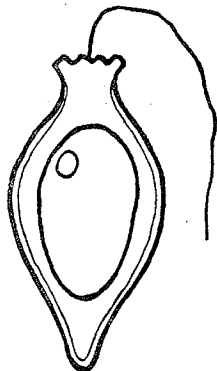


a new species. "Serrata" in the name of this new variety refers to the serrated or toothed edge of the collar around the flagellum; "glabra" refers to the smooth lorica of this variety. Its smooth surface makes it differ from the other most closely related varieties of the species; several other species have serrated collars but their loricas are not smooth.

Variety *serrataglabra* most closely resembles *T. urceolata* var. *punctata*, reported from Poland by Drezepolski, in size but differs



Trachelomonas urceolata
var. *serrataglabra*

from it in the character of its lorica surface; variety *punctata* is covered with "little buttons."

Skvortzov described *T. swirenko* var. *polonica* from Poland; it differs from variety *serrataglabra* in size; and, also, the lorica of variety *polonica* is irregularly dotted while this new variety from Maine is smooth.

Another, and larger, species with some resemblance to *T. urceolata* var. *serrataglabra* is *T. allorgei* reported from France; but it too has a punctate lorica.

Description of *T. urceolata* var. *serrataglabra*:

Shape: flattened elongate oval with a pointed posterior end and a flaring collar with serrated edge; this collar surrounds the single flagellum.

Lorica: light brown color with perfectly smooth surface.

Endoplasm: green with pink stigma.

Dimensions: length of entire body (exclusive of flagellum) 42μ
length of posterior tip 5μ
length of collar 9μ
width of body 18μ
length of flagellum 50μ

REFERENCES

Drezepolski, R., 1922, Odb. z rozpraw i wiadomosci z Muzeum im Dzie-
duzyckich. Tome VII-VIII.

—, 1925, Kosmos jour. soc. pol. des Nat. Kopernik, 50.

Skvortzov, B. V., 1925, Aus der Biolog. Sungari River Station zu Harbin der
Gesellschaft zur Erforschung der Mandschurei, Bd. 1. Heft 2. Harbin.

—, 1938, Archiv. f. Protist., 90.

A PRELIMINARY SURVEY OF THE PROTOZOA OF BEAVER LAKE NEAR SALSBURY COVE, MAINE

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Many of the invertebrates of Mt. Desert Island, Maine, have been surveyed but apparently the Protozoa have not been studied very extensively for no record of such work is known to the older members of the Mount Desert Island Biological Laboratory Corporation. In order to acquaint future research workers with some of the fresh water Protozoa to be found on Mt. Desert Island, a preliminary survey was made of a pond near the village of Salsbury Cove in July 1940. The body of fresh water selected for study is south of the property of the Biological Laboratory and the pond is known locally by such names as Beaver Lake, Hamilton Pond, or Red Meadow Pond. The pond was created by building a dam and thus flooding a swamp about 1930.

The following genera and species from Phylum Protozoa were observed: (arranged alphabetically by classes)

MASTIGOPHORA

Anisonema acinus

Astasia sp.

Bodo sp.

Chilomonas paramecium

Chlamydomonas sp.

Chromulina pascheri (?)

Colacium sp.

Colponema loxodes

Cryptomonas ovata

Entosiphon ovatum

Euglena acicula

Euglena deses

Euglena limnophila

Euglena sanguinea

Euglena spirogyra

Glenodinium cinctum

Lepocinclis ovum

Mallomonas sp.

Pandorina morum

Peranema trichophorum

Peridinium sp.

Phacus brevicaudata

Phacus longicauda

Phacus pyrum

Phacus triquetra

Rhipidodendron splendidum

Synura uvella

Trachelomonas dangeardi var.
glabra

Trachelomonas hispida

Trachelomonas horrida

Trachelomonas oblonga

Trachelomonas spinosa

Trachelomonas urceolata var.
serrataglabra

Trachelomonas volvocina

Urceolus cyclostomus

SARCODINA

Amoeba dubia

Amoeba sp.

Actinophrys sol

Arcella mitrata

Arcella vulgaris

Cyphoderia ampulla

Diffugia acuminata

Diffugia constricta

Diffugia corona

Diffugia pyriform

Diffugia sp.
Diplophrys archeri
Hyalosphaenia papilo
Nuclearia sp.
Valkamfia limax

CILIOPHORA

Acineta sp.
Aspidisca lynceus
Chilodon sp.
Cinetochilum margaritaceum
Coenomorpha medusula
Coleps amphacanthus
Coleps elongatus
Colpidium striatum
Condyllostoma vorticella
Dileptus sp.
Epistylis plicatilis
Euplotes charon
Halteria grandinella
Holosticha sp.
Holophrya sp.
Lembadion sp.
Lacrymaria olor
Loxodes rostratum

Loxophyllum meleagris
Loxophyllum sp.
Nassula aurea
Nassula sp.
Metopus sigmoides
Mesodinium sp.
Oxytricha fallax
Paramecium bursaria
Paramecium caudatum
Pleuronema sp.
Prorodon sp.
Spirostomum ambiguum
Stentor coeruleus
Stentor igneus
Stentor polymorphus
Stentor roselii
Stentor viridis
Stylonychia mytilus
Trachelius ovum
Tracholophyllum clavatum
Urocentrum turbo
Uroleptis pisces
Vorticella sp.
Zoothamnium nutans

SOME EXPERIMENTS ON THE EFFECTS OF HYPOPHYSECTOMY AND PITUITARY IMPLANTATIONS ON THE MALE *FUNDULUS**

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The endocrine relationships in the sexual activities of fish are very imperfectly known. The present experiments are a continuation of our studies on the sexual cycle of *Fundulus* (Burger '39, '40).

Adult male *Fundulus* hypophysectomized shortly after maximal spring spermatogenesis show an inhibition of spermatogenesis for stages beyond those of spermatogonial multiplication. While spermatogonial divisions occur they do not become numerous enough to cause a progressive increase in the number of these cells. The complete inhibition of the later stages of spermatogenesis is not immediately effected. A few cysts continue to form sperm for as long as one month after hypophysectomy. By two months after the ablation of the hypophysis spermatids no longer were formed. These results confirm those of Matthews ('39).

Both hyposectomized adult male *Fundulus* and males which re-

* Aided by a grant from the American Philosophical Society; this grant administered 1939-40 by T. H. Bissonnette.

ceived blank operations were maintained until sexual involution was well established. Implantations into the body cavity of each fish of twenty or fifteen fresh pituitaries from normal adult male *Fundulus* caused within two weeks a recrudescence of the testes in all fish treated. For example, ten hypophysectomized fish treated with twenty glands each had the average testicular volume quadrupled and the average weight doubled within two weeks when compared with non-implanted control hypophysectomized fish.

It is concluded that the pituitary of the male *Fundulus* contains gonadotropic material and the testes of the male, hypophysectomized or not is responsive to this material. The data secured together with that secured in a study of the normal sexual cycle gives a clear picture of the cycle of the pituitary, at least as far as its gonadotropic activity.

REFERENCES

- Burger, J. W., 1939, Biol. Bull., 77: 96-103.
 ———, 1940, Bull. Mt. Desert Isl. Biol. Lab., 1940: 20-21.
 Matthews, S. A., 1939, Biol. Bull., 76: 241-250.

ON THE RELATION OF DAY-LENGTH TO THE PERIOD OF REFRACTORINESS TO PHOTOPERIODIC SEXUAL STIMULATION IN THE MALE STARLING*

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Once an appropriate period of spermatogenesis has been completed in the male starling, the testes undergo an involution and remain naturally in a state of sexual quiescence until natural day-lengths begin to increase during the following winter. After the maximum of sperm formation (April-May), the day-lengths still naturally increase, and even during the summer they remain long enough to be stimulating to birds which are not refractory to photoperiodic stimulation, i.e., fall and winter birds (Burger '40). The failure of the starling to form sperm during the summer is obviously not due to insufficient daily illumination, but to the establishment of a refractoriness to the erstwhile stimulating effects of long days. The experiments to be described inquire into the problem of whether or not the duration of this refractory period can be modified by photoperiodic manipulations.

Two experiments of similar nature were performed. Beginning on February 18, twenty-four adult male starlings were given daily fifteen hours of solely artificial illumination. These birds were thus put through a precocious spermatogenesis. On April 19, when testicular regression was well established, eight of the males were further continued on a daily light ration of fifteen hours. Another eight starlings from the original lot had their daily light reduced to nine hours

* Aided by a grant from the American Philosophical Society; this grant administered in 1939-40 by T. H. Bissonnette.