

MISCELLANEOUS INSECTS BREEDING ON THURBERIA.

A very tiny leaf miner was found quite abundantly in all of the places where we found the plant. This species has not yet been bred, but is quite different from the ordinary cotton leaf miner.

A new species of *Bucculatrix* was found feeding on the leaves of *Thurberia* in all the places investigated, and at McCleary's Ranch in Stone Cabin Canyon, this species had found the three or four plants which had been grown there at an altitude of about 4000 feet. The tiny larva of this species spins an elongate white corrugated cocoon less than $\frac{1}{4}$ inch long. The species will be described by Mr. Busck. Specimens of this genus have been found on cotton in Mexico.

Another Lepidopterous larva, determined by Mr. Busck as *Dichomeris deflecta* Busck, makes a fold in the leaf by means of two or three silken threads, and feeds within this fold. It is very active and when its hiding place is disturbed quickly slips out. It pupates in its fold. It fed on cotton at Victoria, but Mr. Coad could not carry it through to maturity. It is parasitized by a species of *Braconidæ*.

A species of *Geometridæ* was very commonly found feeding on the foliage of *Thurberia* in Stone Cabin Canyon. *Geometridæ* are commonly found on cotton.

One beautiful yellow and brownish Bombycine larva was found feeding on a *Thurberia* plant in Stone Cabin Canyon. This was successfully bred by Mr. Coad and determined by Dr. Dyar as *Lirimiris truncata* H. S., a species new to the United States.

A species of *Ephesia* breeds in the bolls quite commonly. Only one specimen has so far been carried to maturity. This was determined by Dr. Dyar.

A very pretty yellow *Spilochalcis* was bred in May from bolls infested by the *Ephesia*, and is very probably a parasite of it.

Two species of *Thysanoptera* were found in *Thurberia* flowers. Several specimens of *Frankliniella insularis* Franklin, (*Euthrips*), determined by A. C. Morgan, were found in a flower in Stone Cabin Canyon. This species occurs in Mexico, at Brownsville, Texas, and in Barbados.

A Ptinid, *Prostephanus truncatus* Horn breeds abundantly in the dead stalks. One Cerambycid stalk-boring larva was also found in Stone Cabin Canyon.

A Scutellarid, *Aulacostethus marmoratus* Say was found commonly feeding and breeding on dead bolls of *Thurberia*.

Twice in Stone Cabin Canyon a species of *Eucharidæ* was observed ovipositing in apparently healthy squares. In one instance the sprig was gently plucked and transferred to a vial without disturbing the tiny insect and both of us observed its ovipositor in-

served in the square. This specimen is described as a new species of *Chalcura* by Mr. Crawford.

At Victoria, Texas, Mr. Coad's *Thurberia* plants became heavily infested by *Aphis gossypii*,

MISCELLANEOUS VISITORS.

The majority of the miscellaneous insects visiting this plant were present for its nectar although some were predatory.

The Hemiptera should probably be included among the injurious insects, but no definite records of feeding were obtained against those not already mentioned. An *Aleyrodes* in the winged form was occasionally seen. Mr. Heidemann has determined the following species taken in Stone Cabin Canyon: *Lygus bicolor* H. S., *L. lateralis* Dall, *Dendrocoris arizonensis* Barber, *Corizus punctatus* Signoret, *Notocyrtus* sp. and *Creontiades rubrinervis* Stal. From *Thurberia* in Pima Canyon we obtained *Lopidea confluens* Say and an *Empoasca*. A *Zelus renardii* Stal was collected in Ventana Canyon.

One small brown female Mantis, *Litaneutria obscura* Scudder, and two species of grasshoppers, *Barytettix neomexicana* Scudder, and a *Schistocerca* found only in nymphal stages, were taken in Stone Cabin Canyon, and the *Barytettix* was also on the plant in the Santa Catalina Mountains. These insects were determined by Mr. Caudell.

The following beetles determined by Mr. Schwarz were collected on *Thurberia* at Fish Creek, *Scymnus ardelio* Horn, two species of *Attalus*, one of them new, *Petalium bistriatum* Say and *Lema balteata* Le Conte. In Stone Cabin Canyon we took *Scymnus ardelio* Horn, *Hippodamia convergens* Guerin, *Thalassa montezumæ* Mulsant, *Cryptorhopalum pumilum* Casey, *Chauliognathus profundus* Le Conte, and *C. obscurus* Schæffer, *Enoclerus abruptus* Le Conte, a species of *Hydnocera*, *Hymenorus rotundicollis* Casey, and *Epitragus fusiformis* Casey. This last mentioned species and the *Chauliognathus profundus* were very common on many plants.

Three species of *Bruchus* were found at the nectar in Stone Cabin Canyon, *Bruchus impiger* Horn, *B. amicus* Horn and *B. chiricahuæ* Fall. In Pima Canyon *Bruchus crenatus* Schæffer was collected.

Among the visitors at the nectar in Stone Cabin Canyon were three species of weevils, *Cyphus lautus* Le Conte, *Coleocerus dispar* Horn and *Lamosaccus texanus* Schæffer.

The Hymenoptera were abundant visitors at the nectaries and pollen. The bees have been determined by Messrs. Cockerell and Crawford, the ants by Dr. W. M. Wheeler, the wasps by Mr. Rohwer.