Het denkbeeld van een aandrijven van het reeds door de larven bewoonde hout via Rijn, IJsel en IJselmeer is ook al heel weinig aannemelijk. De veronderstelling is daarom wel gerechtvaardigd, dat deze *Helops* in ons land reeds „thuis" is en men mag verwachten, dat er meer zullen worden gevonden.

Intussen blijft het zeer opmerkelijk, dat zulk een groot insect, dat in zuidelijker landen thuis hoort, in ons land juist gevonden wordt op het allerkoudste plekje, waar 's winters langs de kust ijsbergen van 6 meter hoogte geen zeldzaamheid zijn en dat door zijn combinatie van onvergelijkelijk natuurschoon met een onherbergzaam klimaat wel eens de Rivièra van de Noordpool wordt genoemd.

Deze vondst leert ons wel, dat men nooit gevrijwaard is voor de mogelijkheid van het onverwacht optreden van nieuwe schadelijke insecten, die nog niet eerder in ons land waren aangetroffen.

Literatuur

(1) Horion, A., Faunistik der mitteleur. Käfer, V.

Summary

Three larvae of *Helops rossii* Germ., a Tenebrionid beetle from southern Europe, were met with in a piece of deal at Mirns, on the south coast of the province of Friesland. It was the first time that the species was found in the Netherlands.

Papilio anchisiades anchisiades Esper, a Citrus pest of minor importance

by

J. B. M. VAN DINTHER

(Entomologist, Agricultural Experiment Station, Paramaribo)[1])

Caterpillars of the butterfly *Papilio anchisiades anchisiades* Esp.[2]) can be observed rather regularly on *Citrus* trees in Suriname, in all seasons of the year. Mostly their appearance is limited to individual trees scattered through the plantations. Especially on young trees, an attack may cause serious injury by defoliation.

Seitz[3]), in treating the genus *Papilio,* puts *P. anchisiades* in his *Anchisiades*-group. This author mentions *Citrus* as foodplant for several of the *Papilio* species which compose this tropical-American group; the caterpillars of *P. oxynius* Hübn., a *Papilio* species known from Cuba, have been observed feeding on *Xanthoxylum.*

Description of the stages

E g g. The spherically-shaped egg has a diameter of 1.35 mm.

L a r v a e. There are 5 larval instars, which have the following head-widths in millimetres (that of the 1st instar has been extra-polated): 0.9 (I), 1.3—1.5 (II), 1.9—2.2 (III), 2.9—3.4 (IV) and 4.5—5.1 (V).

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[1]) Present address: Laboratory of Entomology, Agricultural University, Wageningen, The Netherlands.

[2]) Determination by W. D. Field, U.S.D.A.

[3]) Seitz, A., 1907, Die Groß-Schmetterlinge der Erde 2 : 27—29.

L a r v a II. Length from 0.6—1.1 cm. The larva is of a shining caramel-brown colour, while the greenish body contents may be vaguely visible. Dorsally, the prothorax has a yellowish-orange bifurcated sac (osmeterium) which can be thrust out through a slit in the median of the anterior thoracic region. Minute body projections, sparsely ornamented with short setae, are present and together form longitudinal rows.

L a r v a III. Length from 0.9—2 cm. Head and prothorax shiny, caramel-brown; the rest of the shiny body often has a darker brown colour. The larva has its greatest width at the thorax. The abdominal legs, 3rd to 6th pair, are greyish-colourless. Laterally, the third abdominal segment has some whitish veins and small irregular spots.

L a r v a IV. Length varying from 1.5—3.5 cm. The smooth brown and shiny body, with the meso- and metathorax swollen, has very short setae and small tubercles. At rest, the head is bent downward almost perpendicularly and hidden beneath the pronotum. Laterally, the 3rd and the 8th abdominal segments and to a lesser degree segments 4 and 7 also, are ornamented with white veins and spots. The repugnatorial gland (osmeterium) of the 1st thoracic segment is pale brown-yellowish.

L a r v a V. Length from about 3.5 cm after moulting to 5—6 cm when full-grown, with a thoracic width of 1.2 cm. At rest, the light-brown coloured head is retracted beneath the pronotum. The main body colour is velvety brown. Dorsally, at both sides of the median, a tubercle is present on each of the thoracic segments as well as on each of the first 9 abdominal segments. The pairs on abdominal segments 8 and 9 often have a partially white colour, while all the other tubercles are yellow-brown. More laterally, the thoracic segments have another similar body outgrowth, while dorsally the metathorax has a very small tubercle on both sides of the median and close to it.

Dorsally and laterally, the body is ornamented with an intricate pattern of greyish-white veins and spots which outline a longitudinal row of diamond-shaped brown spots in the median. This greyish-white marbling is most striking at the dorso-lateral and lateral sides of segments 3, 7 and 8. Ventrally, the body has a lighter greyish colour. The yellow-orange osmeterium is well developed.

P u p a. Length and width 3.3—3.7 cm and 1 cm respectively. The combination of colour and shape gives to the pupa the typical appearance of a small withered moss-grown broken branch.

Seen from the side, the second thoracic segment has a rather flat upper surface with a blunt wedge-shaped frontal part which joins the smaller first thoracic segment. The anterior side of the first segment joins the truncated frontal head part. The head region however, is situated mainly beneath this first thoracic segment. The final abdominal segments are flattened on their ventral side, giving the abdomen a tapering appearance at the end when seen from the side. The main colour is dull grey-brownish, while in several parts of the pupa a grey-greenish hue is sometimes present. Dorso-laterally, a longitudinal and intensively brown-black coloured spot can be observed on the 3rd abdominal segment while a similar but smaller and rounder spot is situated at the anterior margin of segment 4. Dorsally, at the anterior border of the 2nd thoraric segment there is another pair of small spots. Although these spots are situated in very shallow pits their

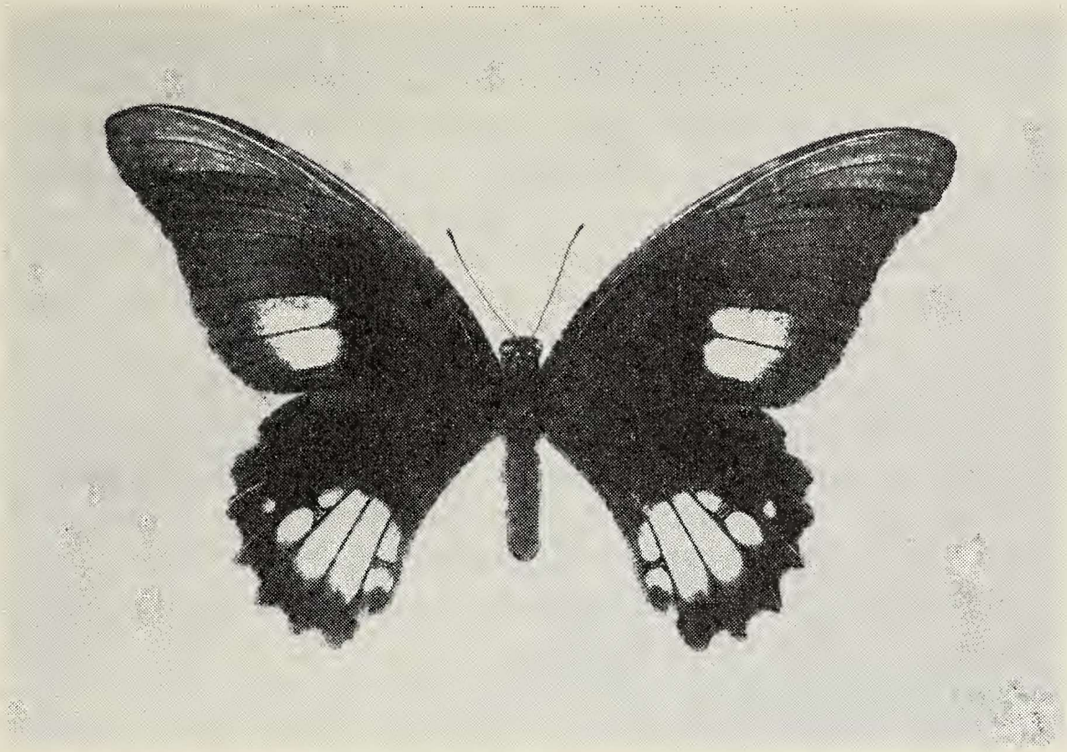

Fig. 1. *Papilio anchisiades anchisiades* Esp., female moth, ¾ × natural size.

intensively brown-black colouration gives impression, that deep cavities are present.

Adult (see fig. 1). The female moth has a wing span varying from 8.5--11 cm. The main colour of the wings is velvety black; the lateral half of the fore wing is less intensively coloured. Dorsally, on its basal part, the fore wing is ornamented with 1 or 2 white patches, that are also present ventrally. However, these patches may be absent or only vaguely visible. Dorsally, on the lower half, the hind wing has a lateral row of 4 often rather large oblong brick-red or red-purplish coloured patches. Frequently one or more of these patches are divided, so that the row is completely or partly doubled; another small spot may be present at the top end of the row. Ventrally, a lateral row of 7 brick-reddish spots is situated of which the last 3—4 spots are partly of a white-pinkish colour. Above and parallel to this row, 3—5 spots are present.

Generally the male butterfly, with a wing span from 8—9 cm, has a similar wing pattern as the female. However, the patches are often smaller, less distinct or even absent in part.

Both sexes are ornamented with white and orange coloured spots on their bodies, e.g. two white spots on the dorsal posterior head region between the eyes, two pairs of orange spots on the pronotum and one larger orange coloured spot laterally on each of the thoracic segments. Dorso-laterally, the basal part of the abdomen also shows an orange patch.

Life history

The eggs are deposited in large numbers on the lower sides of the *Citrus* leaves. After hatching the larvae probably aggregate, since all other larval instars display this gregarious habit. Up to 104 larvae of the second instar have been observed on the underside of one leaf. If disturbed the caterpillars protrude their osmeteria which exhale a distinct odour and sometimes the larvae of the second instar have been noticed lowering themselves by means of a silky thread. In the field during

the daytime, caterpillars of the last two instars will often aggregate in groups around branches or on the trunk, their bodies touching and parallel to each other.

When breeding the caterpillars in the laboratory on *Citrus* it was observed, that a whole bunch of larvae of the 4th and also of the 5th instar suddenly started crawling in search of food. After a feeding period varying from about 20—30 minutes they would often return in procession to their original resting place.

Caterpillars of the last two instars are very voracious and may completely defoliate *Citrus* branches; even the main veins of the leaves are consumed.

As to the developmental duration in days of the 2nd and later instars, the following data can be noted: 3 (II), 3 (III), 4 (IV) and 6 (V). The full-grown caterpillar of the 5th instar attaches itself to a branch or stem. The body shortens to a length of about 3 cm, bends dorsally, and after a prepupal period of 1—2 days pupation takes place. With its caudal extremity hooked on to a small pad of silk and secured by a central silken girdle the pupa makes an upward angle of about 30—45 degrees with the substratum.

Caterpillars of the last two instars, collected from the field, and bred in the laboratory showed a remarkable variation in the duration of the pupal stage. The shortest development took 13—15 days, the longest amounted to 184 days. From one lot of newly formed pupae on April 22, 1953, most butterflies appeared after 14 days; the last three butterflies emerged after 85, 133 and 146 days. From another group of caterpillars, which pupated during January 3—6, 1955, most butterflies came out after 13—15 days and the remaining butterflies after 60, 62, 83, 107 and 184 days. Finally, from one lot of young caterpillars of the 2nd instar that completed their further larval periods under laboratory conditions and pupated on March 30—31, the first butterflies emerged after 58 days, while other butterflies came out after 60, 91, 98, 106, 116 and 120 days.

Orthosia gothica L. Van de weinige exemplaren, die in 1957 op de lamp kwamen, nam ik een zeer licht gekleurd wijfje mee. In twee dagen werd een flinke partij eieren gelegd en na 6 dagen verschenen al de eerste rupsen. De hele kweek werd met eik en wilg groot gebracht, zonder dat de rupsen enige neiging vertoonden elkaar aan te grijpen.

Maar toen ik voor het gemak een kweek rupsen van *Cleora cinctaria* bij ze onderbracht, ging het mis ! Nu bleken de *gothica*-rupsen echte carnivoren te zijn. De ongelukkige *cinctaria*'s werden geheel opgegeten door ze.

Iets dergelijks gebeurde met een paar rupsen van *Orthosia cruda,* die samen gebracht werden met een rups van *Amphipyra pyramidalis*. Ze presteerden het om binnen een uur de veel grotere *pyramidalis*-rups te verslinden.

Beide *Orthosia*-soorten bezondigen zich dus niet aan hun eigen familie, maar schijnen iedere andere buur zonder vorm van proces tot een welkome buit te verklaren. Overigens zijn ze heel makkelijk op te kweken.

W. J. Boer Leffef, Korteweg 53, Apeldoorn.

Bibliotheek. Ontvangen is het Zoological Record, vol. 92, sect. 13, 1955, het deel der Insecta, gepubliceerd in 1957.