had lived to the fourth day of incubation or longer were examined for possible duplication.

Two sets of complete, monovular twins, 27 anterior duplications and 63 posterior duplications were found among 64,716 Single Comb Rhode Island Red embryos and chicks examined. Among 57,646 embryos and chicks from various other breeds and crosses, there were one set of complete monovular twins, 12 anterior and 31 posterior duplications. Thus there was a total of 92, or 0.142 per cent. of duplication among Single Comb Rhode Island Reds but only 44, or 0.076 per cent. among the others. The probability that the difference between these two groups is due to chance is less than one in a hundred as judged by the X^2 test. Further, the incidence of duplication among the Rhode Island Reds was greater than that for the mixed group in each of the five years during which data were collected.

Stockard[1] attributed polyembryony in birds to interruption of development before the completion of gastrulation. Riddle[2] sought to test Stockard's hypothesis by retarding the development of prematurely laid (4 to 24 hours) eggs of pigeons and doves but was unable to produce duplications. The difference in incidence of duplication between the two groups of data presented in the present communication may indicate the presence of inherited factors influencing duplication among chick embryos. Obviously, the presence of such factors has not been demonstrated.

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SOME NEW RECORDS OF OCCURRENCE OF NORTH AMERICAN FRESH-WATER SPONGES

So little is known of the distribution of fresh-water sponges on our western coast that it seems wise to make available all findings as a matter of record.

Through the kind cooperation of Dr. L. E. Griffin, of Reed College, Portland, Oregon, we have been enabled to examine two specimens from his collections. The first is a specimen of *Spongilla fragilis,* taken from a flume leading from a pond on the college campus. It was collected in October, 1929. The sponge is full of very abnormal spicules. The skeletal ones are smooth amphioxi, many of them bearing ball-like enlargements in the centers; other types of irregularities are also numerous. The gemmule spicules are extremely variable in size and are also often quite abnormal in structure, enlarged in the center or provided with angular projections. There are large numbers of small balls of silica, several times the diameter of the skeleton spicules, scattered through the sponge; some of them are regular smooth spheres, while others are distorted in shape and bear spines projecting at right angles to their surfaces—the spines vary a great deal in size and in number from one or two to many. The second specimen is *Spongilla lacustris,* collected by M. R. Clare in August, 1928, from Mud Lake, west of Bend, Oregon, in the Cascade Mountains, at an elevation of about 4,500 feet. The specimen bore no gemmules.

Dr. Trevor Kincaid has kindly given me bits of three specimens from his collection. Two specimens were collected from Lake Ozette in the extreme northwest corner of the state of Washington on May 29, 1932. One of these is *Spongilla lacustris,* with thin skeleton spicules, and the other is *Spongilla fragilis,* with very variable gemmule spicules. The third specimen from Dr. Kincaid was taken from the interior of a wooden pipe on the shore of Lake Washington, not far from the University of Washington, where Dr. Kincaid is head of the department of zoology. This specimen unfortunately does not bear any gemmules and can not be identified.

Dr. Jacques Rousseau and Dr. F. M. Victorin, of Quebec, Canada, have kindly sent me three more specimens of Canadian fresh-water sponges from new localities. One is a specimen of *Spongilla lacustris* from "Lac Jaune, near Quebec City, Province of Quebec, August 5th, 1931: collected by Br. Anselme." A second is also a *Spongilla lacustris,* collected by Dr. Victorin in "St. Theodore Co., Joliette, in Laurentides, North of Quebec, September 5th, 1931"; this sponge has somewhat heavier skeleton spicules than those of the first specimen. The third specimen is *Spongilla fragilis,* collected by Dr. F. M. Victorin and Jules Brunel in "Canal de Chambly, Conté Chambly, Province de Québec."

The writer has also collected some very small, young sponges from a lake in Seattle, Washington, in the fall of 1933, but since the skeleton spicules are regular smooth amphioxi and no gemmules are present, the sponge can not be finally identified. In the fall of 1932, the writer also collected *Spongilla fragilis* in very great abundance from a pond near Spring Valley, N. Y., where it was covering the stems of plants and the wall of a stone-lined runway with a thin coat over large areas. The pond had been drained and the sponge was very full of gemmules.

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SWARMING BEETLES

ON July 15, 1934, on the summit of Mount Pisgah, in North Carolina, I observed a swarming of Coc-

[1] C. R. Stockard, *Am. Jour. Anat.,* 28: 115–277, 1921.
[2] O. Riddle, *Am. Jour. Anat.,* 32: 199–252, 1923.