ESPECIALLY FOR FIELD COLLECTORS

(Under the supervision of JAMES R. MERRITT)

LEPIDOPTERA COLLECTING AT RANKEN, MISSOURI

by EDWIN P. MEINERS

The favorite collecting grounds of our entomologists of an earlier day were limited largely by their accessibility by street car or train or, on occasion, by long hikes. So we come to find certain areas to have been more or less common meeting grounds for persons of like tastes. A few of these early collecting grounds in the St. Louis area have become well known, as their names have not infrequently appeared in the literature. Creve Coeur Lake (Akerlind, 1907), about 15 miles northwest of St. Louis, is a natural lake formed by the backwater of the Missouri River, bordered on the south by hills and bluffs. Cliff Cave, along the Mississippi River, about four miles south of Jefferson Barracks, is a locality where certain migrant butterflies, such as *Eurema mexicana* and *Agraulis vanillæ,* coming up the Mississippi flyway were to be found at times. Meramec Highlands (Heink, 1913; Dean, 1918) is an area of hills and ravines bordering the Meramec River, about 20 miles southwest of St. Louis, where *Papilio marcellus, Incisalia henrici, Strymon m-album, Anthocaris genutia,* and *Euchloe olympia,* as well as numerous species of the genus *Catocala,* have been taken.

With the advent of the automobile more remote regions have been explored, and so we find that, for many years, the favorite collecting ground of the entomologists of the St. Louis area has been a locality known to the local naturalists as "Ranken" or "The Ranken Estate." Ranken is an area approximately five miles square, located in the extreme southwestern portion of St. Louis County about 25 miles from the heart of the city of St. Louis. It lies at the northern fringe of the Ozark country and is bounded partly on the north and the west by the Meramec River. The terrain is made up of a broad ridge which divides the area into two wide and fertile valleys. This main ridge divides and subdivides into a series of lesser ridges which spread out, finger-like, to form smaller valleys, ravines and hollows, all of which have been a paradise, not only for the entomologist, but also for those interested in the other branches of natural history.

Every hollow and valley has its own creek, most of them intermittent in flow, which are eventually drained through underground passages, as is evidenced by the numerous springs in all of the valleys. During the dry season the creeks become dry or almost dry, the largest, Antire Creek, becoming a series of pools within the broad expanse of the dry gravel creek bed. The hills average between 250 and 350 feet in elevation above the Meramec River and consist of a limestone base, a ledge of which forms an outcropping on many of the ridges. The upper portion of the ridges is almost entirely chert-covered.

The area is nearly all forested with the exception of the fertile valleys that are under cultivation. The forest is principally an oak—hickory association with a considerable admixture of Sugar Maple, Walnut, Ash, Elm, Honey-locust and Hackberry along the lower slopes and ravines, while Sycamore, Willows, and Cotton-woods grow in the valleys and along the creeks. There is a considerable invasion of Red Cedar along the lower slopes, and here in spring we find numbers of *Mitoura gryneus* gyrating among the topmost branches but occasionally coming down within reach of the net. A second brood, representing the dark form "smilacis," appears early in July.

The outcropping ledge of limestone.

The ledges and lowermost slopes of the ridges are covered with Red-bud (*Cercis canadensis*), a common denizen of the entire Ozark region, which sets the hills ablaze with rosy color early in spring. There we find *Incisalia henrici* frequenting the flowers or ovipositing upon the leaf buds. Another early spring butterfly that we find in the open woods along the lower slopes and which is looked upon as a prize by the collector is *Anthocaris genutia,* which may on rare occasions be found in considerable numbers.

Pawpaw grows along the edge of the woods at the foot of the hills, usually at the opening of the ravines or hollows, while everywhere we find Sassafras in abundance adding color to the autumn woods. Wild Cherry is fairly common, and occasionally we find Wafer-ash (*Ptelea trifoliata*). Wild Ginger grows in abundance in the ravines. Along with these plants we find the following butterflies: *Papilio marcellus, troilus, glaucus, cresphontes* and *philenor. P. troilus* is by far the most abundant of our Swallow-tails, frequently sipping moisture at the edge of the creek or pools, and in one year of drought we found them in swarms of hundreds at the few moist places

available, together with numerous specimens of *glaucus* and *marcellus*. *P. cresphontes* is one of our scarcest papilios, though not exactly rare.

A creek bed at Ranken, nearly dry in mid-summer.

The tops of the highest ridges are covered with chert and vegetation is rather sparse. Rock Cress (*Arabis viridis*) is found growing here in this cherty soil in small groups. This is the habitat of *Euchloe olympia,* which flies from the end of March through April, the caterpillars feeding upon the Rock Cress (Meiners, 1939; Arnhold, 1952). It was found that *Arabis viridis* grows only where the soil is extremely rocky, while only a few feet from the top, where there is less exposure of the chert, none of the plants are to be found. The eggs are laid principally upon the buds, only a few being found upon the leaves, and from one to a dozen eggs are laid upon each plant. *E. olympia* is typically a hilltop denizen, being found plentifully where *Arabis* is growing. A few individuals will sometimes migrate to the lower slopes, and when found, have led to its being considered a rare species by most local entomologists; few collectors make the strenuous climb to the ridge tops.

A common plant found growing along the roadsides and in waste places throughout the entire Ozark region is the Goatweed (*Croton capitatum*). This is the food of *Anæa andria*, one of our commonest butterflies. *A. andria* is double-brooded in this region, being most plentiful late in summer and early in autumn, frequently being found in numbers around the decaying fruit of the Persimmon trees. It hibernates in the imaginal state and is often found flying on warm, sunshiny days in mid-winter (Rowley, 1891).

In late summer the fields are covered with Iron-weed, Joe-pye-weed, Blue Vervain, *Eupatorium,* Field Aster, and others, which attract many kinds

of butterflies. *Colias eurytheme* is especially abundant at this time of the year, its orange color being particularly conspicuous in the fields of white flowers. At one time, and within my memory, *Colias philodice* was our commonest butterfly, congregating by the hundreds at roadside puddles following a summer shower, while *C. eurytheme* was considered a collector's prize. This has been completely reversed within my 50 years of collecting, *philodice* being now all but exterminated by the more aggressive *eurytheme* (Clark, 1931).

I have records of about 86 species of butterflies, with their many variations, seasonal forms, etc., taken at Ranken. Among some of the rarities I might mention *Eurema mexicana, Agraulis vanillæ, Phyciodes phaon, Polygonia progne, Strymon ontario, Strymon liparops,* and *Hemiargus isola.* Although *Cercyonis alope, Euphydryas phaeton,* and *Calephelis muticum* are not especially rare, they are usually found only in a few isolated areas and are considered prizes when taken.

I will mention only a few of the more conspicuous moths that we have taken at Ranken. From early spring into midsummer we find *Hemaris thysbe* and *H. diffinis* flying abundantly during the day time. These moths are double-brooded, the larvæ commonly found on Buck-bush (*Symphoricarpos orbiculatum*), a low shrub growing profusely throughout the entire Ozark area. *Amphion nessus,* another day flying sphinx, is taken rarely and is a prize. Beds of Bouncing Bet (*Saponaria officinalis*), escapes from nearby gardens, attract a number of sphinges, commonly *Phlegethontius sextus* and *P. quinquemaculatus, Dolba hylæus* (larva on Pawpaw), *Ceratomia undulosa, Atreides plebeja, Cressonia juglandis, Ampelœca myron, Darapsa pholus, Xylophanes tersa,* and *Celerio lineata,* the latter our most common sphinx.

Of the Saturniidæ *Platysamia cecropia, Actias luna,* and *Telea polyphemus* are common. *Automeris io* is not found as frequently with us as it is further south. *Hemileuca maia,* occasionally met late in fall, is a swift flyer and difficult to capture. *Callosamia promethea* was at one time extremely common, and bushels of the cocoons could be gathered from the low Sassafras shrubs where they formed conspicuous objects after all of the leaves had fallen. It has now been many years since I have seen *promethea* in St. Louis County, and I had about come to the conclusion that the species had been exterminated, probably by parasites to which it is exceptionally prone, had I not found two empty cocoons on Sassafras during the fall of 1955 not far from Ranken.

The most interesting moths taken at Ranken, however, belong to the genus *Catocala*, of which I have records of 37 species with their many variations, and there may be others that I have failed to find. Every ravine and hollow is a happy hunting grounds for these gorgeous insects during their season of flight, which begins about the middle of June and extends to nearly the end of August. Daytime collecting (Rowley, 1906) has always been our method of choice, and with a sharp eye and a stealthy step it is possible to approach and capture them with the cyanide jar and without the use of the net. One must, however, choose the proper kind of a day for successful collecting. A stuffy, humid, hot day in July or early August with a storm not far in the offing gives the best results. I have notes of such a day early in August of 1931 that was a record for me. It was an unusually hot

and humid day, dark clouds were beginning to form in the west, and the rumble of distant thunder could be plainly heard. It was about 3 o'clock in the afternoon when I, together with several members of my family, entered one of the hollows, each armed with cyanide jars. Imagine our surprise when we found *Catocala* flying like bees around a hive. Every tree trunk had one to a dozen specimens on it, but all were alert and extremely wary. If we bottled one specimen the others immediately took off. But there were others

A *Catocala* hollow at Ranken, home of many species.

on the next tree and the next, and we bottled them as fast as the cyanide would stun them. About 5 o'clock the storm was upon us and we had to scurry for shelter. Later, when we added up our captures, we had a hundred specimens representing 18 species. Following the storm we had a week's respite from the summer's heat. Returning the following Sunday there was not a single *Catocala* to be seen. The day was comparatively cool and clear!

Some of the commonest species found at Ranken were: *Catocala innubens, lacrymosa, neogama, ilia, epione,* and *amica.* Among the relative rarities we

found *C. consors, angusi lucetta, mæstosa, nebulosa, sordida, judith, coccinata,* and *serena.*

Some years ago lumbermen entered this region and many of the fine old oaks fell to their ax. Later a national highway traversed the area and with it came automobiles and picnickers. More recently the Boy Scouts have taken over a considerable portion of it and added many modern "improvements." Ranken as we knew it is no more, but there are still many wooded hills and deep ravines where one can find rare butterflies and *Catocala.*

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FOOD PLANTS OF *PERO MACDUNNOUGHI*

In his recent revision of some western species of the genus *Pero,* RINDGE (1955, *Amer. Mus. Nov.* 1750: 33 pp.) makes the following statement: "The food plants are but little known, and it is possible that some of these species feed on more plants than are now known." This is quite true with *Pero macdunnoughi* Cassino & Swett, which feeds on at least two other plant species besides Privet mentioned by COMSTOCK (*Bull. So. California Acad. Sci.* 29: p.29; 1930) in his life history description.

In November 1941 I obtained some eggs from a confined female of this species. The newly-hatched larvæ refused to eat several species of plants offered them, but fed readily on foliage of *Artemisia californica* Less. and were reared to maturity on it.

In July 1955 eight ova were found laid in a row along the edge of a leaf of *Eriogonum fasciculatum* Benth. Four of the larvæ from this batch of eggs were reared to maturity. The adults which emerged in November were typical *P. macdunnoughi.*

Since the only published food plant record lists an introduced plant, this report of two native host plants should be of some interest.

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