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The Insect Visitors of Flowers in New Mexico— II.

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12th, 1894; seven days after another of exactly the same dimensions brought into Yarmouth by a Herring-boat.

PORPOISE (*Phocaena communis*). C.—Frequently seen in the fishery grounds, and not seldom observed when passing through the Roads in summer. Has been seen up-river, and been stranded on Breydon mud-flats. "Two foetal young ones were taken from a Porpoise at Yarmouth on Dec. 7th, 1881," Southwell (Trans. Norf. and Nor. Nat. Soc. iii. p. 672). A very large shoal passed through the Roads, Jan. 11th, 1890. An example 39 in. long stranded July 18th, 1891; the teeth were barely through the gums.

WHITE-BEAKED DOLPHIN (*Delphinus albirostris*). F.—This species, which "was first recorded from Norfolk" (Trans. Norf. and Nor. Nat. Soc. iii. p. 672), has several times been observed, and taken since. Six are recorded prior to 1885. I have met with the following:—Example 7 ft., Gorleston, April 17th, 1890; another, 4 ft. 8 in., on South Beach, April 19th, 1891 (the Gulls had been busy at it); one, 7 ft. 4 in., went through the bridge to Breydon, Aug. 30th, 1891; it had forty-four teeth in the upper jaw, forty-eight below. Several got aground in shallow water at the Caister "patch," Sept. 16th, 1891; they struggled over a considerable area into deeper water. One brought in alive, June 13th, 1894; length, 8 ft. 6 in.; was exhibited alive on the Marine Parade, but ordered off by police. It was killed in a fish-house, and found to be a gravid female; the young contained was 3 ft. 6 in., the short snout was not beyond the arch of the "forehead," which was exceedingly convex. It was apparently within a day or two of birth. Most of the examples examined were females. Local, "Scoulter."

THE COMMON DOLPHIN (*D. delphis*) has not as yet been detected here.

THE INSECT VISITORS OF FLOWERS IN NEW MEXICO.—II.

By T. D. A. COCKERELL,

Entomologist of the New Mexico Agricultural Experiment Station.

THE present paper relates mostly to some investigations made in September and October, 1897, during a trip northward up the Rio Grande Valley. The localities visited were Rincon, Albuquerque, Santa Fé, Española, Embudo, and Rinconada.

Rincon, N. M., Sept. 14th.

While the train stopped I was able to do a few moments' collecting, and obtained three species of bees:—

- (1). *Nomia foxii*, Dalla Torre. One female at flowers of *Solanum elaeagnifolium*.
- (2). *Perdita callicerata*, Ckll. At flowers of *Baileya multiradiata*.
- (3). *Halictus* sp., apparently new, at flowers of *Gutierrezia sarothrae*.

Albuquerque, N. M., Sept. 15th to 17th.

Altitude 5026 ft. Lat. 35° 05'. Annual precipitation, 7.19 inches. Mean temperature: annual, 55.8°; for September, 63.5°.

The following flowers, which were collected, were not observed to be visited by bees:—*Gaillardia*, prob. *pulchella*, *Aster multiflorus*, *Eriogonum rotundifolium*, *Oreocarya* prob. *sufrutescens*, *Abronia fragrans*, *Astragalus* sp., *Salvia lanceolata*, *Carlownrightia linearifolia*, *Anemopsis californica*, *Chrysothamnus* (i. e. *Bigelovia*) *bigelovii*, *Flaveria angustifolia* (almost over). The *B. bigelovii* was common by the roadsides in the part of the town known as the Highlands, and was badly infested by some gall-making dipteran. I am indebted to Prof. L. O. Wootton for the names of these plants.

The following flowers were visited by bees:—

- (1). *Oleome serrulata*; visited by *Bombus morrisoni*, Cr., *Podalirius urbanus* var. *alamosanus* (Ckll.), and *Perdita zebrata*, Cr.
- (2). *Grindelia* sp.; visited by *Ashmeadiella buconis* (Say), which is new to the fauna of New Mexico.
- (3). *Bigelovia wrightii*; visited by *Prosopis asinina* var. *bigelovii*, Ckll. ined., *Nomia nevadensis*, Cr., *Epeolus occidentalis*, Cr., and *Colletes armata*, Patt.

Pollination - Noncultivated Plants
Pollination - General

- (4). *Helianthus annuus*; visited by *Perdita albipennis* var. *hyalina* (Cr.), *Pseudopanurgus athiops* (Cr.), *Melissodes agilis*, Cr., *Andrena helianthi*, Rob. (new to N. M.), and *Nomia persimilis*, Ckll. ined., ♀. The females of *Nomia persimilis* mimic *Andrena helianthi* to such a degree that when collecting them I did not distinguish the two species.
- (5). *Asper* sp. with purple rays; visited by males of *Nomia persimilis*, Ckll. ined.

There is one thing to be noticed in connection with the above records, namely, that the flowers which attracted the bees are not only of bright colours, but occur in large masses, so as to be visible from a distance. The other eleven flowers are either comparatively inconspicuous, or do not occur in large masses, except perhaps the *Anemopsis*, which seems quite unsuited for bees.

Santa Fé, N. M., Oct. 3rd to 5th.

Alt. 7,026 ft. Lat. 35° 41'. Ann. precip. 14.69 in. Mean temp.: annual, 49.6°; for October, 51.0°.

The end of the bee season was at hand, and few species were on the wing. *Bigelovia* or *Chrysothamnus speciosus* var. ? *latissquameus* (det. E. O. Wooton) was still in flower, and attracted *Halictus ligatus*, Say, ♂, *Colletes americana*, Cr., ♀, and females of *Melissodes*, besides some undetermined males of *Halictus*. In a garden, marigolds and marguerites were yet in bloom, and I watched them with interest because, although garden flowers are usually unattractive to wild bees, they are visited when the wild flowers are mostly over, at the end of the summer. The result was as follows:—

- (1). Marigolds; visited by males of *Halictus ligatus*, Say, and males and females of some small species of *Halictus* not yet studied.
- (2). Marguerite; visited by one ♀ *Perdita snowii*, Ckll. This was a most interesting capture, as the species was hitherto known only by a unique specimen taken in Colorado. On Oct. 2nd I took at the marguerite a ♀ *Perdita zebata*, Cr. (which normally visits *Cleome*), and a ♀ *Halictus*.

A single patch of the wild golden-rod (*Solidago canadensis*), almost over, was visited by a ♀ *Halictus* on Sept. 20th.

Española, N. M., Sept. 25th.

Two males of *Halictus* were taken while the train stopped. There were found here, close to the station, not only the common *Xanthium canadense*, but a quite different species of *Xanthium*, which to my surprise is reported by Prof. Wooton as differing from anything in the herbarium of Columbia University.

Embudo, N. M., Sept. 25th to 27th.

Alt. 5800 ft. Lat. 36° 10'. Ann. precip. 9.74 inches.

This locality was entirely new ground, entomologically speaking.

The following flowers were collected, but were not observed to be visited by bees:—*Nasturtium sinuatum*, *Campanula parryi*, *Melilotus indica*, *M. alba*, *Fallugia paradoxa*, *Amarantus palmeri*, *A. gracilis*, *Bahia absinthifolia*, *Aphyllon multiflorum*, *Euphorbia serpyllifolia*, *Polygonum* (perhaps *pringlei*). These were all determined by Prof. E. O. Wooton. In the Mesilla Valley *Melilotus indica*, when massed in quantity, as was not the case at Embudo, is attractive to small bees (*Halictus*, *Sphecodes*, *Calliopsis*, *Prosapis*) at the beginning of May. I have taken *Nomia nevadensis* at *Fallugia paradoxa* at Albuquerque at the end of June; it is fairly attractive to hymenoptera when occurring in quantity; when collected at Embudo it was nearly over, only an occasional flower being seen. On Aug. 13th, at Mesilla, I saw *Aphyllon multiflorum*, Gray, persistently visited by a *Ceratina*; a single honey-bee also visited the flowers. The flowers turn indigo blue when subjected to cyanide fumes.

The following flowers at Embudo were visited by bees:—

- (1). *Cleome serrulata*. Almost over; visited by *Prosapis* n. sp., ♀.
- (2). *Bigelovia* (or *Chrysothamnus viscidiflora* (det. E. O. Wooton)).
- (3). *Bigelovia* sp.

There were two species of *Bigelovia*, but unfortunately when collecting I did not at first appreciate this fact, and the collections were not separated. From the lower-growing form I took *Perdita rhodura*, Ckll. ined. (abundant), *Andrena vulpicolor*, Ckll. ined. (several), *Podalirius maculifrons* (Cr.), *Agapostemon*, ♂, ♂, and a ♂ *Colletes* new to me. On the taller species *Perdita affinis*, Cr. (new to N. M.) was common. The other *Bigelovia* bees at Embudo were *Colletes americana*, Cr., ♀, *C. simulans*, Cr., ♀ (new to N. M.), *Perdita subfasciata*, Ckll. ined. (one), *P. townsendi*, Ckll. (hitherto supposed peculiar to the White Sands), *Calliopsis coloradensis*, Cr. (one), and sundry females of *Melissodes*. The new *Andrena vulpicolor* is a particularly fine species, with the thoracic pubescence of a foxy-red colour.

To complete the list of Embudo bees, it may be mentioned that a female *Agapostemon texanus*, Cr., was taken from a hole in the ground.

Rinconada, N. M., Sept. 26th.

This is only a few miles above Embudo. Two species of flowers were visited by bees:—

- (1). *Verbesina encelioides*; visited by *Halictoides marginatus* (Cr.), *Heriades variolosa* (Cr.), which is new to N. M., *Megachile* sp. ♂, *Megachile* sp. ♀, and *Megachile* sp. ♀.
- (2). *Bigelovia*, a tall species; visited by *Melissodes menuacha*, Cr.,

Colletes americana, Cr., *Colletes* sp. ♂ (new to me), *Agapostemon* sp., ♂, and *Calliopsis* n. sp. near *coloradensis*. Also by the butterfly *Pyrameis cardui* and the syrphid fly *Chrysogaster bellula*, Williston.

It is thus seen that the visitors observed at these two *Compositæ* were entirely different.

Las Cruces, N. M., Sept., Oct., 1895.

The following collections of autumnal bees have not heretofore been reported:—

- (1). *Verbesina encelioides*; Oct. 9th, visited by a ♀ *Pseudopanurgus athiops* (Cr.).
- (2). *Aster hesperius*, Gray; Oct. 4th, seemed little attractive to bees: visited only by *Agapostemon mellicentris* (Cr.), ♂, and a ♂ *Halictus*.
- (3). *Baileya multiradiata*; Oct. 23rd, visited by *Parandrena rhodocera* (Ckll.).
- (4). *Helianthus annuus*; Sept. 21st, visited by *Panurginus perlævis* (Ckll.), *Halictoides marginatus* (Cr.), in great numbers, *Andrena pulchella*, Rob., *Melissodes agilis*, Cr., and *Podalirius maculifrons* (Cr.).

It is curious that the sunflower *Andrena* at Las Cruces should be *A. pulchella*, while that at Albuquerque is *A. helianthi*.

Las Cruces, N. M., Aug. 23rd, 1897.

In the *Larrea* zone close to Las Cruces the following were collected by Prof. C. H. T. Townsend and the writer from flowers of *Cesallia sinuata*, Lag. (Loasaceæ):—

Melissodes luteicornis, Ckll., ♂, *Centris casalpina*, Ckll., ♂, *Podalirius californicus*, Cr., ♂, *Anthidium maculifrons*, Sm., ♂, *Bombus* near *fervidus*, prob. n. sp.

Mesilla, N. M., Aug. 21st, 1897.

The flowers of *Martynia* sp. were observed to be visited by *Podalirius vallorum*, Ckll., ♀. On Aug. 19th, at Mesilla Park, *P. vallorum* ♂ was visiting a cultivated *Chilopsis*. The two species of flowers mentioned, though of quite different affinities, are not dissimilar in colour and form.

Mesilla, N. M.

OBITUARY.

OSBERT SALVIN.

THE death of this well-known and highly-respected ornithologist and entomologist took place suddenly, though not altogether unexpectedly, at Hawksfold, near Haslemere, on June 1st, from an old-established heart disease, which had been borne stoically and contemplated cheerfully. He was born at Finchley in 1835, and was the only surviving son of Mr. Anthony Salvin, a well-known architect. Shortly after graduating at Cambridge as Senior Optime in the Mathematical Tripos of 1857, he made a Natural History Expedition to Tunis and Algeria, in the company of Mr. W. H. Hudleston and Mr. (now Canon) Tristram, both of whom survive. In the autumn of the same year he made the first expedition to a country with which his life's work was to be largely associated; this was his visit to Guatemala, where he stayed chiefly in company with the late Mr. G. U. Skinner, the well-known collector of orchids, till the middle of 1858, revisiting the same region in about a year, and for a third time in 1861, in company with his friend and future coadjutor, Mr. F. D. Godman. After his marriage, in 1865, he with his wife made a fourth journey to Central America. There can be no doubt that these expeditions incited the project and prepared the way for the publication of '*Biologia Centrali-Americana*,' of which 142 parts have already appeared, and which is still unfinished.

From the foundation of the Strickland Curatorship in the University of Cambridge, in 1874, Mr. Salvin accepted and held that office until 1883, when he succeeded to the family estate. As an ornithologist, he edited the third series of the '*Ibis*,' of which he was one of the founders; was author of a '*Catalogue of the Strickland Collection*' in the Cambridge Museum; to the British Museum Catalogue of Birds he contributed the enumeration of the *Trochilidæ* and *Procellariidæ*; completed and arranged the late Lord Lilford's '*Coloured Figures of British Birds*,' and