ODONATA OF THE FRANCONIA REGION, NEW HAMPSHIRE.

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Mrs. Annie T. Slosson's captures of Odonata in Franconia, made now over a decade ago, have already attracted odonatologists to a recognition of this interesting region. Franconia is thus the type locality of *Gomphus borealis* Needham, and *Somatochlora minor* (Calv.), and five of Dr. Scudder's species were first described from the White Mountain region. It has been difficult, however, to limit the scope of this paper to just the township, and impractical to take a definite radius, for lying so near the Connecticut Valley, a very varied topographic region would be included, when it seems more interesting and proper to make the paper one on the mountain and foot-hill stations. I am, therefore, including the records made for the immediate region of the higher White Mountains, a region I think often referred to by Hagen and others on odonate labels as "White Mts." The list thus includes the notable records and type stations of Dr. S. H. Scudder on Mt. Washington, and at The Glen, and records of Dr. P. P. Calvert at Fabyan's, Dr. G. M. Allen at Intervale in 1899, etc.

My own collecting in this region includes one day's trip made in 1916, from southern New Hampshire, north through the Profile Notch and south again by the Crawford (Psyche 24:45-53, 1917), and during the past summer when I was a resident of Franconia from June 24 to August 5, and during a two days' trip on June 1 and 2. One of the interesting features of my list is, not so much that I failed to find many species recorded by Mrs. Slosson over her long years of collecting in the region, but that in one summer I should have taken a considerable number of common species which it seems she certainly would have found; facts indicating very probably changes or local extensions of insect ranges in this region.

Zygoptera.

AGRIONIDÆ.

1. *Agrion amatum* Hagen.

June to July: Mrs. Slosson writes me, "There are not many bodies of water around Franconia where he was not to be found twelve years ago,—Pond Brook, Streeter Pond, Black Brook, along the Gale River, everywhere." Dr. Allen found it common at Intervale by the river, last seen on July 29. This species I was unable to find at all in the entire region.

2. *Agrion æquabile* Say.

June to July. Dr. Allen found it along the Saco River from June 27 to July 3.

3. *Agrion maculatum* Beauv.

June 20 to 27.

I found it common about the brooks leading out of Echo and Profile Lakes, uncommon on Black Brook, and at Pearl Lake, Lisbon. It was taken at Intervale by Dr. Allen from June 20 to July 12. There is a male in U. S. N. Museum taken at Franconia by Mrs. Slosson.

CÆNAGRIONIDÆ.

4. *Lestes congener* Hagen.
August and September. Dr. Allen took three specimens in the Saco meadows at Intervale,—July 3 to 26. There is a specimen in the U. S. N. Museum taken at Franconia by Mrs. Slosson.
5. *Lestes disjunctus* Selys.
June to August. Mrs. Slosson collected this species at Franconia, June 26, and Dr. Calvert at Fabyan's. Between July 16 and 29 I found it common at Mill Pond, Lyman, and at Pearl Lake, Lisbon. It was taken commonly at Intervale and North Conway by Dr. Allen, from June 21 to Sept. 13, and by a collector named Skinner at Jackson.
6. *Lestes eurinus* Say.
June. Dr. Allen took three specimens at a small pond near Saco River, North Conway, on June 29, the northernmost station in New England for the species.
7. *Lestes forcipatus* Rambur.
June to August. Dr. Allen took several specimens in the Saco meadows, Intervale, from June 21 to August 8.
8. *Lestes inequalis* Walsh.
June and July. Mrs. Slosson collected this species in June at Franconia, and Dr. Allen at Intervale from July 3 to 26 in the Saco meadows.
9. *Lestes rectangularis* Say.
June 22 to Sept. 18. Mrs. Slosson collected it at Franconia, and Dr. Allen at Intervale, and North Conway in the Saco meadows and at Pudding Pond.
10. *Lestes uncatatus* Kirby.
June. Mrs. Slosson secured it at Franconia, and Dr. Allen two females, (determination doubtful) on June 27 in the Saco meadows.
11. *Lestes unguiculatus* Hagen.
June 12. There is a specimen in the Museum of Comparative Zoölogy at Cambridge labeled "White Mts.," and I took one specimen at Streeter Pond (upper) which flew from my hand after capture, and which I am reasonably sure was of this species. Mrs. Slosson writes me she has taken it at Franconia.
12. *Lestes vigilax* Hagen.
July and August. Dr. Allen secured it at Pudding Pond, North Conway, from July 1 to August 21.
13. *Argia moesta* Hagen.
Dr. Allen collected it at Pudding Pond, North Conway.
14. *Argia violacea* Hagen.
June and July. I took specimens from July 17 to 31 at Partridge Lake, Littleton, and at Forest Lake, Whitefield. Dr. Allen found it common at Intervale from June 20 to August 9.
15. *Enallagma calverti* Morse.
June to August. I found it common at Profile and Echo Lakes, Franconia, from June 27 to August 12, and took one specimen at Lonesome Lake, Lincoln, July 4.

16. *Enallagma cyathigerum* Charp.
July. Mrs. Slosson collected it at Franconia, and Selys records it from Hermit Lake, Mt. Washington. I took it on July 4 commonly about Lonesome Lake, Lincoln.
17. *Enallagma aspersum* Hagen.
July to August. Dr. Allen took several specimens in the Saco meadows, at Pudding Pond and Echo Lakes, North Conway, from June 19 to August 21. He remarks, "Larger than usual, but apparently of this species." There is a specimen in the U. S. N. Museum from Echo Lake, North Conway, taken in 1890.
18. *Enallagma ebrium* Hagen.
July and August. I took it commonly at Streeter Pond, Franconia, and at Mill Pond, Lyman, from July 3 to 26. Dr. Calvert secured it at Fabyan's in August.
19. *Enallagma hageni* Walsh.
June to August. There is a male in the U. S. N. Museum from Franconia collected by Mrs. Slosson, and Dr. Allen took it commonly in the Saco meadows from June 20 to August 6. I found it common at Streeter Pond, Franconia; Partridge Lake, Littleton; Pearl Lake, Lisbon; Forest Lake, Whitefield, from July 3 to July 31.
20. *Nehalennia irene* (Hagen).
July. There is a male in the U. S. N. Museum collected by Mrs. Slosson at Franconia and Mt. Washington. Dr. Allen took it at North Conway on July 1, and I found them common at Streeter Pond, Franconia; Mill Pond, Lyman; Partridge Lake, Littleton, and at Bowles' Pond on Lafayette Brook, from July 3 to 29.
21. *Amphiagrion saucium* Burm.
June to July. Mrs. Slosson collected it at Franconia,—Dr. Allen on the Saco meadows, Intervale, from June 19 to July 10, and I secured several specimens at Mill Pond, Lyman, on July 16 to 17.
22. *Chromagrion conditum* Hagen.
June to July. Mrs. Slosson collected it at Franconia, Dr. Allen in the Saco meadows, Intervale, from June 22 to July 6,—there is a male in the U. S. N. Museum collected by Mrs. Slosson at Franconia, and I took a male at Profile Lake on July 20.
23. *Ischnura posita* Hagen.
There is a specimen in the Museum of Comparative Zoology labeled "White Mts."
24. *Ischnura verticalis* Say.
June to September. There is a male in the U. S. N. Museum collected at Franconia by Mrs. Slosson,—Dr. Allen took it commonly at Intervale from June 19 to September 13,—Dr. Calvert collected it at Fabyan's,—Skinner took it at Jackson,—there is a specimen from North Conway in the Museum of Comparative Zoology,—and I found it common at Streeter Pond, Franconia; Mill Brook, Lyman; Forest Lake, Whitefield; Partridge Lake, Littleton; Pearl Lake, Lisbon, and at Bowles' Pond, Lafayette Brook, Franconia, from July 3 to 31.

This is one of the most abundant and evenly distributed species in New England.

Anisoptera.

AESCHNIDÆ.

25. *Cordulegaster diastatops* Selys.
June to August. Mrs. Slosson took it at Franconia, and there is a specimen in the U. S. N. Museum collected by her. Dr. Allen took it in the Saco meadows, Intervale, from June 22 to July 1, and it was reported from the "White Mts." by Selys.
 26. *Cordulegaster maculatus* Selys.
June to July. Dr. Allen took it at Diana's Baths, North Conway, and in the Saco meadows, Intervale, from June 19 to 22,—and I found it common at the outlets of Echo and Profile Lakes from July 20 to 27.
 27. *Ophiogomphus colubrinus* Selys.
Recorded from the "White Mts." by Mr. Banks.
 28. *Ophiogomphus aspersus* Morse.
June and July. Dr. Allen took two males and a female on Mt. Bartlett on June 24 and July 20, and a female at Intervale on July 4.
 29. *Ophiogomphus mainensis* Packard.
Recorded from the "White Mts." by Selys, and from Franconia by Mrs. Slosson.
 30. *Gomphus albistylus* Hagen.
July 20 to August 1. I found it common at the outlet from Echo Lake between the above dates.
 31. *Gomphus borealis* Needh.
One of the type specimens was collected by Mrs. Slosson at Franconia. Dr. Allen took a female of *G. descriptus* (?) in the Saco meadows, June 21, which may belong here.
 32. *Gomphus exilis* Selys.
June and July. I found tenerals at Echo Lake on July 20; an adult at Profile Lake July 27, and an adult at Pearl Lake, Lisbon, on July 25. Dr. Allen found it common at North Conway and Intervale from June 19 to 29.
 33. *Gomphus parvulus* Selys.
June. Hagen recorded it from the "White Mts." in June. Mrs. Slosson from Franconia, and on June 28 I took a female near Lafayette Brook, Franconia, where I saw two others.
 34. *Gomphus spicatus* Hagen.
June. Mrs. Slosson found it at Franconia on June 17. Dr. Allen took it in the Saco meadows, Intervale, from June 20 to 24.
 35. *Gomphus brevis* Hagen.
June. Dr. Allen took both sexes on the Saco meadows, Intervale, from June 20 to 24.
- NOTE.—*Gomphus notatus* Ramb., was probably taken at Campton, but the mis-spelling of the locality recorded makes the record doubtful.
36. *Basiaeschna janata* Say.
June and July. Recorded from the "White Mts." by Hagen. I

- found it at Echo Lake from June 30 to July 20. Dr. Allen took one at Intervale on July 4 in the Saco meadows.
37. *Anax junius* Drury.
July. I saw one at Streeter Pond, Franconia, on July 3. Mrs. Slosson reports one on the Gale River on June 20.
38. *Aeshna canadensis* E. Walker.
July and August. Recorded from the "White Mts." by Shurtleff. Dr. Calvert took it at the White Mt. House, at Franconia, and at Fabyan's. I found it common at Mill Pond, Lyman, on July 29.
39. *Aeshna constricta* Say.
August and September. It was taken at Hermit Lake, and Fabyan's by Dr. Calvert, and by Dr. Allen at Carter's Notch, and Intervale from August 21 to September 18. It is probably that some of the latter material should have been referred to *A. umbrosa*, a closely related species since described.
40. *Aeshna eremita* Scudd.
August. The type was taken at Hermit Lake, Mt. Washington, by Dr. Scudder, and it was also taken there by Mrs. Slosson, and a specimen of her collecting is in the U. S. N. Museum. I took it at Profile Lake August 12, 1916, and it was common at Lonesome Lake, Lincoln, on August 1. Undoubtedly undetermined material collected in July to September at Carter's Notch by Dr. Allen belongs here.
41. *Aeshna juncea* Linn.
August. It was recorded from the "White Mts." by both Scudder and Hagen. Mrs. Slosson also took it at Franconia.
42. *Aeshna carulea septentrionalis* Burm.
It was recorded from the "White Mts." by both Scudder and Hagen.
43. *Aeshna umbrosa* E. Walker.
August. Mrs. Slosson took it at Franconia, and a specimen collected by her is in the U. S. N. Museum. It was recorded from the "White Mts." by Sprague, and from Hermit Lake by Scudder. I took a specimen at Lonesome Lake, Lincoln on August 1, and one in Franconia on the same day.
44. *Aeshna verticalis* Hagen.
July to September. Dr. Allen took it at Hermit Lake, Mt. Washington; at Carter's Notch; at Intervale and North Conway from July 22 to Sept. 11. In view, however, of the southern range of this species it would seem probable that his specimens were misdetermined. *A. canadensis*, a very closely related species, undescribed in 1899, was probably the insect captured.

LIBELLULIDÆ.

45. *Macromia illinoiensis* Walsh.
June. Dr. Allen took a male at Intervale on June 18.
46. *Dorocordulia libera* Selys.
Mrs. Slosson took it in Franconia.
47. *Helocordulia uhleri* Selys.
June. I took a male on June 25 at Echo Lake, Franconia.

48. *Somatochlora albicincta* Burm.
July and August. Drs. Calvert and Scudder found it at Hermit Lake, Mt. Washington. Dr. Allen at Carter's Notch on July 24. I found it at Lonsome Lake, Lincoln, from July 4 to August 1, and at Profile Lake, Franconia, from July 20 to 27.
49. *Somatochlora cingulata* Selys.
July. Hagen reported it from the "White Mts.," and Dr. Allen took four specimens at Carter's Notch on July 22.
50. *Somatochlora forcipata* Scudd.
July. Mrs. Slosson took it at Franconia and on Mt. Washington. Dr. Scudder's type was taken at "The Glen, White Mts.," and I took it at Profile Lake on July 20.
51. *Somatochlora elongata* Scudd.
July and August. Dr. Scudder's type was taken in the "White Mts." at Hermit Lake, Mt. Washington, and Mrs. Slosson took it at Franconia, and a specimen collected by her is in the U. S. N. Museum. Dr. Allen took it in the Saco meadows, Intervale, from Aug. 16 to 21 and I took two specimens at Profile Lake, July 27.
52. *Somatochlora minor* Calvert.
June. One of Dr. Calvert's types came from Franconia, where it was also taken by Mrs. Slosson on the Butter Hill Road.
53. *Somatochlora tenebrosa* Say.
August. Dr. Allen took one at Intervale on August 15.
54. *Somatochlora walshii* Scudd.
August. Dr. Scudder's type was taken at The Glen, "White Mts."
55. *Cordulia shurtleffi* Scudder.
June to August. Dr. Scudder's type was taken at Hermit Lake, Mt. Washington. Mrs. Slosson took it at Crawford Notch and Franconia, and I took it at Echo Lake, June 27.
56. *Tetragoneuria canis* MacLach.
Mrs. Slosson took one example of this species at Franconia.
57. *Libellula exusta* Say.
June and July. Mrs. Slosson took it at Franconia, and I found it at Streeter pond, Franconia, from July 3-12. Dr. Allen took it at Intervale from June 19 to July 28.
58. *Libellula pulchella* Drury.
July. Mrs. Slosson took it at Franconia, and Dr. Allen at Intervale from July 20 to Aug. 31. I found it common at Pearl Lake, Lisbon, on July 25, and at Mill Pond, Lyman, on July 29.
59. *Libellula quadrimaculata* Linn.
June and July. Mrs. Slosson found it at Franconia, and I found it common at Mill Pond, Lyman, July 16, and saw one specimen at Pearl Lake, Lisbon, on July 25.
60. *Plathemis lydia* Drury.
June and July. Mrs. Slosson found it at Franconia, and Dr. Allen at Intervale from June 22 to July 24.
61. *Nannothemis bella* Uhler.
July. Dr. Allen took it at Pudding Pond, North Conway, from July 1 to 28, and I found it common at Mill Pond, Lyman, July 16 to 29.

62. *Sympetrum costiferum* Hagen.
July and August. Mrs. Slosson took it at Franconia, and a specimen of her collecting is in the U. S. N. Museum. Dr. Allen took it from July 28 to Aug. 21 at North Conway and Intervale. I found it common at Streeter Pond, Franconia, and at Forest Lake, Whitefield, from July 12 to 31.
63. *Sympetrum rubicundulum* Say.
July and September. Mrs. Slosson took it at Franconia and Mt. Washington; Dr. Calvert at Fabyan's; Hagen records it from Hermit Lake, "White Mts.;" and Dr. Allen took it from July 4 to Sept. 1, at North Conway and Intervale. I found it at Pearl Lake, Lisbon, and at Mill Pond, Lyman, from July 25 to 29.
64. *Sympetrum obtusum* Hagen.
July and August. Dr. Calvert took it at Fabyan's, and Dr. Allen at North Conway and Intervale from July 4 to Sept. 1. I took a single male at Pearl Lake, Lisbon, on July 25. Mrs. Slosson took it at Franconia.
65. *Sympetrum scoticum* Donovan.
Mrs. Slosson took one example at Franconia. It has never been taken again in New England.
66. *Sympetrum semicinctum* Say.
July and August. Hagen recorded it from the "White Mts.;" Mrs. Slosson from Franconia; Dr. Calvert from Fabyan's; and Dr. Allen took one at Intervale on Aug. 16. I found it at Streeter Pond, July 12, and at Mill Pond, Lyman, on July 17.
67. *Sympetrum vicinum* Hagen.
Mrs. Slosson took it at Franconia; Dr. Calvert at Fabyan's; and Dr. Allen at Intervale from Aug. 10 to Sept. 13.
68. *Leucorrhinia frigida* Hagen.
July. Mrs. Slosson took it at Franconia and Mt. Washington, and Dr. Allen on July 1, at Pudding Pond, North Conway.
69. *Leucorrhinia glacialis* Hagen.
June and July. Mrs. Slosson took it at Franconia, and on Mt. Washington. Hagen recorded it from the "White Mts." Dr. Allen at North Conway from June 21 to July 1. I found it common at Lonesome Lake, Lincoln, on July 4, and rare on Aug. 1.
70. *Leucorrhinia intacta* Hagen.
June and July. Mrs. Slosson took it at Franconia, and on Mt. Washington. Dr. Allen found it common at Intervale from June 20 to July 4. I found it at Streeter Pond, Franconia on July 3, and at Mill Pond, Lyman, on July 17.
71. *Leucorrhinia hudsonica* Selys.
Mrs. Slosson took it at Franconia, and on Mt. Washington.
72. *Leucorrhinia proxima* Calvert.
Mrs. Slosson took it at Franconia, and on Mt. Washington, and there is a specimen in the U. S. N. Museum collected by her. Hagen recorded it from the "White Mts."