

means of the front legs and the entire surface of this egg-laying apparatus was judiciously cleaned. Such an operation is probably necessary since the juice exuding from the wound made in the living leaf would tend to cling to the surface of the ovipositor thus hindering its future operations. When the katydid had cleaned the ovipositor to her thorough satisfaction, she walked slowly along the edge of the leaf and, choosing another likely spot, she again went through the performance, laying a second egg.

The eggs of *Phaneroptera pistillata* are oval in shape and yellow in colour. Their extreme flatness may be judged by the fact that if they are laid between the upper and lower layers of a blade of grass there is only a slight distortion of the plane surface of the latter. The eggs are approximately 5 mm. in length and 2 mm. in width, tapering slightly towards the anterior pole and broadly rounded at the apex. The dorsal edge of the egg is relatively straight and the ventral edge is broadly rounded (Fig. 2)

#### CANNIBALISTIC HABITS

Although the specimens of *Phaneroptera* were

given an ample supply of fresh leaves yet on two occasions a female was observed eating the body of a male. It had not been my good fortune to witness the struggle, if such took place, between the female and its unfortunate companion but, in both cases, the male was still living and feebly attempting to crawl while the female gnawed away at its body. It is doubtful whether such a habit is normal or due to confinement, but I have never witnessed such cannibalism in the field. Hancock (1904) describes a similar occurrence in the case of *Orchelimum vulgare* Harris (*O. glaberrimum*, Burm. of Hancock) and explained the presence of long spines on the first and middle tibiae of this grasshopper as of use in holding its prey in connection with this carnivorous habit. Blatchley (1920) describes the carnivorous habit of *Orchelimum vulgare*, Harris, stating that it has been found "feeding upon the bodies of small moths which in some way it had managed to capture." It is quite likely that a similar carnivorous habit is exhibited among certain members of the Phaneropterinae although I have never witnessed such in nature.

## LIST OF GRASSES (*Gramineae*) OF THE OTTAWA DISTRICT

By W. G. DORE and H. GROH

\*Contribution No. 522 from the Division of Botany, Experimental Farms Branch, Department of Agriculture, Ottawa, Canada.

**T**HE LIST following represents the results of a study of specimens in the National Herbarium, Ottawa, and in the herbarium of the Division of Botany, Central Experimental Farm. It is doubtless still incomplete for the district, which is taken to be the area within a 30 mile radius of the city. This area includes a variety of features: Laurentian plateau, flat St. Lawrence plain, and gently rolling terrain, as well as some bog, sand dune and other diversification. The city of Ottawa at the centre, and the agriculture surrounding it, together contribute numerous adventive species, indicated by an asterisk. The considerable proportion of these which have been introduced as cultivated grasses is a reflection of the economic importance of the family. Native grasses, on the other hand, have come but little into use, belonging largely to the flora of originally forested country rather than of meadow and arable land.

The alphabetical arrangement of names makes for convenience, since botanical sequence in recent works has been undergoing change. Nomenclature is according to A. S. Hitchcock, *North American Flora*, Vol. 17, and *Manual of the Grasses of the United States*, 1935.

*Agropyron pauciflorum* Schur. (= *A. trachycaulum* var. *tenerum*, var. *trichocoleum*, and var. *novae-angliae*) — rare.

\**Agropyron repens* (L.) Beauv.—very common.  
*Agropyron subsecundum* (Link) Hitchc. (= *A. trachycaulum* var. *unilaterale*, var. *ciliatum*, and var. *glaucum*) — rare.

\**Agrostis alba* L. (= *A. stolonifera* var. *major*) — common.

*Agrostis hiemalis* (Walt.) B. S. P. (= *A. scabra*) — frequent, light soils.

\**Agrostis palustris* Huds. (= *A. stolonifera* var. *compacta*; *A. alba* var. *maritima*) — frequent, wet land.

*Agrostis perennans* (Walt.) Tuckerm. — frequent.

- Agrostis stolonifera* L. — rare.
- Alopecurus aequalis* Sobol. (= *A. geniculatus* var. *aristulatus*) — frequent, stream banks and wet places.
- \**Alopecurus pratensis* L. — rare, meadow, Exper. Farm.
- Andropogon furcatus* Muhl. (= *A. provincialis*) — rare, river-banks.
- Andropogon scoparius* Michx. (var. *septentrionalis* and var. *neo-mexicanus*) — rare, river-banks.
- \**Anthoxanthum odoratum* L. — rare, Beech-wood.
- \**Avena fatua* L. — rare, in cultivated oats.
- \**Avena sativa* L. — escaped from cultivation.
- Brachyelytrum erectum* (Schreb.) Beauv. (= *Dilepyrum*) — frequent, woods.
- Bromus ciliatus* L. — frequent.
- \**Bromus inermis* Leyss — frequent, fields and waste places.
- Bromus Kalmii* A. Gray — rare, Rockcliffe.
- \**Bromus secalinus* L. — rare, introduced.
- Calamagrostis canadensis* (Michx.) Beauv. — frequent, marshes.
- Calamagrostis neglecta* (Ehrh.) Gaert. — rare, Aylmer.
- Cinna arundinacea* L. — frequent, woods.
- Cinna latifolia* (Trevir.) Griseb. — rare, woods.
- \**Dactylis glomerata* L. — common, naturalized in fields and roadsides.
- Danthonia compressa* Austin — rare, Chelsea.
- Danthonia spicata* (L.) Beauv. — frequent, light soils.
- Deschampsia caespitosa* (L.) Beauv. — frequent.
- \**Digitaria Ischaemum* (Schreb.) Muhl. (= *D. humifusa*) — frequent, lawns.
- \**Digitaria sanguinalis* (L.) Scop. — rare, gardens.
- \**Echinochloa crusgalli* (L.) Beauv. — frequent, waste places.
- Elymus canadensis* L. (including *E. Wiegandii*) — frequent.
- Elymus glaucifolius* L. (= *E. robustus* var. *vestitus*) — rare, Tetreauville.
- Elymus villosus* Muhl. (= *E. striatus*) — frequent.
- Elymus virginicus* L. (including var. *hirsutiglumis* and var. *submuticus*) — frequent, moist places.
- \**Eragrostis cilianensis* (All.) Link (= *C. megastachya*) — rare, Exper. Farm.
- Eragrostis hypnoides* (Lam.) B. S. P. — rare, wet ground, Hull.
- Eragrostis pectinacea* (Michx.) Nees — rare, railway, Ottawa.
- \**Eragrostis poaeoides* (L.) Beauv. (= *E. minor*) — frequent, railways.
- \**Festuca elatior* L. (= *F. pratensis*) — frequent, meadows.
- Festuca obtusa* Spreng. (= *F. nutans*) — frequent, woods.
- \**Festuca ovina* L. — rare, introduced, sandy soil.
- \**Festuca rubra* L. — rare, lawn, Ottawa.
- Glyceria borealis* (Nash) Batchelder — frequent, shallow water.
- Glyceria canadensis* (Michx.) Trin. (including var. *parviflora* Malte) — frequent, moist places.
- Glyceria grandis* S. Wats. — frequent, along streams.
- Glyceria melicaria* (Michx.) F. T. Hubb (= *G. Torreyana*) — rare, moist woods.
- Glyceria neogaea* Steud. (= *G. pallida* var. *Fernaldii*) — rare, wet ground.
- Glyceria striata* (Lam.) Hitchc. (including var. *stricta* (Scribn.) Fern.) (= *G. nervata*) — common, moist soil.
- Hierochloë odorata* (L.) Beauv. — rare, Shirley Bay and Aylmer.
- Hordeum jubatum* L. — frequent, waste places.
- Hystrix patula* Moench (var. *Bigeloviana* (Fern.) Deam) — frequent, moist woods.
- Leersia oryzoides* (L.) Swartz (including forma *inclusa* Eames) — common, along streams.
- Leersia virginica* Willd. (var. *ovata* (Poir.) Fern.) — frequent, wet woods.
- \**Lolium perenne* L. — rare, sometimes seeded.
- Milium effusum* L. — frequent, wet woods.
- Muhlenbergia foliosa* (Roem. & Schult.) Trin., including var. *setiglumis* (S. Wats.) Scribn. — common, waste land and on shore of Ottawa river.
- Muhlenbergia racemosa* (Michx.) B. S. P. — rare, Gatineau River.
- Muhlenbergia sylvatica* Torr. (= *M. umbrosa*) — frequent, moist woods.
- Oryzopsis asperifolia* Michx. — common, woods.
- Oryzopsis pungens* (Torr.) Hitch. — rare, Constance Bay, Aylmer.
- Oryzopsis racemosa* (J. E. Smith) Ricker — frequent, woods.

- Panicum boreale* Nash — frequent, open ground.
- Panicum Boscii* Poir. — rare, Kingsmere.
- Panicum capillare* L., including var. *occidentale* Rydb. — common weed.
- Panicum depauperatum* Muhl. (var. *psillophyllum* Fern.) — rare, Constance Bay.
- Panicum flexile* (Gattinger) Scribn. — rare, along River above Ottawa.
- Panicum huachucae* Ashe, var. *fasciculatum* (Torr.) F. T. Hubb. (= *P. lanuginosum* var. *fasciculatum*) — common, fields.
- Panicum implicatum* Scribn. (= *P. lanuginosum* var. *implicatum*) — common, fields.
- \**Panicum miliaceum* L. — frequent, waste places.
- Panicum tennesseense* Ashe (= *P. lanuginosum* var. *septentrionale*) — frequent, fields.
- Panicum Tuckermanni* Fern. — rare, thin soil.
- Panicum Wernerii* Scribn. (= *P. linearifolium* var. *Wernerii*) — rare, Aylmer, Ironsides, Rockcliffe.
- Panicum xanthophysum* A. Gray — rare, Aylmer, Wakefield, Constance Bay.
- Phalaris arundinacea* L., including var. *picta* L. — frequent, moist soil.
- \**Phalaris canariensis* L. — frequent, waste land in city.
- Phragmites communis* Trin. (var. *Berlandieri* (Fourn.) Fern.) — rare, Rideau River, Ottawa.
- \**Phleum pratense* L. — very common, meadows.
- Poa alsodes* A. Gray — rare, woods.
- \**Poa annua* L. — common, roadways, lawns, gardens.
- \**Poa compressa* L. — common, dry soil.
- \**Poa nemoralis* L. — rare, Arboretum, White Bridge.
- Poa palustris* L. (= *P. triflora* Gilib.) — frequent, moist ground.
- \**Poa pratensis* L. — very common, lawn, pastures, roadsides.
- Poa saltuensis* Fern. & Wieg. — rare, woods.
- Schizachne purpurascens* (Torr.) Swallen (= *Melica striata*) — frequent, woods.
- \**Secale cereale* L. — rare, escape from cultivation.
- \**Setaria italica* (L.) Beauv. — rare, waste places.
- \**Setaria lutescens* (Wiegel) F. T. Hubb. (= *S. glauca*) — common weed.
- \**Setaria viridis* (L.) Beauv. — common weed.
- Sorghastrum nutans* (L.) Nash — frequent, along rivers.
- \**Sorghum vulgare* Pers. var. *sudanense* (Piper) Hitchc. — rare, escaped from cultivation.
- Spartina pectinata* Link (= *S. Michauxiana*) — frequent, along rivers.
- Sphenopholis intermedia* (Rydb.) Rydb. (= *S. pallens*) — rare, moist woods.
- Sporobolus cryptandrus* (Torr.) A. Gray — rare, sand, Constance Bay.
- Sporobolus heterolepis* (A. Gray) A. Gray — rare, Little Chaudière.
- Sporobolus neglectus* Nash — frequent, sandy soil.
- Sporobolus vaginiflorus* (Torr.) Wood (var. *inaequalis* Fern.) — rare, dry soil, Merivale and Bell's Corners.
- Trisetum melicoides* (Michx.) Scribn. (= *Grapphephorum melicoideum* var. *Cooleyi*) — rare, Chelsea.
- Trisetum spicatum* (L.) Richter var. *molle* (Michx.) Piper — rare, rocky shores.
- \**Triticum aestivum* L. — rarely escaped from cultivation.
- Zizania aquatica* L. var. *angustifolia* Hitchc. — frequent, shallow water.

## ON THE NEST OF THE SORA RAIL (*Porzana carolina* Linn.)

By A. C. NICOL

**T**HE USUAL type of nest built by the Sora Rail is a basket-like structure of dry leaves fastened at its circumference to reed or cat-tail stems several inches above the surface of the water. As a rule it is composed of last season's dead leaves of aquatic plants such as the blue flag (*Iris*), bur-reed (*Sparganium*), cat-tail (*Typha*), and others. Surrounding vegetation is usually bent over the nest so as to form a canopy, which effectively conceals the eggs and protects the brooding bird beneath.



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