one reported south of the Georgian Bay, although in the east it is stated, in Macoun's "Birds of Canada," that several nests were found by the Rev. C. J. Young, in Leeds County, and one was shot by Mr. Spreadborough at Cache Lake, Algonquin Park, in July, 1910. These are the only records I can locate at present with regard to the nesting of this bird in the longitude of Ontario, which goes to show that our knowledge of the northern distribution of a few of our migrants is, as yet, very incomplete.

W. E. SAUNDERS.

ADDITIONS TO THE FLORA OF VANCOUVER ISLAND.*

By J. M. Macoun, Assistant Naturalist, Geological Survey of Canada.

For nearly twenty years after the publication of Part V of the Catalogue of Canadian Plants, in 1890, very little systematic botanical work was done on Vancouver Island, except in 1893 when Prof. John Macoun spent the collecting season there. Notes on the new species and additions to the flora of Vancouver Island made in that year were published in "Contributions from the Herbarium of the Geological Survey," printed in the Canadian

Record of Science and The Ottawa Naturalist.

The need of a thorough study of the flora of Vancouver Island was so pressing that in 1908 Prof. John Macoun was instructed to undertake it, and that year he worked in the vicinity of Victoria and north to Nanaimo, and the following season, 1909, on the west coast, chiefly about Ucluelet. He was assisted both years by Mr. William Spreadborough, who had also collected at Nootka in 1906. Prof. Macoun, being otherwise employed in 1910 and 1911, Mr. Spreadborough continued the work of collecting in these years, spending part of the season of 1910 on Queen Charlotte Islands and part of 1911 in the interior of Vancouver Island. In 1912 both the writer and Prof. Macoun collected on Vancouver Island, the former on the islands in the Gulf of Georgia and in Strathcona Park, the latter chiefly in the vicinity of Sidney. The manuscript for a flora of Vancouver Island is now almost ready for the press, but so many additions to the known flora have been made in the years referred to and so many are now interested in the Vancouver Island flora that it seems advisable to publish for their information a preliminary list of the additions that have been made to the flora in recent years. Where not otherwise stated, all the

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citations refer to collections made by members of the Geological Survey staff, and the specimens are in our herbarium.

The list that follows is by no means complete and will be supplemented by the descriptions of new species.

1. Asplenium viride, Huds.

Ucluelet; Strathcona Park.

2. Asplenium cyclosorum, Ruprt.

Common; not separated from A. Filix-foemina in earlier publications.

3. Polystichum munitum var. imbricatum (D. C. Eaton)

Maxon.

Mount Finlayson; Skirt Mountain.

4. Polystichum Andersoni, Hopkins. N. sp. in ed. Strathcona Park. (W. B. Anderson).

5. Polystichum oreopteris, Swartz.

Shawnigan Lake. (J. R. Anderson).

6. Woodwardia spinulosa, Mart. and Gal. Texada Island. (J. R. Anderson).

7. Woodsia oregana, D. C. Eaton. Cowichan River, alt. 4,000 ft.

8. Equisetum litorale, Kuhlewein.

Shawnigan Lake.

9. Lycopodium inundatum, L. Ucluelet.

10. Selaginella Wallacei, Hieron.

Common, recorded as S. rupestris.

11. Selaginella densa, Rydb.

Jansen's Island, Ucluelet.

12. Selaginella selaginoides, (L.) Link. Ucluelet.

13. Sparganium minimum, Fries.

San Juan Lake. (Rosendahl).

15. Potamogeton zosterifolius, Schumacher. Langford Lake.

16. Scheuchzeria palustris L.

Cowichan Lake.
Panicum pacificum, Hitchc. and Chase.

Renfrew district. (Rosendahl). Bear Lake; Strathcona Park.

18. Hierochloe odorata, (L.) Wahl.

Courtenay River near Comox.

19. Alopecurus californicus, Vasey. Head of Ucluelet Inlet.

20. Agrostis oregonensis, Vasey.

Renfrew district. (Rosendahl). Rare at Ucluelet.

21. Agrostis longiligula, Hitchc.

Departure Bay; Bear Lake.

22. Agrostis inflata, Scribner. Esquimault.

23. Agrostis aequivalvis, Trin.

District of Renfrew. (Rosendahl).

Colquitz River; Ucluelet.

24. Calamagrostis canadensis var. acuminata, Vasey.

Comox; Departure Bay.

25. Koeleria cristata, (L.) Pers.

Burnside Road, Victoria; Bear Lake.

26. Trisetum Nutkensis, (Presl.) Scribn. and Merrill. Renfrew district. (Rosendahl).

27. Deschampsia cæspitosa, Beauv. Comox; Strathcona Park.

28. Deschampsia atropurpurea (Wahl.) Scheele.
Mount Benson; Strathcona Park.

29. Avena fatua var. glabrata, Peter.

Sooke; Victoria; Departure Bay.

30. Beckmannia erucæformis, (L.) Host. Colquitz River.

31. Distichlis spicata, Beauv.

Ucluelet. Introduced from east with cranberry plants.

32. Cynosurus echinatus, L.

Oak Bay, Victoria; Nanaimo.

33. Poa trivalis L. var. filiculmis, Scribn.

34. Poa eminens, Presl.

West shore, Vancouver Island. (J. R. Anderson). Long Beach below Clayoquot.

35. Festuca subulata, Bong.
Bear Lake; Nanaimo.

36. Festuca elatior, L. Comox.

37. Bromus commutatus, Schrad.
Victoria; Cowichan Lake.

38. Bromus pacificus, Shear.
Renfrew district. (Rosendahl).

39. Bromus sterilis, L. Near Victoria.

40. Bromus rubens, L. Nanaimo.

41. Hordeum boreale, Scribn.
Renfrew district. (Rosendahl).

42. Elymus glaucus var. hirsutus, M. O. Malte in ed. Bear Lake, Cowichan Lake.

43. Elymus glaucus var. robustus, Davy. Victoria; Ucluelet; Beacon Hill.

44. Elymus borealis, Scribn.

Renfrew district. (Rosendahl).

Ucluelet.

Note.—The names of many grasses have been changed since the publication of the Catalogue of Canadian Plants. The above are all additions.

45. Scirpus riparius, (R. Br.) Spreng.
Victoria; Comox; Departure Bay; Ucluelet.

46. Scirpus validus, Vahl.

Wellington; Sidney; Beaver Lake near Victoria.

47. Carex scoparia, Schk.
Ucluelet. Introduced with cranberry plants from the east.

48. Carex pratensis, Drej.
Victoria; Mount Benson; Departure Bay; Comox.

49. Carex ænea, Fernald.

Departure Bay.

50. Carex stellulata var. cephalantha, Bail. Wellington; Ucluelet.

51. Carex Deweyana, Schwein. Renfrew district; Victoria.

52. Carex pseudo-Deweyana, Kukenthal. Comox.

53. Carex globosa, Boott.
Bear Lake, Cowichan.

54. Carex limosa, Linn. Near Comox.

55. Carex flexilis, Rudge.
Ucluelet. Introduced from the east with cranberry plants.

56. Carex aurea, Nutt. Cadboro Bay; Comox.

57. Carex vesicaria var. major, Boott. Near Victoria; Wellington.

58. Carex physocarpa, Presl. Kennedy Lake near Ucluelet.

59. Carex Bonplandii, Kunth. Comax; Cedar Hill.

60. Spirodela polyrhiza (L.) Schleid.

61. Juneus balticus, Willd.

Renfrew district. (Rosendahl). Ucluelet; Departure Bay.

62. Juneus effusus var. compactus L. and C.

Ucluelet. Introduced with cranberry plants from the east.

63. Juneus alpinus var. fuscescens, Fernald.

Strathcona Park.

64. Juneus orthophyllus, Coville.

Koksalah River.

65. Juncus effusus, L. var. bruneus, Engelm. Ucluelet; Departure Bay.

66. Juneus effusus, L. var. pacificus, F. and W.

Victoria; Nanaimo; Ucluelet.

67. Juncus effusus var. gracilis, Hooker. Sidney.

68. Juncus falcatus var. alascensis, Coville.

Renfrew district. (Rosendahl). Kennedy Lake near Ucluelet; Strathcona Park.

69. Juncus brevicaudatus, (Englem.) Fernald.

Ucluelet. Introduced with cranberry plants from the east.

70. Juneus Mertensianus, Bong.

Ucluelet; Strathcona Park.

71. Luzula comosa, E. Meyer.

Victoria. Only record for typical L. comosa.

72. Erythronium Howellii, Wats.?

Barklay Sound. (Hillier). Cowichan Lake. First collected by Anderson.

73. Erythronium montanum, Wats.?
Grand Central Lake. (Fraser).

74. Lloydia serotina, (L.) Swert.
Strathcona Park.

75. Disporum Smithii, (Hook.) Piper.
Gordon River. (Rosendahl). Cowichan Lake.

76. Streptopus curvipes, Vail.
Cowichan River; Strathcona Park.

77. Clintonia uniflora, Menzies.
Cowichan Lake; Strathcona Park.

78. Iris versicolor, L.

Ucluelet. Introduced with cranberry plants from the east.

79. Sisyrinchium idahoense, Bicknell.
Renfrew district. (Rosendahl). Victoria; Nanaimo;
Shawnigan Lake; Ucluelet.

80. Sisyrinchium littorale, Greene. Victoria; Ucluelet; Nootka.

81. Sisyrinchium birameum, Piper. Ucluelet.

82. Sisyrinchium Macounii, Bicknell.

Comox; Nanaimo; Beaver Hill; Ucluelet.

83. Listera caurina, Piper.

Cameron Lake; Mount Benson; Ucluelet.

84. Salix macrostachya, Nutt. Koksilah River.

85. Salix sp.

A common species around Victoria. Not yet described but heretofore referred to S. cordata.

86. Comandra Richardsoniana, Fernald.

Langford Plains near Goldstream.

87. Rumex occidentalis, S. Wats.

Esquimault; Sidney; Nanaimo; Ucluelet. 8. Rumex conglomeratus, Murr.

Departure Bay.

89. Rumex salicifolius, Weinm.

Nanaimo; Ucluelet; Cowichan Lake.

90. Polygonum aviculare var. vegetum, Ledeb. Near Comox; Nanaimo.

91. Polygonum Douglasii, Greene. Near Duncan's.

92. Polygonum spergulariæforme, Meisn.

Beacon Hill; Nanaimo; Cowichan River; Campbell River.

93. Polygonum tomentosum, Schrank. Near Victoria.

94. Polygonum amphibum var. Hartwrightii, (Gray) Bissell. Colquitz River.

95. Polygonum hydropiperoides, Michx. Elk Lake near Victoria.

96. Amaranthus græcizans, L. Departure Bay.

97. Amaranthus blitoides, Wats.
Departure Bay.

98. Abronia umbellata, Lam.

Pachene Bay. (Geo. Fraser).



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