

## NOTES ON THE NEW RANGE OF SOME ASIATIC PAPILIONIDS IN THE PHILIPPINES<sup>1</sup>

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For the benefit of lepidopterists, especially those who are interested in the distribution of Malaysian and Asiatic forms, this paper briefly gives notes on the new range of some well-known Asiatic swallowtails. A comment on the recent reappearance of *Papilio demoleus* Linn. in the Philippines is also included.

### 1. PAPILIO ZUTHUS BENGUETANA Joicey-Talbot

The tertiary connection of northern Philippines to Asia and Formosa had been discussed by scientists in recent years, and it had been hinted that because of these land bridges Asiatic elements such as *Vanessa*, *Argyreus*, *Pieris* and certain papilionids are found on the high mountains of northern Luzon. The discovery of *Papilio zuthus benquetana* Joicey-Talbot in Mt. Sto. Tomas, and its publication in *The Entomologist* in 1923 caused a ripple of excitement among lepidopterists of that time. Presently, nearly half a century after that discovery, very little is known about its biology, and it has remained a very rare specimen in world collections. It is presently among the greatly solicited Philippine swallowtails. In 1955, however, Rev. Henry Schoenig, S.V.D., Head of the Department of Biology at the University of San Carlos, Cebu City, was able to collect about half a dozen specimens of *benquetana* in Mt. Sto. Tomas.

### 2. PAPILIO CHICAE Igarashi and PAPILIO LORQUINI Reakirt (Fig. 1a)

Also in 1955 and at the same locality, a strange-looking papilionid was collected by Rev. Schoenig. Although recalling the *Papilio bianor* of Formosa and mainland East Asia, the present author decided it was new and described it as *Papilio schoenigi* in a paper forwarded to the *Journal of the Lepidopterists' Society* for publication in 1962. Unfortunately, this paper did not see publication for reasons unknown as it did not receive any acknowledgment, thus the status of *P. schoenigi* remains as a manuscript name. In 1965, ten years after Fr. Schoenig's discovery, Japanese collectors got a battered male at Mt. Sto. Tomas. Finding it new, a

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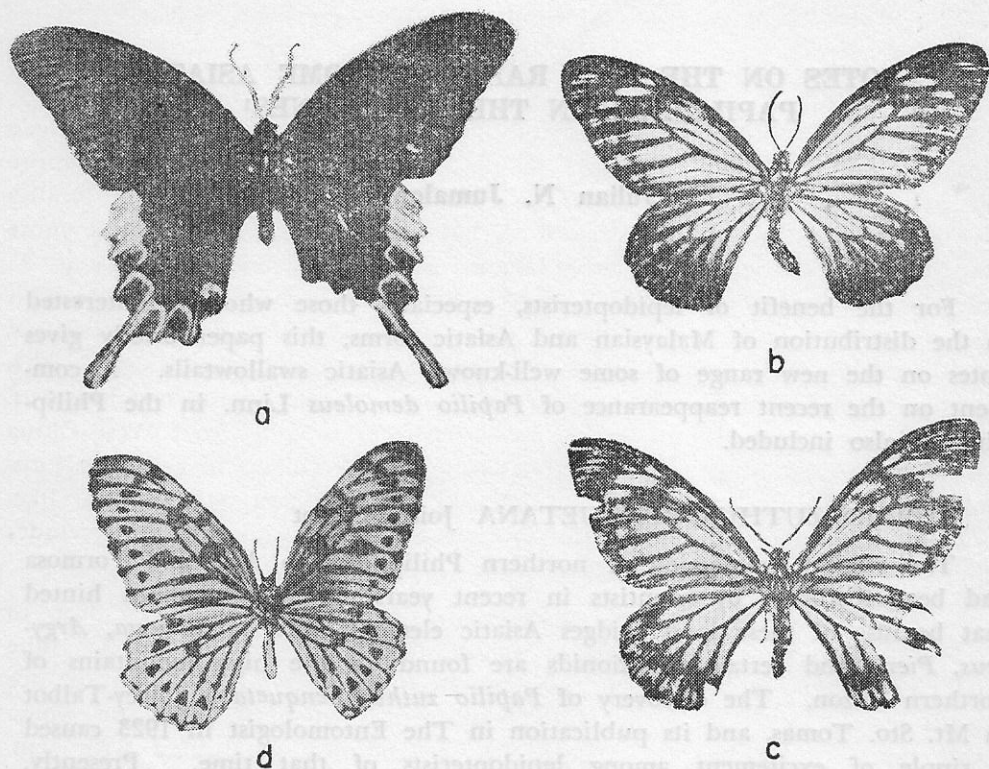


Fig. 1. (a) *Papilio lorquini*, dorsal aspect; (b) *Papilio carolinensis*, dorsal aspect; (c) *Papilio osmana*, dorsal aspect; (d) *Graphium idaeoides*, ventral aspect.

paper describing it as *Papilio chicae*, was published that same in the *Tyo-To-Ga*, the journal of the Lepidopterological Society of Japan.

In a recent visit here by Dr. Shigeru A. Ae, a well-known lepidopterist at Nanzan University in Nagoya, the author showed him a one-hundred year old paper by Tryon Reakirt, where seemingly, the female of *P. chicae* was described as *Papilio lorquini*. No definite locality was mentioned except the Philippines. Both Howarth and Ae agreed with the author tentatively that the *schoenigi* of Jumalon and *chicae* Igarashi is verily the male of *lorquini* Reakirt. Producing the real female of the *chicae* as soon as possible may help in resolving this matter. We still hope that the *chicae* is entirely a different species. Dr. Ae and the author tried to collect in Mt. Sto. Tomas and Mt. Paoay in August 1967, in the hope of catching the female, but to no avail. The female remains to be collected and determined since we are not sure if Reakirt's female is the female of the controversial *chicae*.

3. *PAPILIO CAROLINENSIS* Jumalon and *PAPILIO OSMANA* Jumalon  
(Figs. 1b & 1c)

A danaid-mimic, *Papilio carolinensis* Jumalon, was collected on the northwest foothill of Mt. Diwata near Lake Mainit in the 1958 Entomological Expedition of the University of San Carlos to the Agusan-Surigao area. This papilionid is closest to the *Agestor* Group, especially *Papilio epycides* (= *Chilasa epycides melanoleucus* Ney). This unexpected locality for a Formosan and South Asian form has inspired back glances once more at the Late Tertiary when two famous *Troides* (*T. magellanus* and *T. rhadamantus*) were introduced into the Philippines (F. E. Zeuner). This discovery at Agusan was followed nine years later by the collection of another similar-looking papilionid, *Papilio osmana*, in southern Leyte. This Leytean form is almost identical to Formosa's *epicydes*, form *melanoleucus*. Seitz (1927) presented four subspecies of *epicydes* ranging from West China to Sikkim, Assam, Burma, and Tennasserim. For Formosa he gave the form *horatius* which probably is the *melanoleucus* of Shirozu (1960) who, likewise, believes that the Asiatic distribution of *agestor* and *epicydes* excludes the Philippines.

*Papilio osmana* is between *epicydes* and *agestor*. It was taken deep in a forest overlooking the Pacific at an elevation of about 1,500 feet. The habitat of this and that of the Agusan form, *Papilio carolinensis* are much lower than that of the *zuthus* and *chicae* in northern Luzon where it is much colder and the vegetational associations are diluted with temperate types of plants. We are here confronted with a problem on how these Asiatic papilionids have managed to reach Mindanao and Leyte. If Formosa served as bridge during the migration of these forms to the newly formed Archipelago in the Tertiary, then these butterflies are likely to be present also at the habitat of *zuthus* and *chicae* in Luzon.

The *osmana* was lately duplicated by a Leytean collector while *carolinensis* was never seen again, although at the time of its capture, it seemed, the party also collected what appeared to be the female, but this was lost in the intervening years in the university's collection. In a practical sense, northern Luzon is the logical habitat of these two papilionids. Their endemic character will also find corresponding habitat on Luzon's mountain ranges from north to south.

4. *PAPILIO DEMOLEUS* Linn.

Seitz' (1927) account of this species in the Philippines was based on a single specimen claimed to be a straggler. Thus, for all practical purposes, the Philippines was excluded from the given range of *P. demoleus* (Semper 1875, Shirozu 1960). In the last forty years of collecting, the author has never come across this species, nor has any of the known collectors of the country. In January 1967, however, the presence of several

*P. demoleus* was noted in the Greater Manila Area. The author collected his first male on January 27 of that year at Balut Island, Tondo. The Nuyda brothers shortly after, began picking specimens in Pasay City.

Reakirt (1864) listed the distribution of *P. demoleus* as Cape of Good Hope, Madagascar, Coast of Guinea, Senegal, South and West Africa. In the same paper, *Papilio erithonius* Cram. was described as another species consisting of variety "a" (Australian form) and variety "b" (Philippine form) and the range listed included China, India, Ceylon and the Philippines. Reakirt based his variety differentiation on the variation of the number and size of the spots. A more detailed study of a good series of *demoleus* from Luzon and Cebu clearly shows, however, that it includes both varieties "a" and "b" of Reakirt's *P. erithonius*. It is clear, therefore, that Reakirt described the true but variable *P. demoleus* of Asia and Formosa.

The recent abundance of *P. demoleus* on parts of Luzon as observed by Osman Jumalon along the Manila-Abra route in August 1968 and also in Cebu late last year, may be considered a mere reappearance. Whether this butterfly has completely disappeared from local collecting grounds since the last report of Reakirt 100 years ago, or it has remained in isolated parts of the country seldom visited by collectors, cannot here be remarked conclusively. The present finding, however, erases without doubt the report of a single straggler by Seitz (1927).

##### 5. PAPILIO KARNA Fldr.

A Philippine form of Malaysia's *Popilio karna* was collected during the third USC expedition to Palawan in November 1968. This was the only specimen seen and taken since the first expedition in 1959. Neither Seitz (1927) nor Semper (1875) mentioned its presence in the Philippines. Since there were two successive storms during our stay in the forest, it was believed at first that this was accidentally blown to Palawan. But such a possibility could easily be dismissed due to the freshness of the scales and absence of bruises except for a slight slit on the apex of the right forewing and small cuts on the extremities of the tails.

##### 6. GRAPHIUM IDAEOIDES (Hewitson) (Fig. 1d)

Semper (1875) and Seitz (1927) localized Mindanao as the range of a well-known mimetic, *Graphium ideaoides*. Seitz had no way of knowing that Dr. Banks of the former Bureau of Science collected in 1906 a specimen of *ideaoides* from Montalban, Rizal. The National Museum has also specimens reportedly collected from Samar in 1960. A Luzon collector lately took several specimens in Quezon Province.

DISTRIBUTION OF SOME PAPILIONIDS IN THE PHILIPPINES

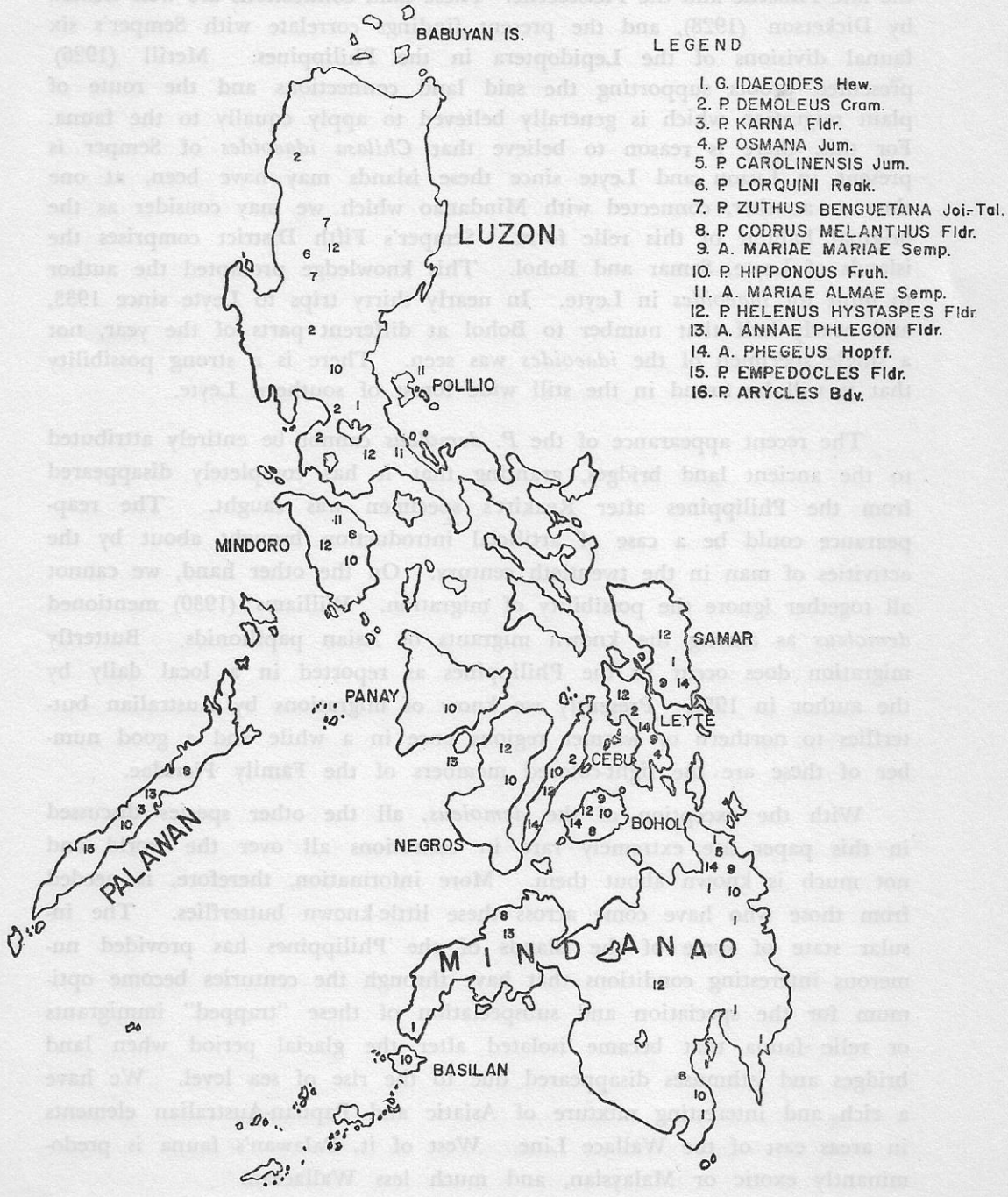


Fig. 2. Distribution map of some species of Philippine papilionids.

## DISCUSSION

All these new ranges discussed (Fig. 2) lend support to the geological history of the Philippines in the Tertiary, especially the land connections in the late Pliocene and the Pleistocene. These land connections are well treated by Dickerson (1928), and the present findings correlate with Semper's six faunal divisions of the Lepidoptera in the Philippines. Merrill (1926) presented proofs supporting the said land connections and the route of plant migration which is generally believed to apply equally to the fauna. For this, there is reason to believe that *Chilasa idaeoides* of Semper is present in Luzon and Leyte since these islands may have been, at one time or another, connected with Mindanao which we may consider as the original habitat of this relic form. Semper's Fifth District comprises the islands of Leyte, Samar and Bohol. This knowledge prompted the author to hunt for *idaeoides* in Leyte. In nearly thirty trips to Leyte since 1933, and nearly half that number to Bohol at different parts of the year, not a single specimen of the *idaeoides* was seen. There is a strong possibility that it will be found in the still wide forest of southern Leyte.

The recent appearance of the *P. demoleus* cannot be entirely attributed to the ancient land bridges, granting that it has completely disappeared from the Philippines after Reakirt's specimen was caught. The reappearance could be a case of artificial introduction brought about by the activities of man in the twentieth century. On the other hand, we cannot all together ignore the possibility of migration. Williams (1930) mentioned *demoleus* as among the known migrants of Asian papilionids. Butterfly migration does occur in the Philippines as reported in a local daily by the author in 1958. Presently we know of migrations by Australian butterflies to northern or warmer regions once in a while and a good number of these are the light-colored members of the Family Pieridae.

With the exception of the *demoleus*, all the other species discussed in this paper are extremely rare in collections all over the world and not much is known about them. More information, therefore, is needed from those who have come across these little-known butterflies. The insular state of some of the islands of the Philippines has provided numerous interesting conditions that have through the centuries become optimum for the speciation and subspeciation of these "trapped" immigrants or relic fauna that became isolated after the glacial period when land bridges and isthmuses disappeared due to the rise of sea level. We have a rich and interesting mixture of Asiatic and Papuan-Australian elements in areas east of the Wallace Line. West of it, Palawan's fauna is predominantly exotic or Malaysian, and much less Wallacean.

## RECOMMENDATION

More intensive study and systematic method of collection should be done to bring about an adequate knowledge on our butterfly fauna. Unlike in the past where many forest interior areas were left untouched, today, many of these impenetrable places are now accessible by means of logging, mining, and feeder roads. Many forests, however, still remain undisturbed and those that are not have little glades, creeks and thickets that serve as habitats to endemics. Some of such unworked areas have vegetational associations that serve as special breeding places for still unstudied species. While the battle for protection of forests goes on with no end visible, other parts of the world are setting aside wide areas as perpetual reserve for ecological studies. If this cannot be done in this country, the only recourse is to step up the collection of what are bound to disappear forever in the name of progress and industrialization. There must grow a united feeling and desire for conservation of natural history among professionals. A nationwide salvage operation should receive stimulation and support from all university and college campuses through establishments of natural history museums, enforcement of research among the faculty, and government encouragement through generous provision of funds.

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