or that the larva is dimorphic, dependent on the two different foodplants.

For my one part I am inclined to believe that Boisduvals larva is not that of *T. forskaleana*, as it seems almost incredible that he should not have mentioned the striking difference which exists between the two larvae as regards the colour of the head-capsule, the thoracic legs and the prothoracic shield. However this may be, it is certain that all the following German authors, utterly disregarding Wilkinsons description, state that the larva of *T. forskaleana* has a brown head and prothoracic shield, a statement which was re-introduced in the literature by Nördlinger (**6**. p. 431) in his book, which appeared in 1869, two years after Boisduvals work, and probably arose partly through misinterpreting of B.s statement quoted above. Kaltenbach (**8**. p. 89) quotes Heinemanns statement but adds without giving any references that the larva feeds on the leaves of *Rosa*. Hartmann (**9**. p. 172) queries the latter statement, Taschenberg (**10**. p. 178) gives essentially the same description of the larva as Nördlinger but adds that the thoracic legs are black and the prothoracic shield divided into two by a longitudinal line; it seems to me very significant that these two characteristics are the same which Boisduval records for *T. Bergmanniana* which author he quotes in several other instances. Holmgren's (**11**. p. 231—232) description is to all appearance a mere translation from Taschenberg.

Wallengren (**12**. p. 27) on the other hand gives a correct description of the larva, but gives both maple and rose as foodplants. Sorhagen (**13**. p. 69) quotes Bouché as regards its occurence on *Rosa centifolia*. v. Binnenthal (**14**. p. 261—262) quotes verbatim Taschenberg, with the addition that the eggs hybernate; the same is the case with Sorauer (**15**. p. 299) who adds that the larva lives also in the fruits of the maple.

It is only in the last work, Kennels „Die palaearktischen Tortriciden" (**16**. p. 170) that we find a correct description of the larva, together with the statement that the young larva lives in the blossoms of the maple.

From this sinopsis of the literature it is apparent that of all the authors who mention this species after Wilkinson only two, Wallengren and

Kennel give correct descriptions of the larva; the others quote the incorrect description which Bouché introduced in the literature; it follows also that no authors except Wilkinson appear to have known the larva by autopsy. It may also, in the light of the facts now revealed, be doubted wether Boisduvals and Bouchés statements as to *Rosa* being its foodplant can be relied upon; personally I am inclined to disregard them.

Life history. — In the neighbourhood of Stockholm the moth makes its appearance in July. The larvae were observed for the first time the 25th of May; they pupated about the 10th of June and the first moths appeared the 8th of July. No 2nd generation has been observed during the three summers (1910, 1911, 1912) when I have had an opportunity of following its development.

As mentioned above we find records that the eggs hybernate (but not where they are laid!) and that the larva lives also in the blossoms and in the fruits of the maple. My efforts to verify these statements have failed entirely and the evidence I have been able to bring together seems to show that these statements are wrong.

A couple of maples, on which in 1910 and 1911 a considerable number of halfgrown larvae had been found in the end of May, were thoroughly examined in the spring 1912; no eggs could be found on the buds or twigs nor any larvae in the blossoms, but nevertheless in the end of May halfgrown larvae suddenly appeared on the leaves. The only explanation of this seems to be that the eggs do not hybernate but hatch in the summer and that the young larvae hybernate. On renewed examination of the maples in the middle of August a couple of small tortricid-larvae were discovered on fruits with 3 „keys" where they had spun a small tube of silk in the angle between the keys; they fed on the keys, but unfortunately I did not succeeded in rearing them. They resembled in colour completely the halfgrown larvae which appear in the end of May, and had, moreover, a similar black spot at the side of the head capsule, close to its base. Although the evidence is not yet conclusive, it seems to indicate that the life-history of the species has the following course:

The eggs, laid probably on the stalks or on the keys, by moths appearing in July, hatch in the beginning of August and the larvae feed on the keys until autumn when they hybernate somewhere until the middle of May the following year, when they fold the leaves of the maple together like a cornet. When folding a leaf together the larva employs a certain method, which is closely adapted to the structure of the leaf. It starts by eating small holes in the leaf arranged in a narrow area extending radially from the base of the leaf either between the 3rd and 4th or between the 4th and 5th nervule. The holes are of two sizes (Fig. 1) very small ones which hardly penetrate the leaf and larger ones which penetrate the same; the latter seem to be the result of the feeding, but the smaller ones seem to be made purposely to weaken the resistance of the leaf against the folding operation.

By this area the leaf becomes divided into two portions one of which is about twice as large as the other. On the weakened portion the larva constructs a fold by spinning threads across it on the upper side, whereon the back of the fold is fastened to the larger portion of the leaf. At the same time it bites through the nervules at the base and the spiral folding up of the leaf is successively achieved.

When the cornet is ready, its cover consists of the upper side of the larger portion of the leaf and the folding up of the leaf results in the curving downwards of the cornet so as to form an almost right angle with the stalk of the leaf.

In the centre of this cornet the larva lives in a loosely spun silken tube and devores great parts of the leaf (Fig. 2); to all appearance it never moves from one leaf to another, since no empty cornets could be found until it pupated.

The pupal chamber is, as already Wilkinson observed, built by folding a tip of a leaf downwards or upwards and fastening its edges to it; the bottom along the nervule is clothed by transversal threads as far as to the top of the folded portion, the edges of which are not fastened to the leaf in the terminal $^1/_3$, thus leaving an opening through which the pupa is able to force its way out.

Description of the larva. — For the description of the larva we refer to Figs. 3—8. The head (Fig. 2) is characterised through the presence of a pair of blackish spots at the sides, at the place where a small incision indicates the border between the ventral and dorsal side. Labrum (Fig. 4) in the bottom of the anterior incision with a pair of rounded, serrated lobes, 6 pairs of hairs on the upper side and 3 pairs of curved bristles at the lower side. Antenna (Fig. 6) 4- jointed. Mandibles (Fig. 5) with 5 teeth. Maxillae (Fig. 7) with 3- jointed palpi, the basal joint of which is very short, ringshaped. Labium (Fig. 8) strongly developed, conical and as broad at the base as it is long, with a blackish arch running across from the hind angles; palpi 2-jointed.

Description of the pupa. — Length 7 mm; colour light brown. On the dorsum of the abdominal segments transverse rows of small spines, two on each segment except on the 1th, where they are missing and on the 2nd where there is only one posterior row; in the anterior row the spines are not so densely placed and each row is divided into portions, one median consisting of 12—14 spines, separated by a space equalling about the distance between 3 spines from a lateral portion of about 4 spines the exterior one of which is placed on a level with the spiracles. In the posterior row the spines are densely set, the distance between them being only ½ of that of the anterior row and the spines themselves are smaller, each row consisting of about 32 spines, but their number decreases successively towards the posterior end so that on the 8th segment there are only 20 spines. The anal segment is delineated in Fig. 9.