small portion of Laporte county and the greater portion of Porter and Lake counties, and will reappear next in 1905.

Brood VIII is almost entirely confined to the southern counties and was really very abundant in 1889 only in Harrison county. I have indicated by a dot on the map the localities where I know from personal knowledge the insect occurred, to which localities Mr. C. L. Marlatt, in Bull. 14, N. S., U. S. Dept. Agr., Div. Ent., has added others which I have indicated by a O. The occurrence in Tippecanoe county was at Lafayette, a single female having been found by one of the sons of Dr. E. Test of Purdue University. This is the weakest in point of numbers of the three broods, and will in time become totally extinct, largely, at least, owing to the attacks of the English Sparrow, *Passer domesticus*. It will next appear in 1906.

Some Insects Belonging to the Genus Isosoma, Reared or Captured, in Indiana. By F. M. Webster.

Isosoma grande Riley. This was reared from wheat at Oxford and Lafayette, and was the first proof secured of the presence of a dimorphism, and alternation of generations in *Isosoma tritici*, as it was then known, the latter being now known as *minutum*, the wingless spring and winter generation; and the former as the winged, summer generation, the one having been bred from the eggs of the other by myself.

Isosoma captivum Howard. Captured from *Poa pratensis* at Lafayette. Type.

Isosoma maculatum Howard. Captured with the preceding. Type.

Isosoma tritici Fitch. Reared at Lafayette and elsewhere, and collected on grass at Lafayette.

Eurytomocharis eragrostoidis Howard. Reared at Lafayette from the stems of *Eragrostis poeoides*. Type.

For descriptions of these species, as well as illustrations of them, see Bulletin No. 2, Technical Series, Division of Entomology, U. S. Dept. Agr., by Dr. L. O. Howard.

Lake County Crow Roosts. By T. H. Ball.

[Abstract.]

The main roosting places in these later years, so far as ascertained, are two. One is five miles south of Crown Point, in a pine grove covering an area of about four acres on a large farm well out, in what was once

a wide and open prairie. For several years the crows were there in large numbers, but some three years ago boys shot into the roost and drove them away. They have returned. Mrs. George Schmall estimates the number roosting there at one thousand.

This grove is a "wind breaker," the trees, Scotch and Austrian pine, were set out very thick many years ago. It makes a grand shelter in the winter time. Many of these crows from this pine grove go in a southeasterly direction to find food in the Kankakee marsh region.

The second crow roost of the county is nine miles northwest of Crown Point on both sides of the "Panhandle" railroad, in groves of small oak trees, and one evergreen grove. I visited this locality Tuesday, December 27, 1898. About one mile from it I saw, at 2 p. m., two or three hundred crows feeding in a corn field. Reaching the farm house I learned that two or three pairs of crows selected these groves in 1875. The number of individuals in this colony now may be placed at two thousand. Many of them pass into Illinois to get food, passing in a southwesterly direction over Dyer, on the State line, mornings, sometimes two hundred in a flock.

The Distribution of Blood Sinuses in the Reptilian Head.

By H. L. Bruner.

[Abstract.]

The principal blood sinuses of the reptilian head are the following:

1. The intra-cranial sinuses, which were first described by Rathke[1] in 1839.

2. The nasal sinus, which surrounds the external naris and the nasal vestibule; it was observed and described by Leydig[2] in 1872.

3. The orbital sinus, which lies between the eyeball and its orbit. This sinus was first investigated by Weber[3] in 1877.

The development of the above-mentioned sinuses has been worked out by Grosser and Brezina[4] in the snake (Tropidonotus natrix).

[1] Rathke: "Entwicklungsgeschichte der Natter (Coluber natrix)." Königsberg, 1839.

[2] Leydig: "Die in Deutschland lebenden Arten der Saurier." Tübingen. 1872.

[3] Weber: "Nebenorgane des Auges der Reptilien." Archiv für Naturgeschichte, 43 Jahrg., Band I.

[4] Grosser und Brezina: Morphologisches Jahrbuch., Band 23, 1895.

On the Regulation of the Supply of Blood to the Venous Sinuses of the Head of Reptiles, with Description of a New Sphincter Muscle on the Jugular Vein. By H. L. Bruner.

[Abstract.]

The remarkable development of blood sinuses in the reptilian head has received no explanation at the hands of earlier investigators. The work of the writer shows that the origin of these sinuses is due to periodical constriction of the jugular vein by a ring-like muscle, whose contractions thus lead to an increased blood pressure in the region drained by the vein.

In Phrynosoma this ring-muscle, which is composed of striated fibres, is attached to the lateral end of the ex-occipital bone, beneath which the jugular receives the posterior cerebral vein. Immediately behind the mouth of the latter vein, the ring-muscle embraces the jugular. The muscle occurs also in turtles (Emys) and snakes (Tropidonotus).

According to the observations of the writer on lizards, the distention of the extra-cranial blood sinuses is of great importance at the time of moulting, when the removal of the old epidermis is greatly facilitated by it, particularly in the region of the eyes and nasal openings. Under ordinary circumstances, such distention probably serves to express emotion of various kinds.

The above-mentioned facts furnish a basis for an explanation of the habit of ejecting blood from the eye (orbital sinus), for which Phrynosoma is noted.

For additional details, the writer refers to the paper itself, which will be published in full elsewhere.

Note on the Aberrant Follicles in the Ovary of Cymatogaster.* By George L. Mitchell.

The thickness of the ovarian follicle varies in different vertebrates inversely with the size of the egg. In species containing large eggs the thickness of the follicle *decreases* relatively with the growth of the egg. In the bird and frog it is only in the smaller eggs that the single layer of follicle cells may be distinguished in sections. The rapid growth of the egg soon stretches this layer of cells so that it becomes finally indistin-

*Contributions from the Zoölogical Laboratory of the Indiana University, No. 25.