

## THE ODONATA OF THE MARITIME PROVINCES.

E. M. WALKER,

Dept. of Biology, Univ. of Toronto, Toronto, Ont.

(Received February 23, 1933).

Very little has been published on the Odonata of the maritime provinces of Canada<sup>1</sup>. Two short local lists<sup>2, 2b</sup> and a number of scattered records in other papers<sup>2-2c</sup> include all that has been hitherto known of their distribution in this region.

Since the writer has gathered a considerable number of records from various sources, which together are sufficient to

<sup>1</sup>Nova Scotia, New Brunswick and Prince Edward Island.

<sup>2</sup>Calvert, Philip P. Notes on some North American Odonata, with descriptions of three new species. *Trans. Amer. Ent. Soc.*, **17**, 23-40 (1890).

<sup>3</sup>Calvert, P. P., and Sheraton, Wm. Notes on Nova Scotian Dragonflies. *Can. Ent.*, **26**, 317-320 (1894).

<sup>4a</sup>Fletcher, Jas. and Gibson, A. Entomological Record for 1907. *38th Ann. Rep. Ent. Soc. Ont. Odonata*, 131-132 (1908). <sup>4b</sup>Entomological Record for 1908. *39th Ann. Rep. Ent. Soc. Ont. Odonata*, 114-115 (1909).

<sup>5a</sup>Gibson, A. Entomological Record for 1914. *45th Ann. Rep. Ent. Soc. Ont. Odonata*, 45 (1915). <sup>5b</sup>Entomological Record for 1917. *48th Ann. Rep. Ent. Soc. Ont. Odonata*, 25-27 (1918).

<sup>6a</sup>Hagen, H. A. Synopsis of the Neuroptera of North America. *Smiths-Misc. Coll.* **14**, xvii + 347, (1861). <sup>6b</sup>Synopsis of the Odonata of North America. *Proc. Bost. Soc. Nat. Hist.*, **18**, 20-96 (1875). <sup>6c</sup>Synopsis of the Odonate Genus *Leucorhina*. *Trans. Amer. Ent. Soc.*, **17**, 229-236 (1890).

<sup>a</sup>Selys-Longchamps, Edmond de. Synopsis de Gomphines. *Bull. Acad. Roy. Belg.*, **21**, (2), 23-112 (1854). <sup>b</sup>Synopsis des Agrionines. *Bull. Acad. Roy. Belg.*, (2) **13**, 286-339 (1862). <sup>c</sup>Synopsis des Cordulines. *Bull. Acad. Roy. Belg.*, (2) **31**, 228-355 (1871). <sup>d</sup>Quatrième Addition au Synopsis des Gomphines. *Bull. Acad. Roy. Belg.*, (2) **46**, 658-698 (1878).

<sup>2a</sup>Walker, E. M. The North American Dragonflies of the Genus *Aeshna*. *Univ. Toronto Studies, Biol. Ser.* No. 11, 1-213 (1912). <sup>2b</sup>Some dragonflies from Prince Edward Island. *Can. Ent.*, **49**, 117-119 (1917).

<sup>2c</sup>The North American Dragonflies of the Genus *Somatochlora*. *Univ. Toronto Studies, Biol. Ser.* No. 26, 1-202 (1925).

give a general idea of the odonate fauna of the Maritimes, it was decided to bring these together in the form of a preliminary list. This list probably includes somewhat less than seventy-five per cent of the total number of species to be expected from the region under consideration. Some of the listed species, which are undoubtedly of general distribution, are still known from not more than one province and in one or two localities only; thus, taken by provinces, the lists are very incomplete. Nearly all the species recorded, however, are to be expected in all three provinces. Two species that do not appear in the list, viz., *Somatochlora williamsoni* Walk. and *S. albicincta* (Burm.) were taken by the writer at a bog lake near Lake Temiscouata, Que., about 25 miles from the New Brunswick boundary line; and two others, *Aeschna sitchensis* Hag.<sup>9</sup> and *A. juncea* L.<sup>10</sup> have been recorded from the Magdalen Islands, which, though belonging to Quebec, are actually nearer Prince Edward Island and Cape Breton Island, N. S., than any part of Quebec.

In the present paper an attempt has been made to include all previous records together with new data based chiefly on the collections which are listed below under the names of the localities and collectors. The abbreviations for the latter, used in the list of species, are given in brackets.

## NOVA SCOTIA.

1. Digby, Annapolis (Granville, etc.), Kings (Kentville, Wolfville), and Colchester Counties (Truro): H. G. Payne (H. G. P.); a few also by J. Russell and M. D. Payne.

2. Annapolis and Nictaux Rivers, near Middleton, and Lawrencetown, Annapolis Co., and Little River. St. Mary's Bay, Digby Co.: Dr. A. G. Huntsman (A. G. H.).

3. Shubenacadie River (Elmsdale, Milford Station), Hants Co.: Dr. A. H. Leim (A. H. L.).

<sup>9</sup>*Ent. Rec.* '17, p. 26    <sup>10</sup>Williamson, *Ent. News*, 13, 146, (1902).

4. Eastern Harbour, Neil's Harbour, Aspy Bay and the vicinity of Grand Étang, Cape Breton Is'and: A. G. Huntsman.
5. Pictou, E. M. Walker (W).

## NEW BRUNSWICK.

1. Scotch Lake, Carlton Co.: W. H. Moore (W. H. M.).
2. Youghall: A. Gibson.
3. St. Andrews and vicinity (Chamcook Lake, Bocabec Lake, Gibson Lake, etc.): A. G. Huntsman (1916-1919), E. M. Walker (1923), W. S. Hall (W. S. H.) (1927), and E. S. Pentland (E. S. P.) (1932).
4. Fredericton and vicinity; St. John; Kings Co., between Sussex and Petitcodiak; St. Margarets and other localities between Shediak (Kent Co.) and Bathurst (Gloucester Co.): E. M. Walker, assisted by Messrs. F. P. Ide and E. H. Walker.

The writer is particularly indebted to Dr. Huntsman and Dr. Leim for their kind donation of all the material which they collected. His thanks are likewise due to Messrs. Gibson, Pentland and Hall for the donation of specimens, to Mr. A. D. Pickett, Provincial Entomologist for Nova Scotia, for the loan of material in the collection of the Provincial Department of Agriculture, Truro, and to Mr. H. G. Payne for the loan of many specimens.

The Odonata of the maritime provinces consist mainly of species of the Canadian zone but include some that are more typical of the Alleghanian, three (*Calopteryx amata*, *Enallagma minusculum* and *Ophiogomphus aspersus*) that are not known to occur as far west as Ontario, and one (*Pantala hymenea*), which is definitely austral but occasionally wanders northward into the Transition zone. St. Andrews, N. B., where more thorough collecting has been done than elsewhere, is situated in the extreme southwestern part of the province but, on the whole, has a decidedly boreal fauna, including such species as *Somatochlora franklini*, *forcipata* and *cingulata*, and *Leucorrhinia hudsonica*. Nevertheless, there is an admixture of such Alleghanian species as *En-*

*allagma vesperum*, *E. exsulans*, *Argia moesta putrida*, *Aeschna verticalis*, and *Libellula lydia*, together with the distinctly austral *Pantala hymeneae*. Doubtless, when the odonate fauna of the Annapolis Valley is better known, it will be found to contain an austral element.

As indicated above, collecting was done by the writer chiefly in 1923 and 1932. In 1923 nearly a month was spent at the Atlantic Biological Station, near St. Andrews, N. B., and much time was given to the collecting and rearing of Odonata. In 1932 Messrs. F. P. Ide, E. H. Walker and the writer motored from Toronto to Rivière du Loup, Que., thence southward through New Brunswick to St. John and eastward to Pictou, N. S., returning through New Brunswick by the coastal route. Collecting was done in the vicinity of Fredericton, St. John, near Petitcodiak, N. B., and Pictou, N. S., and short stops were made at a few other points, chiefly along the outer coast between Shediak and Bathurst.

Some of the stations where collections were made will be briefly described as examples of the more definite or distinctive types of odonate habitats.

#### VICINITY OF ST. ANDREWS, N. B.

In this locality there is no river collecting but there are several fine lakes and some bog-ponds and small, spring-fed brooks. It is a good locality for Somatochloras but a poor one for gomphines. The late season forms have not been properly collected. The brooks were devoid of Calopteryx in 1932 but were inhabited by *Cordulegaster diastatops* and *Aeschna umbrosa*. Somatochloras were abundant, especially *S. forcipata*, *kennedyi* and *walshii*, which are bog or bog-stream species. Under these circumstances it was somewhat surprising that the commonest *Leucorrhinia* was *intacta* instead of *proxima*, although the latter was the more abundant at Bocabec Lake.

Of the several lakes in the vicinity of St. Andrews two only were visited by the writer, viz., Chamcook Lake and Bocabec Lake.

Chamcook Lake is the source of the water supply of St. Andrews and is a clear lake of considerable depth, with rocky and pebbly shores, interesting on account of the land-locked salmon (*Salmo sebago*) and smelt which it contains. Several small ponds, once part of the lake, have been cut off by the railway embankment which follows the south-east shore. Among the dragonflies breeding in the lake itself are *Argia moesta putrida*, *Basiaeschna janata*, *Gomphus exilis* and *Didymops transversa*, while about the largest of the ponds both *Argias* occurred, together with *Lestes rectangularis*, *Ischnura verticalis*, *Enallagma ebrium*, *Basiaeschna janata*, *Tetragoneuria c. simulans* and *Libellula quadrimaculata*. This pond is about 75 yards long, but only a few yards wide. It is very shallow at one end, where the bottom is covered by slippery, angular stones, but is much deeper at the other. It was only at the shallow end, where there was a little boggy patch, that *L. quadrimaculata* flew. *Argia moesta putrida* was probably only a wanderer from the lake. The pond in 1923 was fairly free of vegetation and represented a somewhat early ecological stage.

Bocabec Lake is a shallow body of clear water, less than a mile long and perhaps a fourth as wide, with a short outlet into Passamaquoddy Bay. We examined only the upper end, where it is very shallow and marshy and grown over with a considerable belt of emergent vegetation, chiefly *Equisetum fluviatile*. Dragonflies were very abundant here, the following species having been observed in the two hours or so spent at this station: *Lestes disjunctus*, *Nehalennia irene*, *Enallagma boreale*, *E. minusculum*, *E. civile*, *Aeschna canadensis*, *Gomphus exilis*, *Cordulia shurtleffi*, *Dorocordulia libera*, *Somatochlora cingulata*, *Tetragoneuria c. simulans*, *Didymops transversa*, *Libellula quadrimaculata*, *Sympetrum decisum*, *S. danae*, *Leucorrhinia intacta* and *L. proxima*.

#### VICINITY OF FREDERICTON, N. B.

Collecting was done at a number of stations in the environs of Fredericton but mention will be made of the following only:

(1) A small narrow pond, about two miles south of the city, occupying a depression between the highway and railway embankment and exposed to full sunlight. It was weedy and ecologically mature. On July 9, 1932, it swarmed with dragonflies of the following species: *Lestes uncatulus*, *L. forcipatus*, *Nehalennia irene*, *Ischnura verticalis*, *Enallagma hageni*, *Agriion resolutum*, *Libellula quadrimaculata*, *Sympetrum decisum* *Leucorrhinia intacta* and *L. hudsonica*.

(2) French Lake, an expansion of Rockwell Stream occupying a wide depression and surrounded by an extensive open marsh, visited July 10, 1932. The weather was fine but a strong northwest wind had almost cleared the marsh of dragonflies, except *Enallagma hageni* and *Ischnura verticalis*, which found shelter in the sedge, and teneral of *Sympetrum decisum*, which were emerging from puddles in the marsh. In the lee of a fringe of willows, which formed a scattered zone between the open marsh and the woods, hundreds of dragonflies were sheltered. These were nearly all older individuals of *S. decisum*, but *Dorocordulia lepida* was taken, including a pair in copula, *Leucorrhinia intacta* and *Libellula quadrimaculata*. Other species occurred along the margins of woods nearby, e. g., *Tetragoneuria spinigera*, *T. c. simulans*, and *Somatochlora kennedyi*.

(3) Rockwell Stream, a tributary of the Oromocto River. We collected over a section of the stream a few miles above French Lake, where it pursues a fairly rapid course over a pebbly or stony bottom between wooded banks a few feet high. The water here is peat-stained and not very cold. The principal dragonflies taken were the three species of *Calopteryx*, *Enallagma exsulans*, *Basiaeschna janata*, *Ophiogomphus carolus*, *Gomphus brevis*, *Cordulegaster maculatus* and *Holocordulia uhleri*. *Calopteryx amata* was relatively scarce, the other two species abundant.

#### CARDWELL TOWNSHIP, KINGS COUNTY.

On July 12, 1932 we collected for an hour or so on a clear cold stream, a branch of the Kennebecasis River, which crosses

the highway between Sussex and Petitcodiak. This part of the stream is somewhat smaller than the Rockwell Stream where we collected. Above the highway bridge there is a long stretch of rapids, flowing over small boulders, where *Calopteryx amata* was abundant. Below the bridge the current is slower, the water deeper, with a coarse sandy to gravelly bottom, and here *C. aequabilis* was the commoner species. *Cordulegaster maculatus* and *Ophiogomphus aspersus* were the other dominant species but *O. carolus* was also present. The water was probably too cold for *Calopteryx maculata*.

#### PICTOU, N. S.

In 1932 our collecting was practically all done along a small stream which crosses the highway about nine miles west of the town, on July 14 and 15. This is a small rapid forest stream with shallow riffles and intermittent pools. For a mile or so above the highway bridge it flows through dense woods but it is wide enough to admit the sunlight to a greater or less extent. Here the water was warmer than that of the Rockwell River and much warmer than the stream near Petitcodiak. *Calopteryx aequabilis* and *C. maculata* fairly swarmed, especially the former, while *C. amata* was absent. Other species taken were *Argia violacea*, *Cordulegaster maculatus*, *Basiaeschna janata* and *Lanthus albistylus*. An *Ophiogomphus* was occasionally seen but not captured.

Farther up the stream narrowed down to a small, cold brook flowing slowly through an open marsh, and appeared to be almost devoid of odonate life, only a single *Nehalennia irene* and a newly emerged *Aeschna umbrosa* having been found.

The other species recorded from Pictou were taken mostly from small ponds or pools, which require no special mention.

#### BETWEEN NEWCASTLE AND BATHURST, N. B.

(1) St. Margarets, Northumberland Co., July 16, 1932. We spent about twenty minutes at a running stream close to this village. It is similar to the Pictou stream but larger, with

lower banks. There are shallow rapids with small, rounded, projecting boulders and intermittent pools. Strangely enough only a few *Calopteryx* were seen, one *amata* and the rest *maculata*. *Lanthus albistylus* was taken over the boulders and *Ophiogomphus carolus* also captured, while another larger *Ophiogomphus*, probably *rupinsulensis* was followed for some distance, but escaped as did also a single *Hagenius*.

(2) Moor pool, about ten miles south of Bathurst, July 16, 1932. This is a small pond, about 15 yards long and 3-8 feet wide, in a somewhat open part of a black spruce swamp, where the trees are small and not crowded. There is the usual ground vegetation of sphagnum moss, ericaceous shrubs (*Kalmia*, *Chamaedaphne*, *Ledum*), *Wagnera trifolia*, etc. The only dragonflies observed about the pool were *Nehalennia irene*, *N. gracilis*, *Agrion resolutum* and *Leucorrhinia hudsonica*, all in small numbers. The pool is mentioned as an example of a typical moor or muskeg pond in wholly undisturbed surroundings, and also because of its being a station for the very local *Nehalennia gracilis*.

---

#### ANNOTATED LIST OF SPECIES.

#### ZYGOPTERA.

##### CALOPTERYGIDAE.

##### 1. *Calopteryx maculata* (Beauv.).

N. S.—Digby, 19 VII '09 (J. Russell); Granville Ferry, 16, 20 VII '08 (H. G. P.); Annapolis, 22 VII '21 (H. G. P.); Pictou, 22 VII '14 (W); 9 miles west of Pictou, 14 VII '32, abundant (W); Sydney, C. B., 24 VII '14 (W, Ent. Rec. '14).

N. B.—Rockwell Stream, 10 VII '32, abundant (W); small rapid stream near Gagetown, Queen's Co., 11 VII '32, common (W); St. Margarets, 16 VII '32 (W). Scotch Lake (W. H. M.); Magaguadene River, near mouth, 4 VIII '20 (R. H. Howe).

##### 2. *Calopteryx æquabilis* (Say).

N. S.—Granville Ferry, 16 VII '10 (H. G. P.); Annapolis River, near Middleton, 21 VI '19 (A. G. H.); Nictaux River, 21 VI '19 (A. G. H.); Kentville, 8 VII '13 (H. G. P.); Milford

Sta., Shubenacadie River, 7 VIII '19 (A. H. L.); Elmsdale, Shubenacadie R., 2, 8, 17, VII '20 (A. H. L.); 9 miles west of Pictou, 14 VII '32, very abundant (W).

N. B.—Near Fredericton, 9 VII '32 (W); Rockwell Stream 10 VII '32, very abundant (W); Cardwell twp., Kings, 13 VII '32 (W); Scotch Lake (W. H. M.); St. Andrews, 7 VII '32 (E. S. P.).

These specimens all belong to the eastern race *aequabilis*.

3. *Calopteryx amata* Hagen.

N. B.—Rockwell Stream, 10 VII '32, not uncommon (W); Cardwell twp., Kings, 13 VII '32, abundant (W); St. Margarets, 16 VII '32, 1 ♂ seen (W).

LESTIDAE.

4. *Lestes congener* Hagen.

N. B.—St. Andrews, VIII '16, 2; 16 IX '17, 1 ♂ (A. G. H.).

P. E. I.—Souris (Walker, '17).

5. *Lestes unguiculatus* Hagen.

N. S.—Pictou (Calvert & Sheraton, '94); teneral about margin of pool on small forest stream, 22 VII '14 (W); Truro (H. G. P.).

N. B.—St. Andrews, VIII '16 (A. G. H.).

P. E. I.—Charlottetown, Souris (Walker, '17).

6. *Lestes uncatus* Kirby.

N. S.—Pictou (Calvert & Sheraton, '94); 22 VII '14, common, teneral and adults, some in cop.; Eastern Harbour, C. B., 1 VII '17 (A. G. H.); Neil's Harbour, C. B., 29 VII '17, 13 ♂ 26 ♀ (A. G. H.).

N. B.—Near Fredericton, pool on small stream, 1 ♂ 2 ♀ (W); Rockwell Stream, 10 VII '32 (W); Youghall, 5-11 VII '08 (Gibson); St. Andrews, 18 VII '16 (A. G. H.); 1 VII '23, 1 teneral ♂ and many nymphs in pool.

P. E. I.—Charlottetown (Walker, '17).

7. *Lestes disjunctus* Selys.

N. S.—"Nova Scotia" (Selys, '62); Little River, St. Mary's Bay, 3 IX '16 (A. G. H.); Truro, 12 VII '21, 30 VIII '24 (H. G. P.); Wolfville (27 VIII '31); Dingwall, Aspy Bay, C. B., 27 VII '19 (A. G. H., Ent. Rec. '17).

N. B.—Youghall, 6-18 VII '08 (Gibson); St. Andrews, VIII 1 ♀ (A. G. H.); 1 VII '23, 1 juv. ♂ (W); Bocabec Lake, 19 VII '23, teneral common (W).

P. E. I.—Charlottetown, Souris, Rollo Bay (Walker, '17).

8. *Lestes forcipatus* Rambur.

N. B.—Near Fredericton, small pond beside highway, 9 VII '32, teneral emerging in large numbers (W).

9. *Lestes rectangularis* Say.

N. S.—Truro, 1 ♂ (H. G. P.).

N. B.—Chamcook Lake, 18 VII '23, 1 juv. ♀ from pond cut off from lake (W).

AGRIONIDAE.

10. *Argia moesta putrida* (Hagen).

N. B.—Chamcook Lake, 18 VII '23, teneral and mature males on rocky shore of lake and also on pond cut off by railway embankment (W); second Chamcook Lake, 17 VI '32, 1 ♂ 2 ♀ juv.; 26 VI '32, 2 ♂ 2 ♀ (E. S. P.); Gibson Lake, 10 VII '32, 1 ♂ 2 ♀ (E. S. P.).

11. *Argia violacea* (Hagen).

N. S.—Nine miles west of Pictou, 14 VII '32, common (W); Annapolis River at Lawrencetown, 22 VI '19, 1 ♂ 2 ♀ (A. G. H.).

N. B.—Rockwell River, 10 VII '32; Chamcook Lake, 18 VII '23, a few about the deeper end of the pond cut off by railway embankment (W); second Chamcook Lake, 17 VI '32, 1 ♀ juv. (E. S. P.).

12. *Chromagrion condium* (Hagen).

N. B.—Near St. Andrews, 9 VII '23, 1 ♀ ovipositing in a small cold stream (W); Cardwell twp., Kings, 13 VII '32, 1 ♂ 1 ♀ from small spring-fed pool (W).

13. *Agrion resolutum* Selys.

N. B.—Near Fredericton, 9 VII '32, common about pond beside highway, some pairs in cop.; St. John, 12 VII '32, a few about a quiet recess on the edge of a clear running stream; moor pond about 10 mls. south of Bathurst, 16 VII '32, not numerous but commoner than any other species of Odonata; Youghall, 20 VII '08 (Gibson; Ent. Rec. '08).

14. *Nehalennia irene* (Hagen).

N. S.—Annapolis River, near Middleton, 21 VI '19 (A. G. H.); Pictou, 22 VII '14 (W); 9 miles west of Pictou, 14 VII '32 (W).

N. B.—Near Fredericton, 9 VII '32, common at small stream in pasture, very abundant at pond beside highway, some pairs in cop., ♀s ovipositing, accompanied by ♂; St. Andrews, 15 VII '16 (A. G. H.); 28 VI '23, abundant at small, clay-bottomed pond (W); 1 VII '23, abundant at bog pond; Bocabec Lake, 19 VII '23, frequent (W); Wellington twp., Kent, 16 VII '32, frequent along edge of small stream (W); moor pool south of Bathurst, 16 VII '32, scarce (W).

P. E. I.—Souris (Walker, '17).

15. *Nehalennia gracilis* Morse.

N. B.—Moor pool south of Bathurst, 16 VII '32, 1♂ 1♀ (W).

16. *Ischnura posita* (Hagen).

N. S.—Nictaux River near Middleton, 21 VI '19, 1♂ (A. G. H.).

17. *Ischnura verticalis* (Say).

N. S.—Annapolis River at Lawrencetown, 22 VI '19 (A. G. H.); Annapolis River, near Middleton, 21 VI '19 (A. G. H.); Nictaux River, near Middleton, 21 VI '19 (A. G. H.); Milford Sta., Shubenacadie River, VII '17 (A. H. L.); Shubenacadie River, 7 VIII '19 (A. H. L.); Elmsdale, 2, 22, 28, VI '20, 1, 17 VII '20, 10 VIII '20 (A. H. L.); Bay St. Lawrence, 26 VII '17 (A. G. H.); Truro, 22 VIII '24; Pictou, 22 VII '14 (W); 9 mls. west of Pictou, 14 VII '32 (W); Neil Harbour, C. B., 29 VII '17, abundant (A. G. H.); Plateau River, Cheticamp River, C. B., 4 VIII '17, common (A. G. H.); Dingwall, Aspy Bay, C. B., 27 VII '17, common (A. G. H.); Eastern Harbour, C. B., 1 VII '17 (A. G. H.); Sydney, C. B., 24 VII '14 (W).

N. B.—Near Fredericton, 9 VII '32, quiet pools on small stream (W); French Lake, 10 VII '32, frequent about small sloughs in open marsh (W); Rockwell Stream, 10 VII '32, frequent, apparently from small pools along the shore (W);

St. John River, near Oromocto, and small streams in vicinity, 11 VII '32, common (W); St. Andrews, 23 VI to 19 VII '23, common at many stations (W); 12 VI '32 (E. S. P.); Campo Bello Id., 5 VII '23 (W); Bocabec Lake, 19 VII '23 (W); Scotch Lake (W. H. M.); Cardwell twp., Kings, 13 VII '32, a few about a small, spring-fed pool; Wellington twp., Kent, 16 VII '32 (W); near Newcastle, 16 VII '32, many pruinose ♀s and a few ♂s along the shore of a brackish bay.

P. E. I.—Souris, Rollo Bay (Walker, '17).

18. *Enallagma boreale* Selys.

N. B.—St. Andrews, 23 VI '23, clay-bottomed Typha pond, pair in cop. and 1 ♂ (W); Bocabec Lake, 19 VII '23, not uncommon.

This species is doubtless much commoner than these two records seem to indicate. We found it abundant at a bog lake near Lake Temiscouata, Que., 25 miles from the New Brunswick boundary line.

19. *Enallagma hageni* (Walksh).

N. S.—Annapolis River, 21 VI '19 (A. G. H.); Nictaux River, near Middleton, 21 VI '19 (A. G. H.); Sydney, C. B., 24 VII '14 (W. Ent. Rec. '14); Dingwall, Aspy Bay, C. B., 27 VII '17, common (A. G. H.).

N. B.—Near Fredericton, 9 VII '32, abundant about pond beside highway and quiet weedy parts of small stream and adjoining marsh, many pairs in cop.; 10 VII '32 (W); French Lake, 10 VII '32, common in open marsh surrounding lake; Rockwell River, 10 VII '32, stray specimens along rapid part of river; St. John River, 10 miles southeast of Fredericton, 11 VII '32, common about marshy lagoons close to river; also taken in several other marshy places along the highway 15 to 20 mls. below Fredericton (W); St. Andrews, 30 VI '23, 1 ♂ at bog pond (W); Bocabec Lake, 19 VII '23, fairly common (W); Scotch Lake, 28 VIII '04 (W. H. M.); Youghall, 2 to 20 VII '08, common (Gibson).

P. E. I.—Charlottetown, Souris (Walker, '17).

20. *Enallagma ebrium* Hagen.

N. S.—Pictou, abundant (Calvert & Sheraton, '94); 22 VII '24 (W); Elmsdale, 17 VII '20 (A. H. L.).

N. B.—Chamcook Lake, 6 VII '23, not uncommon at pond cut off by embankment (W); second Chamcook Lake, 26 VII '32 (E. S. P.); 15 mls. north of Shediak, common on quiet brook in open pasture (W).

21. *Enallagma exsulans* (Hagen).

N. S.—Elmsdale, 28 VI '20, 10 VIII '19 (A. H. L.); Milford Sta., Shubenacadie River, 7 VIII '19 (A. H. L.).

N. B.—Rockwell Stream, 10 VII '32, not uncommon, all of rather small size, 1 pair in cop. (W); Chamcook Lake, 17 VIII '27, 2 ♂ 2 ♀ (W. S. H.); second Chamcook Lake, 26 VI '32, 1 ♂ juv. (E. S. P.).

22. *Enallagma minusculum* Morse.

N. S.—Lake Kedgemagooge, 2 VIII to 11 IX (E. B. Warden).

N. B.—Scotch Lake, 7 VII (W. H. M.; Ent. Rec. '07); Bocabec Lake, 19 VII '23, ♂s abundant over shallow water of bay (W).

23. *Enallagma civile* (Hagen).

N. S.—Plateau River, Cheticamp, C. B., 4 VIII '17, 5 ♂ 4 ♀ (W. G. H.; Ent. Rec. '07).

N. B.—Bocabec Lake, 19 VII '23, not uncommon among rushes over shallow water (W); Chamcook Lake, 17 VIII '27, 4 ♂ (W. S. H.); near Newcastle, shore of brackish inlet, 16 VII '32 1 ♂ (F. P. I.).

P. E. I.—Souris (Walker, '17).

24. *Enallagma vesperum* Calv.

N. B.—Chamcook Lake, 17 VIII '27, 1 ♂ (W. S. H.).

## ANISOPTERA.

### ÆSCHNIDAE.

25. *Boyeria vinosa* (Say).

N. S.—Truro, 1 ♂ (H. G. P.); 29 VIII '28, 1 ♀ (H. G. P.); nine miles west of Pictou, 14 VII '32, a half-grown nymph was found under a stone at edge of current. It was too early in the season for the adults.

This species is probably common on most of the running streams in the maritime provinces but the adults must be sought in August and early September.

26. *Basiaeschna janata* (Say).

N. S.—9 miles west of Pictou, 14 VII '32, fairly common. They flew swiftly up and down the stream within a few feet of the water, following one bank or the other but frequently crossing over and sometimes chasing one another. All captured on the river were males but a female was taken hawking in the woods nearby (W).

N. B.—Rockwell Stream, 10 VII '32, 2 ♂ 1 ♀ taken along the river banks, others seen; stream near Gagetown, 11 VII '32, 1 ♀; Chamcook Lake, 6 VII '23, a few individuals patrolling edge of lake and one or two flying over the adjacent pond and in the woods nearby.

The specimens from Pictou and the Rockwell River were old though not much worn; the season was evidently nearly over when they were taken. It is well over by this time in Ontario, south of Lake Nipissing.

27. *Aeschna eremita* Scudd.

N. S.—Annapolis Co., 14 VIII '08, 1 ♂ (H. G. P.); Kentville, 4 VIII '19 ♂ (H. G. P.); Pembroke Lake, near Grand Étang, C. B., 2 IX '19, 10 ♂ 1 ♀ (A. G. H.); Dingwall, Aspy Bay, C. B., 27 VII '17, 1 ♂ (A. G. H., Ent. Rec. '17).

28. *Aeschna interrupta interrupta* Walk.

N. S.—“Nova Scotia” (Walker, '12); Truro, 1 ♂ 1 ♀ (H. G. P.); Dingwall, Aspy Bay, C. B., 27 VII '17, 1 ♂ 1 ♀ (A. G. H., Ent. Rec. '17).

P. E. I.—Souris (Walker, '17).

29. *Aeschna clepsydra* Say.

N. S.—Kedgemagooge, 2 VIII–11 IX, 1 ♂ (E. B. Wardon).

30. *Aeschna canadensis* Walk.

N. S.—Truro, 2 X '13, 14 VIII 24, common (H. G. P.); Pictou (Walker, '12; Calvert & Sheraton, '94, as *A. clepsydra*); Kedgemagooge, 2 VIII–11 IX (R. H. Howe); Dingwall, Aspy Bay, C. B., 27 VII '17 (A. G. H., Ent. Rec. '17).

N. B.—Little River, St. Mary's Bay, 3 IX '16 (A. G. H.); St. Andrews (Walker, '12); 18-21 VIII '18 (A. H. L.); 22 VIII '27 (W. S. H.); 23 VI '23, full grown nymphs and earlier stages found in several of the small bog ponds; 8 VII '23, 2 exuv.; Bocabec Lake, 19 VII '23 (W).

31. *Aeschna verticalis* Hagen.

N. B.—St. Andrews, 16 IX '17, 2 ♂ (A. G. H.).

32. *Aeschna subarctica* Walk.

N. S.—Pictou (Walker, '12).

33. *Aeschna coerulea septentrionalis* Burm.

N. S.—"Nova Scotia" (Hagen, '61).

34. *Aeschna umbrosa* Walk.

N. S.—Truro, common; 28 VIII '27, 2 IX '13; 20 VIII '24, 3 IX '24 (H. G. P.); Bass River, Colchester Co., 26 VIII '21, nymph, penult. stage (A. H. L.); Pictou (Calvert & Sheraton, as *constricta*; Walker, '12); 9 miles west of Pictou, 14 VII '32, ♂ just emerged (W); mountain lake behind Grand Étang, C. B., 2 IX '17, 6 ♂ (A. G. H.); Pembroke Lake, near Grand Étang, C. B., 2 IX '17 (A. G. H.); Eastern Harbour, C. B., (A. G. H.).

N. B.—Bartiloque, 23 VIII '18 (A. H. L.); St. Andrews, 21-30 VIII '17 (A. G. H.); 28 VI '27 (W. S. H.); 12 VII '23, nymphs common in small forest brooks and spring runs, and several full grown ones found in a short drainage ditch from a bog pond (W); small forest stream near Bocabec Lake, 19 VII '23 (W).

P. E. I.—Charlottetown, Souris (Walker, '17).

35. *Aeschna constricta* Say.

N. S.—"Nova Scotia" (Walker, '12); Granville Ferry, 14 VI '08, 1 ♂ (H. G. P.); Truro, 24, 30 VIII '24, 2 IX '24, (H. G. P.).

The date of the Granville Ferry specimen is probably erroneous as *constricta* is a late summer and autumnal species.

36. *Anax junius* (Drury.)

N. S.—Truro, 24 VIII '25, 1 ♀ (H. G. P.); Pictou, 22 VII '14, a single individual observed flying over a small pond on edge of a wood (W).

## GOMPHIDAE.

37. *Hagenius brevistylus* Selys.

N. S.—Shubenacadie River, young nymph (A. H. L.).

N. B.—Scotchtown wharf, Grand Lake, 28 VII '26, 1 teneral ♀ (A. H. L.); St. Margarets, 16 VII '32, one seen at running stream (W).

38. *Ophiogomphus carolus* Needh.

N. B.—Rockwell Stream, 10 VII '32, frequent, flying over riffles and resting on foliage along the banks (W); Cardwell twp., Kings, 13 VII '32, 1 ♂ and an exuvia (W); St. Margarets, 16 VII '32, 2 ♂ (W).

N. S.—Nine miles west of Pictou, 14 VII '32, 1 exuv. (W); Shubenacadie River, nymph penult. stage, probably this species (A. H. L.).

39. *Ophiogomphus aspersus* Morse.

N. B.—Cardwell twp., Kings, 13 VII '32, rather common along a cold stream, 8 taken, all males (W).

40. *Lanthus parvulus* (Selys.)

N. S.—“Nova Scotia” (Selys, '54).

41. *Lanthus albistylus* (Hagen).

N. S.—9 mls. west of Pictou, 14 VII '32, fairly common over shallow rapids, flying close to the water and resting on boulders (W).

N. B.—St. Margarets, 16 VII '32, 2 ♂ from small rapid stream (W).

42. *Gomphus exilis* Selys.

N. S.—Elmsdale, Shubenacadie River, 28 VI '20, 1 ♀ juv., 2, 7 VII '20, common, 13 VIII '19, 1 ♀ (A. H. L.); 12, 13 VI '22, full-grown nymphs (A. H. L.).

N. B.—Chamcook Lake, 6 VII '23, teneral ♂ and several exuviae from rocks and timbers of a wharf; 18 VII '23, common at the same locality; Bocabec Lake, 19 VII '23, common along the shore, males only noticed (W).

43. *Gomphus brevis* Hagen.

N. S.—Elmsdale, Shubenacadie River, 12, 13 VII '32, young nymphs of various stages (A. H. L.). These might possibly belong to *G. abbreviatus* Hagen, which is regional

but has never been taken in Canada. No satisfactory characters have been given for the separation of nymphs of these two related species.

N. B.—Rockwell Stream, 10 VII '32, 2 ♂ 1 ♀ (F. P. Ide & E. H. Walker).

44. *Stylurus scudderi* (Selys)?

N. S.—Elmsdale (A. H. L.); a few young *Stylurus* nymphs were found in a bottle containing a large number of small gomphine nymphs, mostly *G. brevis*. The width of the abdomen is too great for any other known species of *Stylurus* but I have no authentic nymphs of *scudderi* young enough for close comparison. I believe the determination, however, to be almost positive.

CORDULEGASTERIDAE.

45. *Cordulegaster maculatus* Selys.

N. S.—Cape Breton Island (Selys, '78); Annapolis Co., 23 VI '09, 1 ♂ (H. G. P.); Granville Ferry, 6 VII '09, 1 ♂ (H. G. P.); 9 mls. west of Pictou, 14 VII '32, very common along small, rapid forest stream, 1 ♀ ovipositing (W).

N. B.—Scotch Lake (W. H. M.); Rockwell Stream, 10 VII '32, common; the males patrolling the edge of the stream swiftly; 1 ♀ taken while ovipositing (W); small rapid stream near Gagetown, 11 VII '32, ♂ common; Cardwell twp., Kings, 13 VII '32, common along a cold clear stream (W); St. Andrews, 1 ♂ (A. G. H.).

46. *Cordulegaster diastatops* Selys.

N. S.—Pictou (Calvert & Sheraton, '94).

N. B.—St. Andrews and vicinity of Chamcook Lake, 23 VI to 19 VII '23, not uncommon along all the small cold brooks and spring runs, prefers streams in the open but also occurs in the woods (W); Rockwell Stream, 10 VII '32, 1 ♂ (E. H. Walker); small stream near Gagetown, 11 VII '32, 1 ♀ ovipositing (W); near St. John, 12 VII '32, 1 ♂ patrolling a small brook for a distance of a few yards only (W).

The position of the body assumed by the female of this species in ovipositing is less vertical than in *C. maculatus*.

## LIBELLULIDAE.

## CORDULIINAE.

47. *Cordulia shurtleffi* Scudd.

N. S.—“Nova Scotia” (Hagen, '61, as *C. bifurcata*); Pictou 22 VII '14, 1 ♀ seen (W).

N. B.—Youghall, 18 VII '08, 1 ♂ (Gibson); Bocabec Lake, 19 VII '23, ♂s common, flying over zone of emergent vegetation, especially near its outer edge (W).

This species is doubtless much more abundant than is indicated by these meagre records.

48. *Dorocordulia lepida* (Hagen).

N. B.—Nashwaak, near Fredericton, 26 VII '22, 1 ♂ (L. J. S., in Can. Nat. Coll.); French Lake, 10 VII '32, 1 ♂ 2 ♀, incl. pair in cop. in shelter of shrubs on edge of wide marsh (W).

49. *Dorocordulia libera* (Selys).

N. B.—Campo Bello Is., 5 VII '23, 1 ♀ (W); Bocabec Lake, 19 VII '23, fairly common over the zone of emergent vegetation (W).

50. *Somatochlora walshii* (Scudd.).

N. S.—Truro, 3 IX '28, 1 ♂ (H. G. P.); Pictou (Calvert & Sheraton, '94).

N. B.—Near St. Andrews, 6-18 VII '23 (Walker '25); males flew over an open boggy portion of a cold stream.

51. *Somatochlora minor* Calvert.

N. S.—Cape Breton Island (Walker, '25).

N. B.—Small rapid stream near Gagetown, 11 VII '32, 1 ♂ (W).

52. *Somatochlora elongata* (Scudd.).

N. S.—“Nova Scotia” (Hagen, '61); Digby, 3 IX '08 1 ♂ (J. Russell); Annapolis Co., 6 IX '08, 1 ♂ (H. G. P.); Granville, 2 IX '09, 1 ♂ (H. G. P.); Bass River, Colchester Co., 21-26 VIII '21 (A. H. L., Walker '25).

N. B.—Head of St. John River (Walker, '25); near St. Andrews, 9 VII '23 (Walker, '25).

P. E. I.—Rolló Bay, 21 VIII '15 (Walker '17).

53. *Somatochlora tenebrosa* (Say).

N. S.—“Nova Scotia” (Hagen, '61); South Milford, 9 IX '27, 1 ♂ (R. H. Howe).

54. *Somatochlora franklini* (Selys).  
N. B.—St. Andrews, 9 VII '23 (Walker, '25).
55. *Somatochlora kennedyi* Walk.  
N. B.—French Lake, 10 VII '32, pair in cop. from woods near open marsh (F. P. Ide); St. Andrews and vicinity, 26 VI '18 (A. G. H.); 25 VI to 12 VII '23 (Walker, '25).
56. *Somatochlora incurvata* Walk.  
N. S.—Kings Co., 4 VIII '17, 1 ♂ 1 ♀ (H. G. P.); Truro, 2 ♀ (H. G. P.).  
Previously known only from Chippewa Co., Mich., and Lake Nipissing, Ont.
57. *Somatochlora forcipata* Scuss.  
N. S.—“Nova Scotia” (Hagen, '61); Halifax (Walker, '25).  
N. B.—St. Andrews and vicinity of Chamcook Lake, 28 VI to 18 VII '23 (Walker, '25); Mirimichi Bay, 17 VII '18 (A. G. H.).
58. *Somatochlora cingulata* (Selys.)  
N. B. - Bocabec Lake, 19 VII '23, 1 ♀, just emerged, with exuv. (Walker, '25).
59. *Helocordulia uhleri* (Selys).  
N. S.—9 mls. west of Pictou, 14 VII '32, 1 ♂ from small rapid stream (W).  
N. B.—Rockwell Stream, 10 VII '32, 2 ♂ taken over gentle rapids (W); St. Andrews, 1 VII '23, 1 ♂ (A. B. Klugh).
60. *Tetragoneuria canis* (McLachlan).  
N. S.—Truro, 7 VII '26, 2 ♂ (H. G. and M. D. Payne).
61. *Tetragoneuria spinigera* (Selys.)  
N. B.—Near Fredericton, 9 VII '23, 2 ♂ flying back and forth and hovering over a small stream crossing the highway; they kept over the smooth water just above a stretch of riffles (W); French Lake, 10 VII '32, 1 ♂ taken while flying in a sunny opening in a wood adjoining the open marsh (W); second Chamcook Lake, 26 VI '32, 3 ♂ (E. S. P.).
62. *Tetragoneuria cynosura simulans* (Say) Muttk.  
N. S.—“Nova Scotia” (Hagen, '75, as *Cordulia semiaqua*).

N. B.—French Lake, 10 VII '32, 2 ♂ from woods adjoining marsh (F. P. Ide); near Chamcook Mt., 1 VII '23, 2 ♂ flying over grassy knoll at foot of mountain (W); near Chamcook Lake, 6 VII '23, not uncommon, flying over wood road and in openings in woods, a few patrolling the pond adjacent to the lake (W); second Chamcook Lake, 26 VI '32, 3 ♂ (E. S. P.); Bocabec Lake, 19 VII '23, common, flying over the sedges and horsetails growing in shallow water (W).

The specimens from French Lake and the second Chamcook Lakes have a very large, dark patch at the base of the hind wings.

63. *Didymops transversa* (Say).

N. S.—Elmsdale, 22 V '20, 4 full grown nymphs; 13 VIII '19, nymph, penult. stage (A. H. L.).

N. B.—St. John River, near Oromocto, 11 VII '23, 1 ♂ patrolling edge of river (W); McAdam, 22 VI '23, patrolling shore-line of large pond; Chamcook Mt., 1 VII '23, many individuals flying along southern slope of mountain in shelter of woods, up and down the road, or back and forth in small sunny clearings. These individuals doubtless came from Chamcook Lake, where on 6 VII '23 a male was taken and others observed flying swiftly up and down over the water; and exuvia found but no adults seen.

64. *Macromia illinoensis* Walsh.

N. S.—Elmsdale, 1 VI '20, 1 full-grown and 1 penult. stage nymph; 20 VIII '19, 1 penult. stage, 2 juv. (A. H. L.).

LIBELLULINAE.

65. *Libellula quadrimaculata* L.

N. S.—Digby, 19 VII '07, (J. Russell); Granville Ferry, 6 VII '09 (H. G. P.); Pictou (Calvert & Sheraton, '94); 22 VII '14, abundant, some in cop.; 9 mls. west of Pictou, 14 VII '32, many flying over a small trickle of water, with intermittent pools, on a boggy slope; Roundhill, 24 VIII '19 (A. G. H.); Eastern Harbour, C. B., 1 VII '17 (A. G. H.).

N. B.—Near Fredericton, 9 VII '32, a few flying over the pond beside the highway (W); French Lake, 10 VII '32, a few seen on edge of the marsh in shelter of willows (W); marshy

overflow from a small, rapid stream near Gagetown, 11 VII '32, ♀ ovipositing (W); St. John, 12 VII '32, several in openings in woods and over shallow pools in an open sphagnum bog (W); McAdam, 22 VI '23, several flying over marshy spot on bank of small lake (W); St. Andrews and vicinity, 26 VI to 19 VII, common at all ponds and quiet parts of small streams, especially where aquatic vegetation is abundant (W); 28 VI '27 (W. S. H.); Campo Bello Is., 5 VII '23 (W); Bocabec Lake, 19 VII '23, very common over the shallow warm water and the marsh, all the specimens old and worn; Youghall, 2 VII '08 (Gibson); small stream in Wellington twp., Kent, 16 VII '32 (W); near Newcastle, a few flying over a brackish inlet, near the shore, 16 VII '32 (W).

P. E. I.—Charlottetown, Souris (Walker, '17).

66. *Libellula pulchella* Drury.

N. B.—French Lake, 10 VII '32, one was seen distinctly but not captured, near the marsh surrounding the lake.

67. *Libellula exusta exusta* Say.

N. S.—Digby, 3 VI '08 1 ♀ (J. Russell).

This is the only specimen of the race *exusta* that I have seen from Canada. It is small even for this race, the abdomen measuring 21.5 mm. and the hind wing 28 mm.

68. *Libellula lydia* Drury.

N. B.—Near St. Andrews, 6 VII '23, 1 ♂ from puddle on roadside.

69. *Sympetrum decisum* (Hagen).

N. S.—Annapolis Co., 29 VII '20; Truro (H. G. P.), 24 VII '19 (M. D. Payne); Bass River, Colchester Co., 13, 17 VIII '21 (A. H. L.); Pictou (Calvert & Sheraton, '94, as *rubicundulum*); 22 VII '14, common, mostly teneral but some pairs in cop. (W); Neil Harbour, C. B., 29 VII '17, teneral (A. G. H.); Plateau River, Cheticamp, C. B., 5 VIII '17 (A. G. H.).

N. B.—Little River, St. Mary's Bay, 3 IX '16 (A. G. H.). Near Fredericton, 9 VII '32, emerging from small weedy pond in wet pasture, a few teneral also at highway pond (W); French Lake, 10 VII '32, teneral in large numbers in open marsh and numerous adults flying and resting in

shelter of willows at edge of marsh (W); Cardwell twp., Kings, 16 VII '32, a few adults flying about the spring-fed pool, near the river (W); near St. Andrews, 8 VII '23, nymphs abundant in bog pond and adults emerging (W); St. Andrews, VIII '16, 18 IX '17 (A. G. H.); 20 VIII '18, 16, 18 IX '17 (A. H. L.); 7, 22 VIII '27 (W. S. H.); Scotch Lake, 7 VII '04, 7 IX '04 (W. H. M.); Youghall, 3 VII '08, teneral (Gibson).

P. E. I.—Charlottetown, Souris (Walker, '17).

70. *Sympetrum obtusum* (Hagen).

N. S.—Granville Ferry, 20 VII '08; Truro, 1 VIII '25; Pictou (Calvert & Sheraton, '94); 22 VII '14, 1 ♂ juv. (W); Plateau River, Cheticamp, C. B., 5 VIII '17, 1 ♂ juv. (A. G. H.).

N. B.—St. Andrews, 20 VIII '18, (A. H. L.); 16, 18 IX '17 (A. G. H.); Logieville, 26 VIII '18 (coll.?).

P. E. I.—Charlottetown, Souris (Walker, '17).

71. *Sympetrum costiferum* (Hagen).

N. S.—Milton, Yarmouth, 3 IX '20, 6 ♂ (A. G. H.); Granville Ferry, 21 VII '10, 1 ♀ (H. G. P.); Truro, 31 VIII '24, 20 VIII '25. (H. G. P.)

N. B.—Scotch Lake (W. H. M.).

72. *Sympetrum semicinctum* (Say).

N. S.—Truro, 4 IX '29, 1 ♂ (M. D. Payne), 30 VIII '25, 31 VII '26.

N. B.—Scotch Lake (W. H. M.).

73. *Sympetrum danae* (Sulz.)

N. B.—St. Andrews, VIII '16, 1 ♂ (A. G. H.); Bocabec Lake, 19 VII '23, teneral flying in company with *S. decisum* but far less plentiful (W).

74. *Leucorrhinia hudsonica* (Selys.)

N. S.—Nictaux River, 29 VI '19 (A. G. H.); Pictou (Calvert & Sheraton, '94); 22 VII '14, fairly common (W).

N. B.—Near Fredericton, pond beside highway, 9 VII '32, 1 ♂, a few others seen; St. Andrews, 10 VI '17, 1 ♂ juv.; 2 VI '19, 1 ♀; 26, 29 VI '19, common; 15 VII '16, 6 ♂ (A. G. H.); 25-30 VI '23, occasional in sunny openings in woods and about bog ponds, not common this season but usually frequent; 12-16 VI '32, 5 ♂ (E. S. P.).

P. E. I.—Souris (Walker, '17).

75. *Leucorrhinia glacialis* Hagen.

N. S.—Cape Breton Is. (Hagen, '90).

N. B.—Scotch Lake (W. H. M.).

76. *Leucorrhinia proxima* Calvert.

N. S.—Pictou (Calvert, '90; Calvert & Sheraton, '94);  
22 VII '14, common (W).

N. B.—St. Andrews, 26 VI '18, 15 VII '16 (A. G. H.);  
clay-bottomed pond at foot of Chamcook Mt., 28 VI '23, a few  
among a large number of the next species (W); bog pond near  
Chamcook Lake, 16 VII '23, not numerous (W); Bocabec Lake,  
19 VII '23, pruinose males common and of large size.

77. *Leucorrhinia intacta* (Hagen)

N. S.—Pictou (Calvert & Sheraton, '94); 22 VII '14 (W).

N. B.—Near Fredericton, pond beside highway, 9 VII  
'32, ♂'s abundant (W); French Lake, 10 VII '32, a few in shelter  
of willows at edge of marsh and one or two over open water  
(W); St. Andrews, 26 VI to 1 VII, common about all bog  
ponds, all mature (W); 29 VI '32 (E. S. P.); clay-bottomed  
pond at foot of Chamcook Mt., 28 VI '23, abundant (W);  
Bocabec Lake, 19 VII '23, a few but outnumbered here by  
*L. proxima*.

P. E. I.—Souris (Walker, '17).

78. *Pantala hymenea* Say.

N. B.—St. Andrews, 18 IX '30, 2 full grown nymphs were  
taken from a cement tank and others of various sizes were  
found but not preserved (M. W. Smith).