

AN ANNOTATED LIST OF THE ODONATA OF MAINE

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The first records of Odonata from Maine are given by Hagen (1861), who mentioned five species as occurring in the state. In a few later papers (Hagen, 1873, 1874, and 1875, and Walsh, 1863) additional species were recorded from Maine, bringing the total to 27 in 1875. Perhaps the first serious collecting of this group in Maine was done by Wadsworth and Harvey, in Kennebec and Penobscot counties respectively, during the period 1890 to 1902. The published records by Wadsworth (1890, 1891, 1892, 1898, and 1902), Harvey (1891, 1892, 1898 and 1901), Calvert (1890, 1893, and 1894), and others added many species to the state list, so that by the time the first list of Maine Odonata was published (Harvey, 1902), 94 species had been recorded from the state. The latest list of Main Odonata is that of Howe (1917-1921), which includes 104 species.

Table 1

Sources of the First Records of Odonata from Maine Counties
Number of Species

County	First Recorded by												Recorded from each County
	Ahrens	Borror	Bullock	Calvert	Hagen	Harvey	Howe	Johnson	Muttkowski	Procter	Ris	Wadsworth	Walker
Androscoggin		3				3	3						9
Aroostook													0
Cumberland				1	4	4	4					2	15
Franklin						6							6
Hancock	24		8	3		2	27	8		8			80
Kennebec				2		5			1		2	63	73
Knox		34											34
Lincoln		75											75
Oxford					5	11	3						21
Penobscot		3		1	2	72	3						84
Piscataquis		2		1		9	6						20
Sagadahoc		8											8
Somerset				2		3							5
Waldo		8		1			9						19
Washington		4					11						15
York				9		2	11						22
Total County													
Records	24	137	8	20	11	117	77	8	1	8	2	63	10 486

In recent years the principal collecting of Odonata in Maine has been done by Procter (1938) and Ahrens (1941) in the Mt. Desert region, and by Borror (1940) in the Muscongus Bay region. The latest paper on Maine Odonata (Ahrens, 1941) brings the state list to 112 species.

This paper is based on four summers collecting by the writer in Maine (chiefly in the south central part of the state), and a review of the literature. Three species are herein recorded from Maine for the first time: *Enallagma divagans* Selys, *Pantala hymenaea* (Say), and *Williamsonia fletcheri* Williamson, thus bringing the list of Odonata recorded from Maine to 115 species.

The odonate fauna of Maine is essentially Canadian. Of the 115 species herein listed for Maine, all but nine occur also in Canada. For these nine species (*Enallagma divagans*, *Enallagma laterale*, *Ischnura kellicotti*, *Gomphus* (*Gomphurus*) *abbreviatus*, *Gomphaeschna furcillata*, *Cordulegaster sayi*, *Neurocordulia obsoleta*, *Tetragoneuria morio*, and *Celithemis martha*) Maine appar-

ently represents the northeastern limit of their distribution, though at some time some or all of these species may be found in the neighboring Canadian provinces.

Table 1 presents a summary of the records of Maine Odonata by counties; the totals at the right hand side of the table indicate the relative thoroughness with which the various parts of the state are represented by the following list, and the totals at the bottom of the table indicate the relative contribution of various workers to our knowledge of the distribution of Odonata in the state.

In the following list the distribution of each species in the state is given by counties, with the specific localities in each county and the source of the records given in parentheses following the county name. All records other than those cited from the literature were obtained by the writer, and the specimens mentioned are in the writer's collection. In the case of literature references using another species name than that under which the reference is listed, such names are now considered synonyms unless otherwise indicated.

Some difficulty has been encountered in locating the localities mentioned in the literature, and two (Ashland Junction and West Beach) have not been located. Ashland Junction may be near Ashland, in Aroostook Co.; West Beach may possibly represent a misinterpreted label of Wells Beach, in York Co. All localities where collections or observations were made by the writer (except a few described in the writer's 1940 paper) may be found on the topographic maps of the appropriate part of the state. A complete set of the available topographic maps of Maine is given by Leavitt and Perkins (1934).

ZYGOPTERA

AGRIIDAE

1. *Agrion aequabile* (Say). Androscoggin (Auburn, Harvey 1898, p. 59), Kennebec (Manchester, Wadsworth 1891, p. 11; Monmouth, Howe 1921, p. 2), Knox, (North Pond, 2 ♂ 20 VI 40, 1 ♂ 30 VI 40; Stickney Corner, 1 ♂ 15 VII 40), Lincoln (Bristol, 5 ♂ 3 VII 39; Dresden Mills, seen 14 VII 41), Oxford (Norway, Hagen 1875, p. 2; Bethel, Hagen 1889, p. 247), Penobscot (Orono, Harvey 1892, p. 91; Foxcroft and South La Grange, Harvey 1898, p. 59; Bradley, Calvert 1905, p. 1), Washington (Machias, Howe 1917, p. 4).

Found along small, rather swift, and rocky-bottomed streams. Two males will often "dance" around each other in mid-stream, about a foot or two above the water, for minutes at a time.

2. *Agrion maculatum* Beauvais. Androscoggin (Wales, Howe 1917, p. 4), Franklin (Farmington, Harvey 1898, p. 59), Hancock (Mt. Desert, Calvert 1894, p. 242), Kennebec (Manchester, Wadsworth 1890, p. 36), Knox (Forest Pond, 1 ♂ 18 VI 39; North Pond, 1 ♂ 30 VI 40), Lincoln (Bremen, numerous records, from 22 VI to 4 VIII; Bristol, 5 ♂ 3 VII 39; Dresden Mills, numerous records, 14 VII to 3 VIII; Dyer Long Pond, seen 6 VII 40), Oxford (Norway, Hagen 1889, p. 250), Penobscot (Chemo Stream, Harvey 1891, p. 50; Orono, Harvey 1892, p. 91; South La Grange, Harvey 1898, p. 59; Bradley and Foxcroft, Harvey 1902, p. 3; Norcross, Howe 1917, p. 4; Springfield, 1 ♂ 27 VII 41), Piscataquis (Russell Stream, Harvey 1901, p. 178; North East Carry, Harvey 1902, p. 3), Waldo (Liberty, Howe 1921, p. 2), Washington (Machias, Howe 1917, p. 4).

Fairly common along small streams.

3. *Hetaerina americana* (Fabricius). Androscoggin (Auburn, Harvey 1901, p. 178), Kennebec (Winslow, Harvey 1901, p. 178), Oxford (Norway, Hagen 1875, p. 23), Penobscot (Chemo Stream, Harvey 1898, p. 60; Chemo Mills, Harvey 1901, p. 178; Bradley, Harvey 1902 p. 3).

These records represent the eastern limit of the range of this species.

LESTIDAE

4. *Lestes congener* Hagen. Hancock (Mt. Desert, Procter 1938, p. 50), Kennebec (Manchester, Wadsworth 1898, p. 111), Lincoln (Bremen, 1 ♀ 9

VIII 40; Monhegan Island, 2 ♀ 26 VIII 40; New Harbor, 1 ♀ 13 VII 41; Webber Pond, 3 ♂ and 3 ♀ 14 VIII 39, 2 ♂ and 2 ♀ 28 VII 40), Penobscot (Orono, Harvey 1901, p. 179), Piscataquis (Chamberlain Lake, Howe 1921, p. 2), Somerset (North West Carry, Harvey 1898, p. 60).

This species was observed ovipositing at Webber Pond (14 VIII 39); oviposition occurs in tandem, with the eggs being inserted in the stems of *Juncus*, an inch or two above the surface of the water.

5. *Lestes disjunctus* Selys. Hancock (Bar Harbor, Howe 1921, p. 3; Jordan Pond, 3 ♂ 26 VII 38), Kennebec (Manchester, Wadsworth 1890, p. 37; Togus Pond, 2 ♂ and 3 ♀ 29 VII 41), Knox (numerous records, from Crystal Pond, Forest Pond, Grassy Pond, North Pond, and Stickney Corney, 12 VII to 18 VIII), Lincoln (numerous records, from Alna, Biscay Pond, Damariscotta Pond, Duckpuddle Pond, Hastings Pond, Longfellow Pond, Medomak Pond, Muscongus Island, Newcastle, New Harbor, Pemaquid Pond, and Webber Pond, 2 VII to 28 VIII), Oxford (Fryeburg, Harvey 1901, p. 277; Norway, Howe 1917, p. 9), Penobscot (Orono, Harvey 1891, p. 73; Springfield, 1 ♂ 27 VII 41), Sagadahoc (Bowdoinham, 1 ♂ 26 VII 40), Waldo (Moody Pond, 2 ♂ and 1 ♀ 29 VII 40; Norton Pond, 8 ♂ and 3 ♀ 29 VII 40), Washington (Machias, Howe 1918, p. 37), York (Ogunquit, Howe 1921, p. 3).

The most common species of *Lestes* in the state, occurring in marshes, bogs, and along sluggish streams.

6. *Lestes dryas* Kirby. Hancock (Mt. Desert, Johnson 1927, p. 24), Kennebec (Manchester, Harvey 1902, p. 3), Knox (North Pond, 3 ♂ 30 VI 40), Lincoln (Damariscotta Pond, 2 ♂ 6 VII 40; Muscongus Island, many records, 21 VI to 10 VIII; Webber Pond, 1 ♀ 30 VI 38), Penobscot (Orono, Harvey 1898, p. 60), York (Ogunquit, Howe 1921, p. 3).

Most of the specimens of this species taken by the writer were taken fairly early in the season (June and July). It was most abundant at a small grassy pond at the north end of Muscongus Island, which often dries up during August.

7. *Lestes eurinus* Say. Hancock (Mt. Desert, Ahrens 1941, p. 287), Lincoln (Webber Pond, 5 ♂ 5 VII 39, 4 ♂ 6 VII 39, 3 ♂ and 1 ♀ 8 VII 40, 1 ♂ 29 VI 41).

This species is evidently quite rare in Maine. At Webber Pond, where it was first taken in the state, it occurred among the rushes at the edge of a muck-bottomed pond.

8. *Lestes forcipatus* Rambur. Hancock (Mt. Desert, Howe 1920a, p. 96), Kennebec (Manchester, Wadsworth 1890, p. 36, as *Lestes hamata* Hagen), Lincoln (Biscay Pond, 1 ♂ 2 VII 39; Dresden Mills, 1 ♂ 14 VII 41; Muscongus Island, 1 ♀ 24 VIII 40), Oxford (Fryeburg, Harvey 1901, p. 277), Penobscot (Orono, Harvey 1891, p. 73).

9. *Lestes inaequalis* Walsh. Kennebec (Manchester, Wadsworth 1898, p. 111), Lincoln (Damariscotta Pond, 1 ♂ 6 VII 40; Dyer Long Pond, 1 ♂ 8 VII 39, 1 ♀ 6 VII 40; Webber Pond, 1 ♂ 5 VII 39, 3 ♂ 6 VII 39, 1 ♂ 20 VII 39), Penobscot (Orono, Harvey 1891, p. 73; Bradley, Harvey 1902, p. 4), York (Ogunquit, Howe 1921, p. 3).

10. *Lestes rectangularis* Say. Hancock (Mt. Desert, Ahrens 1941, p. 287), Kennebec (Manchester, Wadsworth 1890, p. 37), Knox (Lermond Pond, 1 ♀ 16 VII 41; Oyster River Pond, 1 ♂ and 2 ♀ 29 VII 40; Stickney Corner, 5 ♂ and 1 ♀ 29 VII 40), Lincoln (numerous records, from Bremen, Dick's Pond, Dyer Long Pond, McCurdy Pond, Muscongus Island, Newcastle, New Harbor, and Webber Pond, 6 VII to 24 VIII), Oxford (Fryeburg, Harvey 1901, p. 277), Penobscot (Orono, Harvey 1891, p. 73), Waldo (Norton Pond, seen 29 VII 40), York (Ogunquit, Howe 1921, p. 3).

11. *Lestes unguiculatus* Hagen, Hancock (Mt. Desert, Procter 1938, p.

50), Kennebec (Manchester, Wadsworth 1894, p. 132), Lincoln (numerous records, from Bremen, Euglie Corner, Hog Island, Monhegan Island, Muscongus Island, and Webber Pond, 21 VI to 29 VIII), Penobscot (Orono, Harvey 1891, p. 73), Somerset (North West Carry, Harvey 1898, p. 60), Washington (Machias, Howe 1918, p. 37), York (York Harbor, Calvert 1894, p. 242).

Very common and abundant, occurring in grassy swamps and marshes.

12. *Lestes vigilax* Hagen. Cumberland (Cape Elizabeth, Howe 1917, p. 10), Hancock (Mt. Desert, Johnson 1927, p. 24), Kennebec (Manchester, Wadsworth 1898, p. 111), Knox (Crystal Pond, 1 ♂ 10 VIII 39; Forest Pond, 3 ♂ and 1 ♀ 12 VII 40, 3 ♂ 4 VIII 40; North Pond, 1 ♂ 6 VII 41), Lincoln (numerous records, from Alna, Biscay Pond, Damariscotta Pond, Dick's Pond, Dyer Long Pond, Gross Pond, Hastings Pond, Little Medomak Pond, Longfellow Pond, and Webber Pond, 17 VI to 25 VIII), Oxford (Fryeburg, Harvey 1901, p. 277), Penobscot (Orono, Howe 1917, p. 10), Waldo (Liberty, Howe 1921, p. 3; Moody Pond, 1 ♂ and 1 ♀ 29 VII 40).

Fairly common along reedy lake shores. Most of the specimens collected by the writer were taken in the rushes (*Juncus*) a little way out from shore.

COENAGRIIDAE

13. *Argia moesta* (Hagen). Hancock (Mt. Desert, Howe 1920, p. 90), Kennebec (Manchester, Wadsworth 1890, p. 36, as *Argia putrida* Hagen), Knox (Lermond Pond, seen 16 VII 41), Lincoln (Dresden Mills, 1 ♀ 31 VII 40; McCurdy Pond, numerous records 29 VI to 14 VII; Pemaquid Pond, 1 ♂ 5 VII 39, 1 ♂ 30 VII 41), Penobscot (Orono, Harvey 1891, p. 51, as *Argia putrida* Hagen and *Argia apicalis* (Say) *; Bradley, Howe 1917, p. 12), Waldo (Liberty, Howe 1917, p. 12; Moody Pond, 5 ♂ and 1 ♀ 29 VII 40).

Occurs locally along rocky lake shores and streams.

14. *Argia violacea* (Hagen). Androscoggin (Auburn, 1 ♂ and 1 ♀ 26 VII 40), Hancock (Mt. Desert, Bullock 1891, p. 93), Kennebec (Manchester, Wadsworth 1890, p. 36; East Pittston, seen 14 VII 41), Knox (Lermond Pond, seen 16 VII 41; North Pond, 3 ♀ 30 VI 40, 1 ♀ 16 VII 41; Stickney Corner and Union, seen 15 VII 40), Lincoln (numerous records, from Biscay Pond, Bremen, Dick's Pond, Dresden Mills, Duckpuddle Pond, Dyer Long Pond, Gardiner Pond, Gross Pond, Hastings Pond, Little Pond, McCurdy Pond, Medomak Pond, Muscongus Island, Pemaquid Pond, and Webber Pond, 12 VI to 26 VIII), Penobscot (Orono and Chemo Stream, Harvey 1891, p. 51), Piscataquis (Gore A2 Twp., 1 ♂ 28 VII 41), Sagadahoc (Bowdoinham, 3 ♂ and 1 ♀ 26 VII 40), Waldo (Liberty, Howe 1921, p. 3; Moody Pond, 1 ♂ and 1 ♀ 29 VII 40), Washington (Indian Town, 2 ♂ 27 VII 41).

A common and abundant species along marshy lake shores and sluggish streams.

15. *Amphiagrion saucium* (Burmeister). Kennebec (Manchester, Wadsworth 1892, p. 8), Penobscot (Orono, Harvey 1898, p. 60; Bradley, Harvey 1902, p. 4).

16. *Nehalennia irene* (Hagen). Androscoggin (Wales, Howe 1918, p. 39), Cumberland (Westbrook, Harvey 1898, p. 60; Naples, Howe 1918, p. 39), Hancock (Mt. Desert, Howe 1920, p. 91), Kennebec (Manchester, Wadsworth 1892, p. 8; Monmouth, Howe 1921, p. 5; Togus Pond, 1 ♀ 29 VII 41), Knox (Forest Pond, seen 4 VIII 40; North Pond, 1 ♂ 19 VII 39, 1 ♀ 15 VII 40, 1 ♀ 16 VII 41; Stickney Corner, 1 ♂ and 2 ♀ 29 VII 40), Lincoln (numerous records, from Alna, Biscay Pond, Bremen, Damariscotta Pond, Duckpuddle Pond, Dyer Long Pond, Euglie Corner, Hog Island, Little Medomak Pond, McCurdy Pond, Muscongus Island, Newcastle, New Harbor, North Waldoboro, Pemaquid Pond, Seitensparker Pond, and Webber Pond, 12 VI to 22 VIII), Oxford (Fryeburg,

* The specimens recorded by Harvey as *A. apicalis* were determined by E. B. Williamson as *A. putrida* (= *A. moesta*) (Calvert 1906, p. 31).

Harvey 1901, p. 277), Penobscot (Orono, Harvey 1891, p. 73; Springfield, 1 ♂ 27 VII 41), Waldo (Wales, Howe 1921, p. 5; Norton Pond, 3 ♂ and 1 ♀ 29 VII 40), Washington (Machias, Calais, and Princeton, Howe 1918, p. 39), York (York Harbor, Calvert 1894, p. 242).

Common and often very abundant, in grassy swamps and along marshy lake shores. It is an early summer species and is rare or absent after the first of August.

17. *Chromagrion conditum* (Hagen). Hancock (Mt. Desert, Johnson 1927, p. 25), Kennebec (Manchester, Wadsworth 1890, p. 36), Lincoln (Dick's Pond, 1 ♂ 5 VII 40; Dyer Long Pond, 1 ♂ and 1 ♀ 8 VII 39; Newcastle, 3 ♂ 9 VII 38; Webber Pond, 1 ♂ 22 VI 39), Penobscot (Chemo Stream, Harvey 1898, p. 60; Bradley and Orono, Harvey 1902, p. 4).

18. *Enallagma aspersum* (Hagen). Hancock (Mt. Desert, Ahrens 1941, p. 287), Lincoln (numerous records, from Dick's Pond, Gross Pond, Hastings Pond, Muscongus Island, and Webber Pond, 8 VII to 24 VIII), Oxford (Norway, Howe 1917, p. 16).

Occurs locally along reedy pond shores.

19. *Enallagma boreale* Selys. Hancock (Mt. Desert, Procter 1938, p. 50), Lincoln (numerous records, from Damariscotta Pond, Little Medomak Pond, McCurdy Pond, Muscongus Island, North Waldoboro, Pemaquid Pond, and Webber Pond, 9 VI to 22 VII), Penobscot (Orono, Harvey 1898, p. 60, as *Enallagma calverti* Morse).

Fairly common, early in the season, along marshy lake shores.

20. *Enallagma civile* (Hagen). Hancock (Mt. Desert, Howe 1920, p. 91), Kennebec (Manchester, Wadsworth 1891, p. 11; Togus Pond 8 ♂ and 1 ♀ 29 VII 41), Knox (North Pond, numerous records 16-19 VII), Lincoln (numerous records, from Biscay Pond, McCurdy Pond, Medomak Pond, Muscongus Island, Newcastle, Pemaquid Pond, Seitensparker Pond, and Webber Pond, 25 VI to 26 VIII), Penobscot (Orono, Harvey 1891, p. 73), Sagadahoc (Bowdoinham, 1 ♂ and 1 ♀ 26 VII 40), Waldo (Moody Pond, 4 ♂ 29 VII 40), Washington (Musquash Lake, 4 ♀ 27 VII 41), York (York Harbor, Calvert 1894, p. 242).

Fairly common along pond shores and in marshes, particularly during July and August.

21. *Enallagma cyathigerum* (Charpentier). Hancock (Mt. Desert, Howe 1921, p. 4), Kennebec (Manchester, Wadsworth 1892, p. 8, as the race *annexum* Hagen).

22. *Enallagma divagans* Selys. Knox (North Pond, 5 ♂ 20 VI 40, 9 ♂ and 3 ♀ 30 VI 40).

This is the first record of the capture of this species in Maine, and apparently represents the northeastern limit of its distribution. The specimens were taken along the west shore of the pond; at this point the shore is gravelly and the marshy vegetation (mostly *Juncus*) is rather sparse.

23. *Enallagma ebrium* Hagen. Hancock (Mt. Desert, Howe 1920, p. 90), Kennebec (Manchester, Wadsworth 1891, p. 11), Penobscot (Springfield, 10 ♂ 27 VII 41), Waldo (Liberty, Howe 1921, p. 4), Washington (Princeton, Howe 1918, p. 38), York (Ogunquit, Howe 1921, p. 4).

24. *Enallagma exsulans* (Hagen). Hancock (Mt. Desert, Howe 1920, p. 91), Kennebec (Manchester, Wadsworth 1892, p. 8; East Pittston, 2 ♂ and 4 ♀ 14 VII 41), Knox (North Pond, numerous records, 30 VI to 19 VII; Stickney Corner, seen 15 VII 40; Union, 3 ♂ 15 VII 40), Lincoln (Medomak Pond, 2 ♂ 29 VII 40), Penobscot (Orono, Harvey 1901, p. 198), Waldo (Moody Pond, 13 ♂ and 2 ♀ 29 VII 40), Washington (Musquash Lake, 2 ♂ 27 VII 41).

Found along gravelly lake shores and streams.

25. *Enallagma geminatum* Kellicott. Knox (North Pond, 6 ♂ 16 VII 41), Lincoln (Duckpuddle Pond, 2 ♂ 20 VIII 41), Penobscot (Bradley and Chemo Mills, Harvey 1901, p. 196).

26. *Enallagma hageni* (Walsh). Franklin (Rangeley, Harvey 1898, p. 60), Hancock (Mt. Desert, Bullock 1891, p. 93), Kennebec (Manchester, Wadsworth 1890, p. 36; Monmouth, Howe 1921, p. 4; Togus Pond, 4 ♂ 29 VII 41), Knox (numerous records, from Forest Pond, Grassy Pond, North Pond, and Stickney Corner, 18 VI to 18 VIII), Lincoln (numerous records, from Biscay Pond, Bremen, Bristol, Damariscotta Pond, Dick's Pond, Dyer Long Pond, Gross Pond, Hastings Pond, Little Medomak Pond, McCurdy Pond, Medomak Pond, Muscongus Island, Newcastle, New Harbor, Pemaquid Pond, Pleasant Pond, Seitensparker Pond, and Webber Pond, 9 VI to 22 VIII), Oxford (Fryeburg, Harvey 1901, p. 277; Bethel and Norway, Howe 1918, p. 38), Penobscot (Orono, Harvey 1891, p. 73; Foxcroft Harvey 1898, p. 60; Springfield, 1 ♂ 27 VII 41), Sagadahoc (Bowdoinham, 4 ♂ 26 VII 40; Richmond Corner, 1 ♂ 26 VII 40), Waldo (Belfast, Howe 1921, p. 4), Washington (Machias, Calais, and Princeton, Howe 1918, p. 38), York (York Harbor, Harvey 1902, p. 5).

This is the most common and abundant species of *Enallagma* encountered by the writer in Maine. It occurs along lake shores, in marshes, and along sluggish streams.

27. *Enallagma laterale* Morse. Knox (North Pond 1 ♂ 19 VII 39, 1 ♂ 30 VI 40, 2 ♂ 15 VII 40).

This is apparently a very rare species. In spite of the very extensive sweeping of the rushes along the shores of this pond by the writer, only four specimens were taken. The female is unknown.

28. *Enallagma minusculum* Morse. Hancock (Mt. Desert, Howe 1918, p. 39), Knox (numerous records, from Grassy Pond, Lermond Pond, and North Pond, 15-29 VII), Lincoln (numerous records, from Bremen, Duckpuddle Pond, Little Medomak Pond, McCurdy Pond, Pemaquid Pond, Seitensparker Pond, and Webber Pond, 12 VI to 16 VIII), Waldo (Moody Pond, 2 ♂ 29 VII 40).

Fairly common, and sometimes abundant, along marshy pond shores.

29. *Enallagma signatum* (Hagen). Kennebec (Manchester, Harvey 1902, p. 5), Penobscot (Chemo Stream, Harvey 1892, p. 91; Bradley, Harvey 1902, p. 5), Washington (Princeton, Howe 1918, p. 39).

30. *Enallagma vesperum* Calvert. Hancock (Mt. Desert, Ahrens 1941, p. 287), Kennebec (Manchester, Wadsworth 1894, p. 132, as *Enallagma pollutum* Hagen*), Knox (North Pond, numerous records 30 VI to 17 VII), Lincoln (numerous records, from Alna, McCurdy Pond, Pemaquid Pond, Seitensparker Pond, and Webber Pond, 19 VI to 6 VIII), Penobscot, (Chemo Stream, Harvey 1892, p. 91, as *Enallagma pollutum* Hagen; Bradley, Harvey 1902, p. 5, as *E. pollutum* Hagen).

31. *Coenagrion resolutum* (Hagen). Lincoln (North Waldoboro, 2 ♂ 28 VI 39).

This is the only record of this northern species in New England.

32. *Ischnura kellicotti* Williamson. Kennebec (Manchester, Wadsworth 1902, p. 247).

This record represents the northeastern limit of the distribution of this species.

33. *Ischnura posita* (Hagen). Knox (Forest Pond, 1 ♂ 16 VII 39; North Pond, 1 ♀ 30 VI 40), Lincoln (Duckpuddle Pond, 1 ♂ 28 VII 40; Gardiner Pond, 3 ♂ 14 VII 41; Medomak Pond, 4 ♂ 29 VII 40; Muscongus, seen 23 VIII 41; Pemaquid Pond, 2 ♂ 19 VII 40), Penobscot (Orono, Harvey 1898, p. 60).

34. *Ischnura verticalis* (Say). Androscoggin (Auburn, 2 ♂ and 4 ♀ 26 VII 40), Cumberland (Portland, Howe 1918, p. 40), Hancock (Mt. Desert, Bullock 1891, p. 93), Kennebec (Manchester, Wadsworth 1890, p. 36, as an orange variety

* These records of *E. pollutum* refer to *E. vesperum* Calvert (Garman 1917, p. 64; Needham and Heywood 1929, p. 330).

of the ♀ of *Ischnura ramburii* Selys*; East Pittston, seen 14 VII 41; Togus Pond, 1 ♂ and 4 ♀ 29 VII 41), Knox (numerous records, from Forest Pond, Grassy Pond, North Pond, Oyster River Pond, Sennebec Pond, Stickney Corner, and Union, 16 VI to 18 VIII), Lincoln (numerous records, from Alna, Back Meadow Brook, Biscay Pond, Bremen, Bristol, Damariscotta Pond, Dick's Pond, Dresden Mills, Duckpuddle Pond, Dyer Long Pond, Euglie Corner, Gardiner Pond, Gross Pond, Hastings Pond, Hog Island, Little Medomak Pond, Longfellow Pond, McCurdy Pond, Medomak Pond, Muscongus, Muscongus Island, Newcastle, New Harbor, North Waldoboro, Pemaquid Pond, Pleasant Pond, Seitensparker Pond, and Webber Pond, 9 VI to 28 VIII), Oxford (Fryeburg, Harvey 1901, p. 277), Penobscot (Orono, Harvey 1891, p. 51; Bradley, Howe 1918, p. 40), Piscataquis (Gore A2 Twp., 1 ♀ 28 VII 41), Sagadahoc (Bowdoinham, 1 ♂ and 4 ♀ 26 VII 40), Waldo (Belfast and Liberty, Howe 1921, p. 5; Moody Pond, 1 ♂ and 2 ♀ 29 VII 40; Norton Pond, 1 ♀ 29 VII 40), Washington (Calais, Machias, and Princeton, Howe 1918, p. 40; Indian Town, 1 ♀ 27 VII 41), York (York Harbor, Calvert 1894, p. 242. Howe (1918, p. 40) also records this species from Ashland Junction, a locality which we have been unable to find on any map of Maine.

Probably the most abundant and widespread species of damselfly in the state.

35. *Anomalagrion hastatum* (Say). Lincoln (Muscongus Island, 2 ♂ 9 VIII 38, 1 ♂ 22 VIII 38).

These specimens were taken at a small grassy swamp at the northern tip of the island. This species is listed as occurring in Maine by Hagen (1861, p. 78) and many subsequent writers, but the above specimens apparently represent the first definite record of the species in the state.

ANISOPTERA

GOMPHIDAE

36. *Hagenius brevistylus* Selys. Hancock (Mt. Desert, Ahrens 1941, p. 285), Kennebec (Manchester, Wadsworth 1890, p. 37), Lincoln (Hog Island and Pemaquid Pond, Borror 1940, p. 76; Medomak Pond, 1 ♂ 29 VII 40; Dresden Mills, seen 3 VIII 40), Penobscot (Chemo Stream, Harvey 1891, p. 74; Orono and Greenfield, Harvey 1902, p. 6), Piscataquis (Russell Stream and North East Carry, Harvey 1901, p. 198; Gore A2 Twp., seen 28 VII 41), Washington (seen at Indian Town and Musquash Lake, 27 VII 41).

37. *Ophiogomphus anomalus* Harvey. Penobscot (Orono, Harvey 1898, p. 60; original description).

38. *Ophiogomphus aspersus* Morse. Piscataquis (Russell Stream, Harvey 1901, p. 242).

39. *Ophiogomphus carolus* Needham. Penobscot (Orono, Harvey 1901, p. 239; Bradley and Greenfield, Harvey 1902, p. 6).

40. *Ophiogomphus colubrinus* Selys. Penobscot (Orono, Calvert 1905, p. 15).

41. *Ophiogomphus mainensis* Packard. Penobscot (Bradley, Harvey 1901, p. 269, as *O. johannus* Needham).

42. *Ophiogomphus rupinsulensis* (Walsh). Hancock (Eagle Lake, Howe 1918, p. 29), Piscataquis (Russell Stream, Calvert 1905, p. 16).

43. *Gomphus* (*Gomphurus*) *abbreviatus* Hagen. Kennebec (Manchester, Wadsworth 1902, p. 246), Penobscot (Orono, Harvey 1892, p. 92; South La Grange, Calvert 1905, p. 17).

These records represent the northeastern limit of the distribution of this species.

*Dr. P. P. Calvert, in a footnote to Harvey's 1891 paper (p. 51), says "I am now satisfied that the specimens quoted in Miss Wadsworth's list as '*I. Ramburii* female orange var.' [Ent. News, 1:36] are really the orange females of *verticalis*."

44. *Gomphus (Gomphurus) brevis* Hagen. Penobscot (Orono, Harvey 1892, p. 92; Chemo Stream, Harvey 1898, p. 87; South La Grange and Bradley, Howe 1918, p. 32).

45. *Gomphus (Gomphus) exilis* Selys. Hancock (Mt. Desert, Calvert 1894, p. 242), Kennebec (Manchester, Wadsworth 1890, p. 37), Knox (Forest Pond, 1 ♂ 16 VI 40; North Pond, 1 ♀ 30 VI 40, 2 ♂ 17 VII 40), Lincoln (numerous records, from Bremen, Bristol, Dyer Long Pond, Little Medomak Pond, McCurdy Pond, Pemaquid Pond, and Webber Pond, 9 VI to 26 VIII), Penobscot (Orono, Harvey 1891, p. 74; South La Grange, Harvey 1898, p. 85; Bradley, Howe 1918, p. 32).

The most common gomphine of south-central Maine, occurring along lake shores and along roads or in open areas near lakes and ponds.

46. *Gomphus (Gomphurus) scudderi* Selys. Penobscot (Orono, Howe 1921, p. 7), Piscataquis (Russell Stream, Harvey 1898, p. 62; North East Carry, Harvey 1901, p. 270).

47. *Gomphus (Gomphus) spicatus* Hagen. Hancock (Mt. Desert, Howe 1921, p. 6), Kennebec (Manchester, Harvey 1902, p. 7), Lincoln (Pemaquid Sanctuary, 1 ♂ 16 VI 40, 2 ♂ and 1 ♀ 17 VI 40, 1 ♂ 12 VI 41), Penobscot (Orono and South La Grange, Harvey 1898, p. 85; Oldtown, Harvey 1902, p. 7).

Occurs in open areas near marshy lakes. Its flight is very undulating, from two to six feet above the ground.

48. *Dromogomphus spinosus* Selys. Hancock (Mt. Desert, Ahrens 1941, p. 285), Kennebec (Manchester, Wadsworth 1890, p. 37), Knox (North Pond, 1 ♂ 19 VII 39, 1 ♀ 15 VII 40), Penobscot (Orono, Harvey 1891, p. 74; Oldtown, Harvey 1901, p. 271), Waldo (Moody Pond, 1 ♂ and 1 ♀ 29 VII 40).

49. *Lanthus albistylus* (Hagen). Hancock (Mt. Desert, Ahrens 1941, p. 286), Penobscot (Chemo Stream, Harvey 1891, p. 74, as *Gomphus naevius* Hagen; Bradley, Harvey 1898, pp. 63 and 87, as *G. naevius* Hagen).

50. *Lanthus parvulus* (Selys). Hancock (Mt. Desert, Ahrens 1941, p. 286), Kennebec (Manchester, Wadsworth 1890, p. 37; Monmouth, Howe 1921, p. 6).

AESHNIDAE

51. *Gomphaeschna furcillata* (Say). Hancock (Mt. Desert, Procter 1938, p. 47), Kennebec (Manchester, Wadsworth 1890, p. 37), Lincoln (Pemaquid Sanctuary, 3 ♂ 12 VI 38, 1 ♂ 15 VI 39, 1 ♂ 17 VI 40, 1 ♂ 20 VI 40, 1 ♂ 29 VI 41).

These records represent the northeastern limit of the distribution of this species. The specimens taken by the writer were taken in or near alder swamps. Their flight is steady, sometimes hovering, about six or eight feet above the ground.

52. *Basiaeschna janata* (Say). Cumberland (Westbrook, Harvey 1898, p. 87), Hancock (Mt. Desert, Procter 1938, p. 49), Kennebec (Manchester, Wadsworth 1890, p. 37), Lincoln (Biscay Pond, 2 ♂ 2 VII 39; Pemaquid Sanctuary, 1 ♀ 12 VI 38, 1 ♀ 15 VI 39, 1 ♂ 12 VI 41; Webber Pond, 1 ♂ 18 VI 41, 1 ♀ 3 VII 39), Penobscot (Orono, Harvey 1891, p. 73; South La Grange, Harvey 1898, p. 87; Bradley, Harvey 1902, p. 8; Greenfield, Howe 1919, p. 42).

Fairly common early in the summer along marshy pond shores.

53. *Boyeria vinosa* (Say). Hancock (Mt. Desert, Bullock 1891, p. 93), Kennebec (Manchester, Wadsworth 1891, p. 11), Lincoln (Webber Brook, Borror 1940, p. 76), Penobscot (Orono, Harvey 1891, p. 73; Birch Stream, Greenfield and Sunk Haze, Harvey 1898, p. 86), Piscataquis (North East Carry, Harvey 1898, p. 86; Wissattiquoik and Russell Stream, Harvey 1901, p. 273).

54. *Anax junius* (Drury). Hancock (Iron Bound Island, Howe 1920, p. 92; Mt. Desert, Johnson 1927, p. 25); Kennebec (Manchester, Wadsworth

1890, p. 37), Knox (numerous records, from Crystal Pond, Forest Pond, Grassy Pond, and North Pond, 18 VI to 18 VIII), Lincoln (numerous records, from Biscay Pond, Damariscotta Pond, Dresden Mills, Duckpuddle Pond, Hastings Pond, McCurdy Pond, Monhegan Island, Muscongus Island, Newcastle, New Harbor, Pemaquid Pond, and Webber Pond, 12 VI to 22 VIII), Penobscot (Orono, Harvey 1891, p. 73), York (Ogunquit, Howe 1921, p. 7).

A common species, occurring principally along ponds and sluggish streams.

55. *Epiaeschna heros* (Fabricius). Cumberland (Portland, Calvert 1905, p. 24), Hancock (Mt. Desert, Ahrens 1941, p. 286), Kennebec (Manchester, Wadsworth 1890, p. 37), Penobscot (Chemo Mills, Harvey 1901, p. 273; Bradley, Calvert 1905, p. 24), York (York Beach, Calvert 1905, p. 24).

56. *Aeshna canadensis* Walker. Hancock (Mt. Desert, Howe 1921, p. 8), Kennebec (Manchester, Walker 1912, p. 142), Lincoln (Duckpuddle Pond, Muscongus Island, Pemaquid Sanctuary, and Webber Pond, Borror 1940, p. 76; Hog Island, 1 ♀ 3 VIII 40, 1 ♀ 21 VIII 40, 1 ♀ 20 VIII 41), Oxford (Norway, Walker 1912, p. 143), Penobscot (Bradley and Orono, Walker 1912, pp. 142-143; Springfield, 1 ♂ 27 VII 41), Piscataquis (Six Ponds, Howe 1919, p. 48; Gore A2 Twp., 1 ♂ 28 VII 41). Howe (1919, p. 48) also reports this species from West Beach, a place we have been unable to locate.

57. *Aeshna clepsydra* Say. Hancock (Mt. Desert, Howe 1921, p. 8), Kennebec (Manchester, Walker 1912, p. 134), Lincoln (Biscay Pond, Webber Pond, and road between Damariscotta and Muscongus Bay, Borror 1940, p. 76), Penobscot (Orono, Harvey 1891, p. 73; South La Grange, Bradley, Greenfield, etc., Harvey 1902, p. 8), Piscataquis (Six Ponds, Harvey 1901, p. 274; Mt. Ktaadin, Howe 1919, p. 46), Waldo (Liberty, Howe 1921, p. 8).

58. *Aeshna constricta* Say. Kennebec (Manchester, Wadsworth 1890, p. 37), Lincoln (Hog Island, Muscongus Island, and Pemaquid Sanctuary, Borror 1940, p. 76), Oxford (Fryeburg, Harvey 1902, p. 8), Penobscot (Orono, Harvey 1891, p. 73), Piscataquis (Six Ponds, etc., Harvey 1901, p. 274; North East Carry and Kineo, Harvey 1902, p. 8; Mt. Ktaadin, Howe 1919, p. 49).

59. *Aeshna eremita* Scudder. Hancock (Mt. Desert, Ahrens 1941, p. 286), Penobscot (Orono, Harvey 1891, p. 73), Piscataquis (Six Ponds, Walker 1912, p. 126).

60. *Aeshna interrupta* Walker. Cumberland (Portland, Walker 1912, p. 109), Hancock (Iron Bound Island, Howe 1920, p. 92; Mt. Desert, Johnson 1927, p. 25).

61. *Aeshna sitchensis* Hagen. Hancock (Sea Wall, Mt. Desert Island, Ahrens 1941, p. 286).

62. *Aeshna tuberculifera* Walker. Kennebec (Manchester, Walker 1912, p. 157), Lincoln (Webber Pond, Borror 1940, p. 76), Waldo (Isleboro, Walker 1912, p. 157).

63. *Aeshna umbrosa* Walker. Androscoggin (Auburn, 1 ♂ 26 VII 40), Cumberland (Gorham, Walker 1912, p. 172), Hancock (Iron Bound Island, Howe 1920, p. 92; Mt. Desert, Howe 1921, p. 7), Kennebec (Manchester, Walker 1912, p. 172), Lincoln (Newcastle, Borror 1940, p. 76; Hog Island, 1 ♀ 18 VIII 40; Monhegan Island, 1 ♂ 22 VIII 41; Webber Pond, 1 ♂ 28 VIII 40), Oxford (Norway, Walker 1912, p. 172; Bethel, Howe 1921, p. 7), Penobscot (Millinocket, Bradley, and Greenfield, Walker 1912, p. 172), Piscataquis (Russell Stream, Walker 1912, p. 172; Six Ponds, Howe 1917a, p. 47).

64. *Aeshna verticalis* Hagen. Kennebec (Manchester, Wadsworth 1890, p. 37), Lincoln (numerous records, from Biscay Pond, Hastings Pond, Hog Island, Muscongus Island, and Webber Pond, 6 VII to 28 VIII), Penobscot (Orono, Harvey 1891, p. 73; Bradley, Harvey 1902, p. 8), Waldo (Isleboro, Calvert 1905, p. 23), York (Wells, Howe 1919, p. 47).

The commonest *Aeshna* in the south-central part of Maine; occurring at lakes and ponds.

CORDULEGASTERIDAE

65. *Cordulegaster diastatops* (Selys). Cumberland (Portland, Howe 1918, p. 25), Hancock (Mt. Desert, Johnson 1927, p. 25), Kennebec (Manchester, Wadsworth 1890, p. 37), Lincoln (Borror 1940, p. 77; specimen taken from auto radiator), Penobscot (Orono, Harvey 1892, p. 93; Sunk Haze Stream and Greenfield, Harvey 1898, p. 86; Bradley, Harvey 1901, p. 273).

66. *Cordulegaster maculatus* Selys. Hancock (Mt. Desert, Johnson 1927, p. 25), Kennebec (Manchester, Wadsworth 1890, p. 55; Monmouth, Howe 1921, p. 5), Lincoln (Webber Brook, Borror 1940, p. 77; Little Medomak Pond, 2 ♂ 20 VI 40), Penobscot (Orono, Harvey 1892, p. 91; Greenfield, Harvey 1902, p. 7).

Occurs along small, shaded, relatively rapid streams.

67. *Cordulegaster obliquus* (Say). Kennebec (Manchester, Wadsworth 1890, p. 55), Lincoln (Hog Island, 1 ♂ 29 VI 41; specimen emerging when taken), Penobscot (Orono, Hagen 1874, p. 356; Bradley, Harvey 1901, p. 271).

68. *Cordulegaster sayi* Selys. Cumberland (Portland, Hagen 1875, p. 50).

This record is also listed by Harvey (1902, p. 7); Muttkowski (1910, p. 78) and Needham and Heywood (1929, p. 155) include Maine in the distribution of this species, apparently on the basis of the above record. However, Howe (1917) and Fraser (1929) do not mention this species as occurring in Maine.

CORDULIIDAE

69. *Macromia illinoiensis* Walsh. Hancock (Mt. Desert, Ahrens 1941, p. 286), Kennebec (Manchester, Wadsworth 1892, p. 8), Penobscot (Orono and Bradley, Harvey 1901, p. 274).

70. *Didymops transversa* (Say). Franklin (Rangeley, Harvey 1898, p. 87.), Hancock (Mt. Desert, Howe 1920, p. 92), Kennebec (Manchester, Wadsworth 1890, p. 55; Monmouth, Howe 1921, p. 8), Knox (Stickney Corner, 1 ♂ 15 VII 40), Lincoln (Bristol, Pemaquid Sanctuary, and Webber Pond, Borror 1940, p. 77; Hog Island, 1 ♂ 14 VII 40; Little Medomak Pond, 1 ♂ 20 VI 40), Penobscot (Orono, Harvey 1892, p. 116; Foxcroft and South La Grange, Harvey 1898, p. 87), Piscataquis (Capens, Howe 1919, p. 51).

71. *Neurocordulia obsoleta* (Say). Kennebec (Manchester, Wadsworth 1898, p. 111).

This record represents the northeastern limit of the distribution of this species.

72. *Neurocordulia yamaskanensis* (Provancher). Penobscot (Orono, Harvey 1901, p. 275).

73. *Epicordulia princeps* (Hagen). Kennebec (Manchester, Wadsworth 1890, p. 56), Knox (North Pond, 1 ♂ 17 VII 40).

The specimen taken at North Pond was taken in a field near the pond; it lacked nodal spots, and the apical spot extended about halfway to the stigma.

74. *Tetragoneuria canis* MacLachlan. Kennebec (Manchester, Muttkowski 1911, p. 132).

75. *Tetragoneuria cynosura* (Say). Franklin (Rangeley, Harvey 1898, p. 87), Hancock (Mt. Desert, Bullock 1891, p. 94, as *Cordulia semiaquea* Burmeister), Kennebec (Manchester, Wadsworth 1890, p. 55, as *C. semiaquea* Burm.*; Monmouth, Howe 1921, p. 9, form *simulans* Muttkowski), Knox (several records, from Forest Pond, Lermond Pond and North Pond, 16 VI to 17 VII), Lincoln (numerous records, from Biscay Pond, Dyer Long Pond, Euglie Corner, Gross Pond, Hog Island, Little Medomak Pond, McCurdy Pond, Medomak Pond, Pemaquid Sanctuary, and Webber Pond, 12 VI to 29 VIII), Oxford (Andover, Howe 1919, pp. 62-63, form *simulans* Muttk.), Penobscot (Orono, Harvey 1891, p. 74; Bradley, Harvey 1892, p. 116, as *C. (T.) semiaquea* Burm.), Waldo (Moody

* Howe (1918a, p. 107) recorded this species from Manchester under the name *Tetragoneuria costalis* Selys (= *cynosura* Say).

Pond, 1 ♂ 29 VII 40), Washington (Calais, Howe 1919, p. 63, form *simulans* Muttk.).

All specimens taken by the writer in Maine (Knox, Lincoln, and Waldo counties) have been *T. c. simulans* Muttkowski, and apparently all of the above records refer to this form. This insect is fairly common along marshy lake shores; it may often be seen patrolling clearings or roads near marshes, flying a few feet above the ground.

76. *Tetragoneuria morio* Muttkowski. Muttkowski (1911, p. 126) records this species from Maine, Michigan, and Wisconsin, but gives no definite locality for the Maine specimens. However, since these specimens were collected by Harvey, they were probably taken in Penobscot or Piscataquis County.

77. *Teragoneuria spinigera* Selys. Hancock (Mt. Desert, Procter 1938, p. 48), Kennebec (Manchester, Wadsworth 1890, p. 56, as *Cordulia new?* sp.), Lincon (McCurdy Pond, 1 ♂ 29 VI 41; Pemaquid Sanctuary, Borror 1940, p. 77), Penobscot (Bradley, Harvey 1901, p. 275).

Taken in clearings near marshes and ponds; it patrols with a rather irregular flight, about three feet above the ground.

78. *Helocordulia uhleri* (Selys). Hancock (Mt. Desert, Howe 1919, p. 56), Kennebec (Manchester, Wadsworth 1890, p. 56), Lincoln (Damariscotta Lake, McCurdy Pond, and Webber Brook, Borror 1940, p. 77), Penobscot (Orono, Hagen 1875, p. 61).

Taken along streams and rocky lake shores. When over water it flies with a rather zigzag flight, a foot or two above the water, and frequently hovers.

79. *Somatochlora elongata* (Scudder). Hancock (15 miles off Scoodic Point, Harvey 1898, p. 86; Mt. Desert, Procter 1938, p. 48), Kennebec (Manchester, Walker 1925, p. 75), Penobscot (Bradley, Howe 1919, p. 58).

80. *Somatochlora forcipata* (Scudder). Hancock (Echo Lake, Ahrens 1941, p. 286), Kennebec (Manchester, Wadsworth 1892, p. 9), Lincoln (Hog Island, Borror 1940, p. 77), Penobscot (La Grange, Walker 1925, p. 139).

The specimens collected by the writer were taken in an alder swamp.

81. *Somatochlora franklini* (Selys). Penobscot (Orono, Harvey 1901, p. 275, as *S. septentrionalis* Hagen; Chemo Stream, Howe 1919, p. 60; Bradley, Walker 1925, p. 122).

82. *Somatochlora kennedyi* Walker. Hancock (Echo Lake, Ahrens 1941, p. 286), Kennebec (Manchester, Harvey 1902, p. 9, in part as *S. forcipata* (Scudder) *), Lincoln (Pemaquid Sanctuary and Webber Pond, Borror 1940, p. 77; Euglie Corner, 2 ♂ 28 VII 40; Hog Island, 2 ♂ 27 VI 41), Penobscot (Orono, Harvey 1892, p. 116, in part as *Cordulia* (*Somatochlora*) *forcipata* Scudder*; Bradley, Harvey 1902, p. 9, as *forcipata* Scudder*), Piscataquis (Capens, Howe 1919, p. 59).

83. *Somatochlora minor* (Calvert). Hancock (Mt. Desert, Ahrens 1941, p. 286), Penobscot (Bradley, Harvey 1898, p. 86; Orono, Harvey 1901, p. 275).

84. *Somatochlora tenebrosa* (Say). Hancock (Mt. Desert, Ahrens 1941, p. 286), Kennebec (Manchester, Wadsworth 1898, p. 111, as *S. linearis* (Hagen) †).

85. *Somatochlora walshii* (Scudder). Hancock (Mt. Desert, Ahrens 1941, p. 286), Kennebec (Manchester, Wadsworth 1890, p. 55), Penobscot (Bradley and Orono, Harvey 1901, p. 275; Chemo Stream, Walker 1925, p. 59).

86. *Somatochlora williamsoni* (Walker). Hancock (Mt. Desert, Ahrens 1941, p. 286). Walker (1925, p. 83) mentions a male from Maine without definite locality data.

87. *Cordulia shurtleffi* Scudder. Hancock (Mt. Desert, Howe 1920, p. 93), Lincoln (Pemaquid Sanctuary, 1 ♂ 17 VI 40, 3 ♂ 12 VI 41, 2 ♀ 19 VI 41,

* Walker 1925, p. 125.

† Walker 1925, p. 101.

1 ♂ 29 VI 41), Penobscot (Orono, Harvey 1898, p. 87; Bradley, Harvey 1901, p. 274).

The specimens collected by the writer were taken in or near sphagnum bogs.

88. *Dorocordulia lepida* (Hagen). Cumberland (Portland, Hagen 1875, p. 60), Hancock (Mt. Desert, Howe 1920a, p. 97), Kennebec (Manchester, Wadsworth 1890, p. 55), Knox (Forest Pond, 1 ♀ 18 VIII 40), Lincoln (numerous records, from Gardiner Pond, Hastings Pond, Newcastle, Pemaquid Sanctuary, Pleasant Pond, and Webber Pond, 16 VI to 14 VIII), Penobscot (Chemo Lake, Harvey 1892, p. 116; Bradley, Orono, and Greenfield, Harvey 1902, p. 10).

89. *Dorocordulia libera* (Selys). Hancock (Mt. Desert, Howe 1920, p. 92), Kennebec (Manchester, Wadsworth 1890, p. 56), Lincoln (numerous records, from Damariscotta Pond, Dyer Long Pond, Muscongus Island, Newcastle, Pemaquid Sanctuary, and Webber Pond, 19 VI to 31 VII), Penobscot (Greenfield, Harvey 1891, p. 74; Orono, Harvey 1901, p. 276).

90. *Williamsonia fletcheri* Williamson. Hancock (Mt. Desert, 1 ♂ 6 VI 35, collected by Wm. Procter).

This species has not heretofore been recorded from Maine, and this record apparently represents the southeastern limit of its range.

LIBELLULIDAE

91. *Nannothemis bella* (Uhler), Hancock (Mt. Desert, Bullock 1891, p. 94), Kennebec (Manchester, Wadsworth 1902, p. 246), Lincoln (Pemaquid Sanctuary, numerous records 19-29 VI; Webber Pond, 1 ♀ 17 VI 38, 1 ♂ 22 VIII 40).

In Pemaquid Sanctuary, the writer found this species very abundant at a floating sphagnum bog.

92. *Celithemis elisa* Hagen. Hancock (Mt. Desert, Bullock 1891, p. 94), Kennebec (Manchester, Wadsworth 1894, p. 132), Knox (North Pond, 1 ♀ 30 VI 40, seen 17 VII 40 and 16 VII 41), Lincoln (numerous records, from Biscay Pond, Hog Island, Keene Neck, Little Medomak Pond, McCurdy Pond, Monhegan Island, Muscongus, Pemaquid Sanctuary, and Webber Pond, 17 VI to 26 VIII), Penobscot (Chemo Stream, Harvey 1892, p. 117; Bradley, Harvey 1902, p. 11), Somerset (Mercer, Calvert 1905, p. 41), York (Kennebunkport (?), Howe 1920, p. 86).

Fairly common along marshy pond shores.

93. *Celithemis martha* Williamson. Hancock (Mt. Desert, Ahrens 1941, p. 286), Kennebec (Manchester, Wadsworth 1890, p. 57, as *Diplax* new? sp.), Lincoln (numerous records, from Dick's Pond, Hastings Pond, Hog Island, McCurdy Pond, Pemaquid Sanctuary, and Webber Pond, 2 VII to 26 VIII), Penobscot (Bradley, Harvey 1901, p. 276, as *Celithemis ornata* Rambur*).

These records represent the northeastern limit of the distribution of this species.

94. *Libellula* (*Eolibellula*) *semifasciata* Burmeister. Hancock (Mt. Desert, Johnson 1927, p. 26), Kennebec (Manchester, Wadsworth 1890, p. 56), Lincoln (Damariscotta Pond, seen 2 VII 41; Muscongus Island, 2 ♂ 20 VI 41), Penobscot (Orono, Harvey 1901, p. 276; Bradley, Calvert 1905, p. 35; Greenfield, Howe 1920, p. 73), York (Kennebunkport, Howe 1920, p. 73).

95. *Libellula* (*Holotania*) *incesta* Hagen. Kennebec (Manchester, Wadsworth 1890, p. 56; Togus Pond, seen 29 VII 41), Lincoln (Biscay Pond 1 ♂ 16 VIII 38, seen 13 VIII 40), Sagadahoc (Richmond Corner, 1 ♀ 26 VII 40).

96. *Libellula* (*Holotania*) *luctuosa* Burmeister. Lincoln (Newcastle, 1 ♀ 5 VIII 38).

97. *Libellula* (*Ladona*) *exusta* Say. Cumberland (Westbrook, Harvey

* According to Williamson (1922), the records of *C. ornata* (Rambur) from Maine refer to *C. martha* Williamson.

1898, p. 87), Hancock (Mt. Desert, Johnson 1927, p. 26), Kennebec (Manchester, Wadsworth 1890, p. 56), Lincoln (numerous records, from Back Meadow Brook, Dick's Pond, Hastings Pond, Pemaquid Sanctuary, and Webber Pond, 12 VI to 19 VII), Oxford (Norway, Hagen 1875, p. 69), Penobscot (Chemo Stream, Harvey 1891, p. 74; Bradley, Calvert 1905, p. 34).

98. *Libellula (Ladona) julia* Uhler. Hancock (Mt. Desert, Ahrens 1941, p. 287), Kennebec (Manchester, Ris 1909, p. 258), Lincoln (several records, from Dick's Pond, Little Medomak Pond, North Waldoboro, and Webber Pond, 19 VI to 8 VII), Penobscot (Springfield, 1 ♀ 27 VII 41), York (Ogunquit, Howe 1921, p. 1).

99. *Libellula (Libellula) quadrimaculata* Linnaeus. Franklin (Rangeley, Harvey 1898, p. 88), Hancock (Mt. Desert, Bullock 1891, p. 94), Kennebec (Manchester, Wadsworth 1890, p. 56), Knox (Forest Pond, Borror 1940, p. 78), Lincoln (numerous records, from Damariscotta Pond, Dyer Long Pond, Hastings Pond, Hog Island, Little Medomak Pond, Muscongus Island, Newcastle, North Waldoboro, Pemaquid Sanctuary, and Webber Pond, 12 VI to 31 VII), Penobscot (Orono, Harvey 1891, p. 74; Bradley, Harvey 1902, p. 10).

A common species about ponds and marshes.

100. *Libellula (Neotetrus) pulchella* Drury. Androscoggin (Auburn, Harvey 1898, p. 88), Cumberland (Brunswick, Hagen 1875, p. 69; Westbrook, Harvey 1898, p. 88), Hancock (Mt. Desert, Ahrens 1941, p. 287), Kennebec (Manchester, Wadsworth 1890, p. 56), Knox (several records, from Crystal Pond, Forest Pond, Grassy Pond, and North Pond, 16 VII to 18 VIII), Lincoln (numerous records from Biscay Pond, Damariscotta Pond, Dresden Mills, Duckpuddle Pond, Dyer Long Pond, Euglie Corner, Hastings Pond, Hog Island, McCurdy Pond, Monhegan Island, Muscongus Island, Newcastle, Pemaquid Pond, Pemaquid Sanctuary, Pleasant Pond, and Webber Pond, 21 VI to 26 VIII), Oxford (Andover, Hagen 1875, p. 69; Fryeburg, Harvey 1901, p. 277), Penobscot (Orono, Harvey 1891, p. 74; Bradley, Harvey 1902, p. 10), Sagadahoc (Richmond Corner, seen 26 VII 40), York (Ogunquit, Howe 1921, p. 11).

A common species at ponds and along sluggish streams.

101. *Libellula (Plathemis) lydia* Drury. Cumberland (Brunswick, Howe 1920, p. 74), Hancock (Mt. Desert, Harvey 1902, p. 10, as *Plathemis trimaculata* (DeGeer)), Kennebec (Manchester, Wadsworth 1891, p. 11, as *P. trimaculata* (DeGeer)), Lincoln (Pemaquid Sanctuary and Webber Pond, Borror 1940, p. 78), Oxford (Bethel, Howe 1920, p. 74), Penobscot (Orono, Harvey 1891, p. 74, as *P. trimaculata* (DeGeer); Bradley, Harvey, 1902, p. 10, as *P. trimaculata* (DeG.); Springfield, 1 ♂ 27 VII 41), Sagadahoc (Richmond Corner, seen 26 VII 40).

Occurs along sluggish streams and muddy pools but is not very common.

102. *Sympetrum costiferum* (Hagen). Hancock (Mt. Desert, Howe 1920, p. 81), Kennebec (Manchester, Wadsworth 1890, p. 56), Knox (Crystal Pond, 2 ♀ 10 VIII 39; Grassy Pond, 1 ♂ 29 VII 40), Lincoln (numerous records, from Biscay Pond, Duckpuddle Pond, Knowlton Corner, Little Pond, McCurdy Pond, Medomak Pond, Pemaquid Pond, Pemaquid Sanctuary, and Webber Pond, 28 VII to 28 VIII), Oxford (Fryeburg, Harvey 1902, p. 11, as *S. obtusum* (Hagen)), Penobscot (Bradley and Chemo Stream, Harvey 1892, p. 117; Orono, Harvey 1902, p. 11), York (York Harbor, Calvert 1894, p. 242).

103. *Sympetrum danae* (Sulzer). Hancock (Great Duck Island, Ahrens 1941, p. 287).

104. *Sympetrum internum* Montgomery (= *decisum* Hagen). Franklin (Rangeley, Harvey 1898, p. 87), Hancock (Mt. Desert, Howe 1920, p. 79), Kennebec (Manchester, Wadsworth 1890, p. 56), Knox (numerous records, from Forest Pond, Grassy Pond, North Pond, Oyster River Pond, and Stickney Corner, 30 VI to 18 VIII), Lincoln (numerous records, from Biscay Pond, Damariscotta Pond, Dick's Pond, Duckpuddle Pond, Gross Pond, Hog Island, Keene

Neck, Knowlton Corner, McCurdy Pond, Medomak Pond, Monhegan Island, Muscongus Island, Newcastle, New Harbor, Pemaquid Pond, Pemaquid Sanctuary, and Webber Pond, 29 VI to 29 VIII), Oxford (Fryeburg, Harvey 1901, p. 277); Penobscot (Orono, Harvey 1891, p. 75; South La Grange, Harvey 1898, p. 87; Bradley and Greenfield, Harvey 1902, p. 11; Bangor, Ris 1911, p. 683), Piscataquis (North West Carry, Harvey 1898, p. 87; Russell Stream, etc., Harvey 1901, p. 277); Chamberlain Lake, Howe 1921, p. 11), Somerset (North West Carry, Harvey 1902, p. 11), Washington (Roque Bluffs, Howe 1921, p. 11), York (York Harbor, Calvert 1894, p. 242; Ogunquit, Howe 1921, p. 11). Howe (1921, p. 11) also reports this species from Ashland Junction, a place which we have been unable to locate.

All the above-mentioned literature references are to *S. rubicundulum* (Say), but since the writer has never taken *rubicundulum* in Maine and has found *internum* very abundant and widespread, it seems probable that these references are to the latter species.

105. *Sympetrum obtrusum* (Hagen). Hancock (Mt. Desert, Johnson 1927, p. 26), Kennebec (Manchester, Ris 1911, p. 686), Lincoln (Monhegan Island, Muscongus Island, and Webber Pond, Borror 1940, p. 78; Hog Island, 1 ♂ 23 VIII 41), Penobscot (Springfield, 1 ♂ 27 VII 41), Piscataquis (Mt. Katahdin, Howe 1920, p. 80), Somerset (King and Bartlett Lake, Calvert 1905, p. 38), York (York Harbor, Calvert 1894, p. 242; Williamson (1914, p. 456) states that this record is doubtful).

106. *Sympetrum semicinctum* (Say). Hancock (Mt. Desert, Ahrens 1941, p. 287), Kennebec (Manchester, Wadsworth 1891, p. 11), Knox (Stickney Corner, 1 ♂ and 3 ♀ 29 VII 40), Lincoln (Webber Pond, 1 ♀ 13 VIII 40), Penobscot (Orono, Harvey 1891, p. 75); Bradley, Harvey 1901, p. 276), York (York Harbor, Harvey 1902, p. 11). Howe (1920, p. 81) also records this species from Ashland Junction, a place we have been unable to locate.

107. *Sympetrum vicinum* (Hagen). Cumberland (Brunswick, Hagen 1875, p. 80), Hancock (Mt. Desert, Howe 1921, p. 12), Kennebec (Manchester, Wadsworth 1890, p. 56; Togus Pond, 3 ♀ 29 VII 41), Lincoln (numerous records, from Biscay Pond, Damariscotta Pond, Duckpuddle Pond, Longfellow Pond, McCurdy Pond, Monhegan Island, Muscongus, Muscongus Island, Newcastle, Pemaquid Sanctuary, and Webber Pond, 29 VII to 28 VIII), Oxford (Fryeburg, Harvey 1901, p. 277), Penobscot (Orono, Harvey 1891, p. 75; Chemo Stream, Harvey 1901, p. 277; Bradley, Harvey 1902, p. 11), Piscataquis (Ktaadn Iron Works, Harvey 1901, p. 277), York (York Harbor, Calvert 1894, p. 242).

108. *Leucorrhinia frigida* Hagen. Hancock (Mt. Desert, Calvert 1894, p. 242), Lincoln (Muscongus Island, Seitensparker Pond, and Webber Pond, Borror 1940, p. 78), Penobscot (Bradley, Harvey 1892, p. 117).

109. *Leucorrhinia glacialis* Hagen. Hancock (Mt. Desert, Howe 1920, p. 84), Lincoln (Muscongus Island, 1 ♂ 22 VII 39; Webber Pond, 7 ♂ and 1 ♀ 19 VI 41, 4 ♂ 29 VII 41), Penobscot (Orono and Chemo Stream, Harvey 1901, p. 276; Bradley, Harvey 1902, p. 11).

The writer found this species most abundant at a floating sphagnum bog.

110. *Leucorrhinia hudsonica* (Selys). Hancock (Mt. Desert, Procter 1938, p. 49), Lincoln (numerous records, from Hog Island, Muscongus Island, Pemaquid Sanctuary, and Webber Pond, 12 VI to 17 VII), Penobscot (Oldtown, Harvey 1892, p. 116; Orono, Harvey 1902, p. 11), Piscataquis (Capens, Howe 1920, p. 84).

Occurs in sphagnum and alder bogs.

111. *Leucorrhinia intacta* (Hagen). Androscoggin (Wales, Howe 1921, p. 12), Cumberland (Westbrook, Harvey 1898, p. 87), Hancock (Mt. Desert, Howe 1920, p. 83), Kennebec (Manchester, Wadsworth 1890, p. 56; Monmouth, Howe 1921, p. 12), Knox (Forest Pond, 2 ♂ 19 VI 39; Grassy Pond, 1 ♂ 29 VII

40), Lincoln (numerous records, from Damariscotta Pond, Dresden Mills, Duck-puddle Pond, Dyer Long Pond, Hastings Pond, Hog Island, Little Medomak Pond, Muscongus Island, Newcastle, North Waldoboro, Pemaquid Sanctuary, Pleasant Pond, Seitensparker Pond, and Webber Pond, 12 VI to 31 VII), Penobscot (Chemo Stream, Harvey 1891, p. 74; Orono and Bradley, Harvey 1902, p. 11), Waldo (Norton Pond, seen 29 VII 40).

Fairly common along marshy pond shores.

112. *Leucorrhinia proxima* Calvert. Hancock (Mt. Desert, Howe 1920, p. 85), Kennebec (Manchester, Calvert 1890, p. 38), Lincoln (numerous records, from Damariscotta Pond, Dyer Long Pond, Hastings Pond, Muscongus Island, North Waldoboro, Pemaquid Sanctuary, and Webber Pond, 16 VI to 22 VIII), Penobscot (Orono, Harvey 1891, p. 74; Oldtown, Harvey 1902, p. 11).

113. *Pachydiplax longipennis* (Burmeister). Kennebec (Manchester, Calvert 1901-1908, p. 341).

114. *Pantala flavescens* (Fabricius). Hancock (Bar Harbor, Ahrens 1941, p. 287), Knox (North Pond, Borror 1940, p. 79), Lincoln (Hog and Monhegan Islands, Borror 1940, p. 79).

115. *Pantala hymenaea* (Say). Lincoln (Muscongus Island, seen 20 VIII 41).

This specimen was observed flying over a clearing, from ten to thirty feet above the ground; although the specimen was not collected, it was watched for about half an hour, and the dark spot at the base of the hind wing was plainly seen. This is the first record of this species for Maine.

DOUBTFUL RECORDS

Ophiogomphus howei Bromley. Needham and Heywood (1920, p. 76) include Maine in the distribution of this species, but we have been unable to locate any definite record of its capture in the state. Bromley (1924, p. 343) records it from Massachusetts, and it may occur in Maine.

Gomphus (*Gomphurus*) *amnicola* Walsh. Muttkowski (1910, p. 90) records this species from Maine, but according to Howe (1921, p. 1) the record is untraceable.

Gomphus (*Gomphurus*) *externus* Hagen. Muttkowski (1910, p. 92) and Needham and Heywood (1929, p. 90) record this species from Maine, but the record is untraceable.

Libellula (*Holotania*) *vibrans* Fabricius. Muttkowski (1910, p. 141) and Needham and Heywood (1929, p. 228) record this species from Maine, but the record is untraceable and very doubtful (Howe, 1921, p. 10).

Somatochlora albicincta (Burmeister). Walker's map of the distribution of this species (1925, p. 174) shows that it may occur in the northern part of Maine, but he gives no Maine records.

Somatochlora cingulata (Selys). Walker's map of the distribution of this species (1925, p. 188) shows that it may occur in the northern part of Maine, but he gives no Maine records.

Several additional species have been recorded from Maine, but these have been shown to be based on misidentifications:

Argia apicalis Say; see *A. moesta*, No. 13.

Enallagma pollutum (Hagen); see *E. vesperum*, No. 30.

Ischnura ramburii Selys; see *I. verticalis*, No. 34.

Somatochlora linearis (Hagen); see *S. tenebrosa*, No. 84.

Somatochlora semicircularis (Selys); this species is recorded from Maine by Muttkowski (1910, p. 132); Walker (1925, p. 126) lists this record under *S. kennedyi* Walker.

Celithemis ornata (Rambur); see *C. martha*, No. 93.

Sympetrum rubicundulum (Say); see remarks under *S. internum*, No. 104.

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THE GENUS *CRESSOCHILUS* BANKS (HYMENOPTERA, POMPILIDAE).

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Banks distinguished *Cressocheilus* from other genera by its having a somewhat acute marginal cell and the apical margin of the clypeus biconcave. In the females the biconcave margin of the clypeus may be very weakly indicated, but in the males it is usually stronger, there being often a well-marked median tooth.

Priocnemis and its segregates differ from *Cryptocheilus* and the genera into which that genus has been divided, among other things, by lacking the row of heavy spines on each side of each last tarsal segment underneath. In this respect *Cressocheilus* is intermediate, since in *nuperus*, the genotype, there are a few small spines on the apical half or two-thirds, in *dakota*, *nubeculatus* and *apache* none.

Cressocheilus Banks

1941. *Cressocheilus* Banks. Can. ent. 73:119. Genotype: *Pompilus* (*Priocnemis*) *nuperus* Cresson, by original designation.

KEY TO SPECIES

1. Wings black..... (2)
- Wings golden-yellow or yellowish hyaline, with apex black..... (3)
2. Body and legs ferruginous, the pleura and sutures of the thorax more or less black..... *nuperus* (Cresson)
- Body and legs black..... *dakota* (Cresson)
3. Wings deep yellow, with sharp cross-bands; color uniformly light ferruginous; habitat Arizona..... *apache* (Banks)
- Wings yellowish hyaline, with a fuscous cloud at apex, one at middle, and one half-way between; color fusco-ferruginous with lighter areas; habitat Cuba..... *nubeculatus* (Cresson)

Cressocheilus nuperus (Cresson)

1867. *Pompilus* (*Priocnemis*) *nuperus* Cresson, ♀. Trans. Amer. ent. soc. 1:118.
1884. *Salix* (*Priocnemis*) *nuperus* Kohl. Verh. Zool.-bot. Gesellsch. Wien. 34:45.
1925. *Priocnemis* (*Priocnessus*) *nuperus* Banks. Bull. Mus. comp. zool. Harvard univ. 67:337.
1941. *Cressocheilus nuperus* Banks. Can. ent. 73:119.

♂: Ferruginous, the face and inner orbits golden yellow; base and apex of flagellum, spot surrounding ocelli, sternum, edges of mesopleura, most of