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# THE OTTAWA NATURALIST

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# THE OTTAWA NATURALIST

VOL. XXIX.

MARCH, 1916

No. 12

## DATA ON SEED MATURITY OF SOME ONTARIO PLANTS.

By W. HERRIOT, GALT, ONT.

During the seasons from 1909 to 1914, the writer collected extensively the seeds of many native and naturalized plants, in the vicinity of Galt, Ont., for the Seed Branch at Ottawa.

While our standard works on botany usually give the month of flowering of most plants, and many published lists of local floras give exact dates of flowering, very little has been published as to the time of the maturing of the seed.

Having accumulated considerable data on this point, the list published here may prove of some value; the dates given for flowering are when the plants are well into bloom, and in early flowering plants this may vary considerably in different years, according to weather conditions in spring. The dates given for seed maturing are when seed was collected, and where plants ripen and shed their seed during a short period, as in *Claytonia*, the dates can be taken to represent fairly well the fruiting season. In some few instances where the seed is persistent after maturity, as in *Rumex*, the date of collecting may be some little time after maturity, and, therefore, not so accurate. Again, the dates of flowering and of seed maturity in many cases were not taken during the same year, but, as before mentioned, except in early flowering species the time of flowering from year to year is fairly constant:—

NAME	Time of Flowering	Seed Mature
SPARGANIUM DIVERSIFOLIUM Graebner.....	Jul 15	Sep 23
SCHEUCHZERIA PALUSTRIS L.....	Jun 8	Sep 4
SAGITTARIA ARIFOLIA Nutt.....	Jul 27	Sep 9
ALISMA PLANTAGO-AQUATICA L.....	Aug 14	Sep 7
ANDROPOGON SCOPARIUS Michx. ....	Aug 7	Sep 17

NAME	Time of Flowering	Seed Mature
ANDROPOGON FURCATUS Muhl.....	Aug 25	Sep 19
SORGHASTRUM NUTANS (L.) Nash.....	Aug 25	Sep 17
DIGITARIA HUMIFUSA Pers.....	Aug 17	Sep 21
DIGITARIA SANGUINALIS (L.) Scop.....	Sep 1	Oct 2
PANICUM LINEARIFOLIUM Scribn.....	Jul 6	Jul 23
PANICUM LATIFOLIUM L.....	Jun 28	Jul 20
LEERSIA ORYZOIDES (L.) Sw.....	Aug 5	Sep 18
MILLIUM EFFUSUM L.....	Jun 3	Jun 17
ORYZOPSIS ASPERIFOLIA Michx.....	Apr 23	Jun 10
MUHLENBERGIA MEXICANA (L.) Trin.....	Sep 6	Oct 15
BRACHYELYTRUM ERECTUM (Shreb.) Beauv.....	Jun 28	Jul 29
ALOPECURUS GENICULATUS L. var. ARISTULATUS Torr.....	Jun 14	Jul 11
CINNA LATIFOLIA (Trev.) Griseb.....	Aug 1	Aug 26
SPHENOPHOLIS PALLENS (Spreng.) Scribn.....	Jul 6	Jul 20
DESCHAMPSIA CAESPITOSA (L.) Beauv.....	Jun 16	Jul 2
AVENA STERILIS L.....	Jul 26	Aug 12
DANTHONIA SPICATA (L.) Beauv.....	Jul 1	Jul 19
SPARTINA MICHAUXIANA Hitchc.....	Aug 1	Sep 17
POA ANNUA L.....	Apr 30	Jun 3
POA TRIFLORA Gilib.....	Jul 9	Jul 29
POA DEBILIS Torr.....	May 28	Jun 16
POA ALSODES Gray.....	Jun 1	Jun 16
GLYCERIA CANADENSIS (Michx.) Trin.....	Jul 6	Aug 8
GLYCERIA NERVATA (Willd.) Trin.....	Jun 3	Jun 27
GLYCERIA GRANDIS Wats.....	Jun 29	Jul 19
GLYCERIA SEPTENTRIONALIS Hitchc.....	Jun 14	Jul 9
PUCCINELLIA DISTANS (L.) Parl.....	Jun 23	Jul 8
FESTUCA NUTANS Spreng.....	Jul 1	Jul 13
MELICA STRIATA (Michx.) Hitchc.....	Jun 21	Jul 13
BROMUS TECTORUM L.....	Jun 13	Jul 13
BROMUS KALMII Gray.....	Aug 25	Sep 4
AGROPYRUM REPENS (L.) Beauv.....	Jul 25	Sep 13
AGROPYRUM CANINUM (L.) Beauv.....	Jul 1	Sep 11
ELYMUS STRIATUS Willd.....	Jul 20	Aug 13
ELYMUS CANADENSIS L.....	Aug 25	Sep 18
HYSTRIX PATULA Moench.....	Jul 13	Sep 4
CYPERUS ESCULENTUS L.....	Aug 18	Oct 30
ELEOCHARIS OVATA (Roth.) R. & S.....	Jun 15	Jul 21
SCIRPUS VALIDUS Vahl.....	Jul 27	Sep 9
SCIRPUS ATROVIRENS Muhl.....	Aug 3	Oct 7
SCIRPUS CYPERINUS (L.) Kunth.....	Jul 31	Oct 1
RYNCHOSPORA FUSCA (L.) Ait. f.....	Aug 31	Sep 6
CLADIUM MARISCOIDES (Muhl.) Torr.....	Aug 31	Sep 2
CAREX CRISTATA Schwein.....	Aug 6	Aug 25

NAME	Time of Flowering	Seed Mature
CAREX BEBBII Olney	Jul 3	Aug 6
CAREX SYCHNOCEPHALA Carey	Jul 30	Aug 26
CAREX SCIRPOIDES Schkuhr	Jun 3	Jun 24
CAREX VULPINOIDEA Michx.	Jul 1	Jul 18
CAREX DIANDRA Schrank	Jun 20	Jul 11
CAREX STIPATA Muhl	Jun 4	Jun 21
CAREX STRICTA Lam	Jun 4	Jun 25
CAREX LEPTALEA Wahlenb.	Jun 1	Jun 26
CAREX PUBESCENS Muhl.	Jun 1	Jun 21
CAREX FLAVA L.	May 28	Jul 13
CAREX HYSTERICINA Muhl.	Jun 16	Jul 2
CAREX SCHWEINITZII Dewey	Jun 4	Jul 13
CAREX LUPULINA Muhl.	Aug 1	Oct 7
CAREX ROSTRATA Stokes	Jun 10	Jul 9
ARISAEMA TRIPHYLLUM (L.) Schott.	May 26	Aug 26
CALLA PALUSTRIS L.	May 6	Sep 7
SYMPLOCARPUS FOETIDUS (L.) Nutt.	Apr 20	Oct 14
JUNCUS TENUIS Willd.	Jun 29	Jul 11
JUNCUS EFFUSUS L.	Jun 23	Jul 29
JUNCUS CANADENSIS J. Gay	Aug 31	Sep 4
LILIUM SUPERBUM L.	Jul 6	Sep 16
CLINTONIA BOREALIS (Ait.) Raf.	Jun 3	Jul 22
SMILACINA RACEMOSA (L.) Desf.	Jun 15	Sep 16
STREPTOPUS ROSEUS Michx.	Jun 3	Jul 22
TRILLIUM GRANDIFLORUM (Michx.) Salisb.	May 14	Jun 15
CANNABIS SATIVA L.	Aug 23	Sep 25
URTICA GRACILIS Ait.	Jul 25	Oct 15
BOEHMERIA CYLINDRICA (L.) SW.	Aug 3	Oct 28
RUMEX BRITANNICA L.	Jul 26	Sep 7
RUMEX VERTICILLATUS L.	Jul 23	Sep 6
RUMEX OBTUSIFOLIUS L.	Jul 8	Jul 27
RUMEX ACETOSELLA L.	Jun 13	Jul 15
RUMEX CRISPUS L.	Jun 27	Jul 15
POLYGONUM PENNSYLVANICUM L.	Aug 3	Sep 1
POLYGONUM HYDROPIPER L.	Aug 26	Sep 19
POLYGONUM SAGITTATUM L.	Aug 6	Aug 23
POLYGONUM AVICULARE L.	Sep 1	Oct 14
KOCHIA SCOPARIA (L.) Schrad.	Aug 31	Oct 9
SPERGULA ARVENSIS L.	Jun 26	Aug 17
ARENARIA SERPYLLIFOLIA L.	Jun 1	Jun 28
CERASTIUM VULGATUM L.	Jun 4	Jun 22
LYCHNIS ALBA Mill.	Jun 5	Sep 19
SILENE LATIFOLIA (Mill.) B. & R.	Jun 14	Jul 22
SAPONARIA OFFICINALIS L.	Aug 2	Sep 22
CLAYTONIA VIRGINICA L.	Apr 9	May 24

NAME	Time of Flowering	Seed Mature
CASTALIA ODORATA (Ait.) W. & W.....	Jul 9	Aug 6
RANUNCULUS DELPHINIFOLIUS Torr.....	May 7	Jun 18
RANUNCULUS SCCELERATUS L.....	May 24	Jun 21
RANUNCULUS ABORTIVUS L.....	May 7	Jun 11
RANUNCULUS RECURVATUS Poir.....	May 28	Jun 27
RANUNCULUS FASCICULARIS Muhl.....	Apr 16	Jun 11
RANUNCULUS SEPTENTRIONALIS Poir.....	Jun 4	Jul 4
RANUNCULUS REPENS L.....	May 24	Jul 5
RANUNCULUS PENNSYLVANICUS L.f.....	Jul 9	Aug 6
THALICTRUM DIOICUM L.....	Apr 23	Jul 6
THALICTRUM POLYGAMUM Muhl.....	Jul 13	Oct 18
HEPATICIA TRILOBA Chaix.....	Apr 4	Jun 10
ANEMONE VIRGINIANA L.....	Jun 14	Sep 11
CALTHA PALUSTRIS L.....	May 10	Jun 17
AQUILEGIA CANADENSIS L.....	Jun 1	Jun 24
ACTAEA RUBRA (Ait.) Willd.....	May 24	Jul 15
MENISPERMUM CANADENSE L.....	Jul 6	Sep 23
PODOPHYLLUM PELTATUM L.....	Jun 7	Aug 15
CAULOPHYLLUM THALICTROIDES (L.) Michx...	Apr 4	Aug 25
SANGUINARIA CANADENSIS L.....	Apr 9	Jun 25
CHELIDONIUM MAJUS L.....	May 21	Jun 28
PAPAVER RHOEAS L.....	Jul 21	Aug 15
FUMARIA OFFICINALIS L.....	Aug 4	Sep 9
BERTEROA INCANA (L.) DC.....	Jul 23	Oct 16
LEPIDIUM APETALUM Willd.....	Jun 1	Jul 10
CAPSELLA BURSA-PASTORIS (L.) Medic.....	May 24	Jun 17
CAMELINA MICROCARPA Andrz.....	Jun 3	Jul 7
BRASSICA ALBA (L.) Boiss.....	Jul 1	Sep 15
BRASSICA NIGRA (L.) Koch.....	Jul 6	Sep 25
SISYMBRIUM OFFICINALE (L.) Scop.....	Jul 9	Aug 31
RADICULA NASTURTIUM-AQUATICUM(L) B.&B.	Jun 15	Jul 25
BARBAPA STRICTA Andrz.....	May 20	Jul 29
ERUCA SATIVA.....	Aug 1	Sep 25
SARRACENIA PURPUREA L.....	Jun 20	Aug 27
PENTHORUM SEDOIDES L.....	Jul 30	Aug 26
MITELLA DIPHYLLA L.....	May 11	Jun 3
PARNASSIA CAROLINIANA Michx.....	Sep 16	Sep 31
PHYSOCARPUS OPULIFOLIUS (L.) Maxim.....	Jul 3	Sep 7
POTENTILLA RECTA L.....	Jun 18	Aug 6
POTENTILLA PALUSTRIS (L.) Scop.....	Jul 1	Jul 23
GEUM CANADENSE Jacq.....	Jun 25	Aug 25
GEUM STRICTUM Ait.....	Jul 13	Sep 4
GEUM RIVALE L.....	Jun 3	Jun 28
GEUM TRIFLORUM Pursh.....	May 24	Jun 25
AGRIMONIA GRYPOSEPALA Wallr.....	Jul 18	Sep 10



NAME	Time of Flowering	Seed Mature
GLEDITSIA TRIACANTHOS L.....	Jun 14	Nov 17
LUPINUS PERENNIS L.....	Jun 14	Jul 9
MELILOTUS OFFICINALIS (L.) Lam.....	Jul 6	Aug 10
MELILOTUS ALBA Desr.....	Jul 6	Aug 26
LOTUS CORNICULATUS L.....	Jul 15	Aug 28
ROBINIA PSEUDO-ACACIA L.....	Jun 20	Nov 23
DESMODIUM PANICULATUM (L.) D.C.....	Aug 6	Sep 24
LESPEDEZA FRUTESCENS (L.) Britton.....	Aug 14	Sep 24
LESPEDEZA CAPITATA Michx.....	Aug 24	Oct 26
GERANIUM MACULATUM L.....	May 28	Jul 1
POLYGALA SENEGA L.....	Jun 18	Jul 4
ACALYPHA VIRGINICA L.....	Aug 25	Oct 1
EUPHORBIA CYPARISSIAS L.....	May 24	Jul 7
FLOERKEA PROSERPINACOIDES Willd.....	May 15	Jun 1
RHUS TOXICODENDRON L.....	Jun 23	Oct 9
IMPATIENS FULVA Nutt.....	Aug 1	Sep 10
CEANOTHUS AMERICANUS L.....	Jul 28	Aug 25
MALVA ROTUNDIFOLIA L.....	Jul 19	Sep 15
MALVA MOSCHATA L.....	Jun 14	Aug 9
HYPERICUM PERFORATUM L.....	Jul 4	Sep 18
VIOLA ARVENSIS Murr.....	May 22	Aug 7
DECODON VERTICILLATUS (L.) Ell.....	Aug 4	Sep 23
EPILOBIUM ANGUSTIFOLIUM L.....	Aug 1	Aug 26
OENOTHERA BIENNIS L.....	Aug 17	Sep 9
CIRCAEA LUTETIANA L.....	Jul 17	Aug 13
ARALIA RACEMOSA L.....	Jul 27	Sep 10
ARALIA NUDICAULIS L.....	May 28	Jul 23
PANAX QUINQUEFOLIUM L.....	Jul 1	Sep 5
SANICULA MARILANDICA L.....	Jun 16	Sep 4
SANICULA GREGARIA Bicknell.....	Jun 8	Aug 26
SANICULA TRIFOLIATA Bicknell.....	Jun 19	Aug 13
OSMORHIZA CLAYTONI (Michx.) Clarke.....	May 28	Jul 25
OSMORHIZA LONGISTYLIS (Torr.) DC.....	Jun 10	Jul 25
CONIUM MACULATUM L.....	Jul 29	Sep 15
CICUTA MACULATA L.....	Jul 25	Sep 20
CARUM CARVI L.....	Jun 11	Jul 20
SIMUM CICUTÆFOLIUM Schrank.....	Jul 23	Sep 25
CRYPTOTAENIA CANADENSIS (L.) DC.....	Jun 16	Aug 26
ZIZIA AUKEA (L.) Koch.....	Jun 5	Aug 6
FOENICULUM VULGARE Hill.....	Aug 15	Oct 4
TAENIDIA INTEGERRIMA (L.) Drude.....	Jun 14	Aug 12
AETHUSA CYNAPIUM L.....	Jul 10	Sep 18
LEVISTICUM OFFICINALE (L.) Koch.....	Jul 6	Aug 15
ANETHUM GRAVEOLENS L.....	Jul 15	Sep 30
HERACLEUM LANATUM Michx.....	Jun 27	Sep 11

NAME	Time of Flowering	Seed Mature
CONIOSELINUM CHINENSE (L.) BSP.....	Aug 31	Sep 24
ANGELICA ATROPURPUREA L.....	Jul 8	Jul 25
DAUCUS CAROTA L.....	Aug 6	Sep 17
KALMIA POLIFOLIA Wang.....	Jun 4	Jul 8
LYSIMACHIA VULGARIS L.....	Jul 7	Sep 18
ANAGALLIS ARVENSIS L.....	Jul 17	Aug 31
GENTIANA CRINITA Froel.....	Sep 4	Sep 30
GENTIANA ANDREWSII Griseb.....	Sep 1	Sep 16
FRASERA CAROLINIENSIS Walt.....	Jun 15	Sep 15
HALENIA DEFLEXA (Sm.) Griseb.....	Aug 16	Sep 27
MENYANTHES TRIFOLIATA L.....	Jun 2	Jul 14
ASCLEPIAS TUBEROSA L.....	Jul 13	Oct 7
ASCLEPIAS INCARNATA L.....	Jul 11	Sep 11
ASCLEPIAS SYRIACA L.....	Jul 8	Oct 2
IPOMOEA PURPUREA (L.) Roth.....	Jul 29	Sep 1
CONVOLVULUS SEPIUM L.....	Jun 27	Oct 2
CUSCUTA GRONOVII Willd.....	Aug 23	Sep 16
HYDROPHYLLUM VIRGINIANUM L.....	Jun 30	Jul 28
LAPULLA VIRGINIANA (L.) Greene.....	Jul 17	Sep 10
MYOSOTIS ARVENSIS (L.) Hill.....	Jul 16	Aug 17
VERBENA URTICAEFOLIA L.....	Aug 3	Sep 18
VERBENA HASTATA L.....	Jul 11	Sep 18
MARRUBIUM VULGARE L.....	Jul 5	Aug 17
PRUNELLA VULGARIS L.....	Jun 29	Aug 25
LEONURUS CARDIACA L.....	Jul 1	Sep 11
HYSSOPUS OFFICINALIS L.....	Jul 10	Sep 18
LYCOPUS VIRGINICUS L.....	Aug 11	Sep 13
LYCOPUS AMERICANUS Muhl.....	Aug 11	Sep 11
SOLANUM DULCAMARA L.....	Jun 18	Oct 2
SOLANUM NIGRUM L.....	Sep 2	Oct 1
PHYSALIS HETEROPHYLLA Nees.....	Jul 15	Sep 24
NICANDRA PHYSALOIDES (L.) Pers.....	Sep 5	Sep 21
HYOSCYAMUS NIGER L.....	May 26	Sep 25
DATURA STRAMONIUM L.....	Aug 17	Oct 1
VERBASCUM BLATTARIA L.....	Aug 3	Sep 18
PENSTEMON HIRSUTUS (L.) Willd.....	Jun 8	Aug 5
CHELONE GLABRA L.....	Aug 11	Oct 2
DIGITALIS PURPUREA L.....	Jun 25	Aug 7
VERONICA OFFICINALIS L.....	Jun 16	Jul 29
GERARDIA VIRGINICA (L.) BSP.....	Aug 6	Sep 24
GERARDIA PAUPERCUA (Gray) Britton.....	Jul 25	Sep 30
PEDICULARIS CANADENSIS L.....	May 19	Jul 9
EPIFAGUS VIRGINIANA (L.) Bart.....	Aug 27	Oct 6
PHRYMA LEPTOSTACHYA L.....	Jul 21	Sep 9
PLANTAGO LANCEOLATA L.....	Jul 27	Aug 23

NAME	Time of Flowering	Seed Mature
GALIUM APARINE L.....	May 21	Jul 1
GALIUM APARINE VAR. VAILLANTII (DC.) KOCH.	May 19	Jun 17
GALIUM CIRCAEZANS Michx.....	Jun 30	Aug 13
GALIUM TRIFIDUM L.....	Jun 15	Aug 23
GALIUM MOLLOGO L.....	Jul 1	Sep 4
CEPHALANTHUS OCCIDENTALIS L.....	Jul 27	Oct 7
TRIOSTEUM AURANTIACUM Bicknell.....	Jun 8	Sep 2
DIPSACUS SYLVESTRIS Huds.....	Aug 11	Sep 11
ECHINOCYSTIS LOBATA (Michx.) T. & G.....	Aug 2	Sep 25
LOBELIA SIPHILITICA L.....	Jul 20	Oct 14
EUPATORIUM PURPUREUM L.....	Aug 2	Sep 17
EUPATORIUM PERFOLIATUM L.....	Aug 11	Oct 15
SOLIDAGO SQUARROSA Muhl.....	Aug 27	Oct 15
SOLIDAGO JUNCEA Ait.....	Aug 23	Oct 22
SOLIDAGO GRAMINIFOLIA (L.) Salisb.....	Aug 25	Oct 22
ASTER MACROPHYLLUS L.....	Aug 31	Oct 19
ASTER NOVAE-ANGLIAE L.....	Sep 2	Oct 21
ASTER MULTIFLORUS Ait.....	Sep 19	Oct 30
ASTER PUNICEUS L.....	Aug 31	Oct 21
INULA HELENIUM L.....	Aug 11	Oct 25
XANTHIUM SPINOSUM L.....	Aug 5	Oct 29
XANTHIUM CANADENSE Mill.....	Sep 1	Oct 16
XANTHIUM ECHINATUM Murr.....	Aug 2	Oct 21
RUDBECKIA HIRTA L.....	Jul 27	Sep 18
HELIANTHUS STROMOSUS L.....	Aug 23	Sep 27
BIDENS FRONDOSA L.....	Aug 31	Oct 2
BIDENS CERNUA L.....	Sep 1	Oct 23
BIDENS LAEVIS (L.) BSP.....	Aug 31	Oct 15
ANTHEMIS ARVENSIS L.....	Jun 10	Jul 26
TANACETUM VULGARE L.....	Aug 17	Oct 14
ARTEMISIA VULGARIS L.....	Aug 22	Sep 29
ERECTHITES HILRACIFOLIA (L.) Raf.....	Aug 20	Sep 17
SENECIO VULGARIS L.....	Jul 10	Aug 20
CIRSIIUM MUTICUM Michx.....	Aug 31	Sep 2
ONOPORDUM ACANTHIUM L.....	Aug 23	Oct 9
CENTAUREA CYANUS L.....	Aug 1	Aug 25
CNICUS BENEDICTUS L.....	Aug 15	Oct 1
LAPSANA COMMUNIS L.....	Jul 15	Aug 13
TRAGOPOGON PRATENSIS L.....	Jun 4	Jul 15
LACTUCA SCARIOLA L.....	Aug 1	Aug 31

## CANADIAN ANTHROPOLOGY AT THE WASHINGTON MEETINGS.

By HARLAN I. SMITH, Geological Survey, Canada.

The 19th International Congress of Americanists met in Washington from December 27th to 31st, 1915, in affiliation with the American Anthropological Association, the American Folk-lore Society, Section I of the "Pan-American Scientific Congress," the American Historical Association, and the Archaeological Institute of America. The meetings were chiefly held in the large auditorium of the United States National Museum, but branch meetings were held in one of the small lecture halls, and one session was held at Georgetown University, followed by a demonstration of Rare Americana and other objects, and a reception under the auspices of the University.

The programme was unusually full, so that it is possible here to refer only to the titles of papers relating to Canada, or on general subjects touching Canadian problems, and to indicate the part taken in the meetings by Canadian representatives.

"The Culture of a Prehistoric Iroquoian Site in Eastern Ontario," was presented by W. J. Wintemberg, of the Geological Survey of Canada.

"Archaeological Work in Northern Nova Scotia," illustrated with slides; and "Remarkable Stone Sculptures from Yale, B.C.," illustrated with slides, were presented by Harlan I. Smith, Geological Survey of Canada.

"The Beaver Indians" were described by Dr. Pliny Earle Goddard, Curator of Ethnology, American Museum of Natural History, New York.

"Early Jesuit Missions in North America" was the subject of a paper by Rev. John O'Conor, F.X., S.J.

"Le verbe dans les adjectives et les adverbs Porteurs" was the title of a paper presented by Father A. G. Morice, O.M.I., St. Boniface, Manitoba.

"The League of the Iroquois" was described by Mr. J. N. B. Hewitt, Bureau of American Ethnology.

"Preliminary Remarks on the Skeletal Material collected by the Jesup Expedition, especially on the Pacific Coast of Canada," were made by Dr. Bruno Oettinger, American Museum of Natural History.

"Terms of Relationship and the Levirate" were discussed by Dr. E. Sapir, Geological Survey of Canada.

"A critique on The Diffusion of Culture," and a paper on "Totemic Complexes in North America," were given by Dr.

A. A. Goldenweiser, Instructor in Anthropology, Columbia University, New York City.

"Chronological Relations of Coastal Algonkin Culture" were discussed by Alanson Skinner, American Museum of Natural History.

"The Huron-Wyandot Clans," and "The Growth of the Tsimshian Phratries," were the subjects given by Mr. C. M. Barbeau, Geological Survey of Canada.

"Herb Medicine Practices of the North-eastern Algonkians" were discussed by Dr. Frank G. Speck, Assistant Professor of Anthropology, University of Pennsylvania.

"Tribes of the Pacific Coast" were described by Dr. A. L. Kroeber, Associate Professor of Anthropology, University of California.

"Cayuga Ownership of New York Land" was the subject of a paper presented by Miss Grace Ellis Taft.

"Recent Developments in the Study of Indian Music" were discussed by Miss Francis Densmore, Special Investigator in Indian Music for the Bureau of American Ethnology.

"Pictures of the Eskimo Culture near Cape Farewell, South Greenland," illustrated with slides, was the title of a paper given by William Thalbitzer, Copenhagen, Denmark.

"Comparative Study of Pawnee and Blackfoot Rituals" was the subject of a paper sent by Dr. Clark Wissler, Curator of Anthropology, American Museum of Natural History.

The Aleutian Language was compared with the Greenlandic by William Thalbitzer, Copenhagen, Denmark.

"Prehistoric Sites in the State of Maine" were described by Warren K. Moorehead, Curator, Department of Archaeology, Phillips Academy.

"La Vinland—sa localisation probable," was the title of a paper read by Alphonse Gagnon, Secretary, Department of Public Works and Labor, Quebec Provincial Government.

"Indications of Visits of White Men to America before Columbus," illustrated with slides, was discussed by William H. Babcock.

Rev. A. G. Morice, O.M.I., St. Boniface, Manitoba, Harlan I. Smith, Geological Survey of Canada, M. Alphonse Gagnon, of Quebec, and Dr. Edward Sapir, Geological Survey of Canada, each acted as secretary for a session of the meetings.

On Wednesday evening a reception was given by the regents and secretary of the Smithsonian Institution to the Congress of Americanists and affiliated societies at the United States National Museum, and on Thursday evening a dinner was tendered to the members of the Congress by the organizing committee and local members of the Congress at the Cosmos Club.

Special exhibits in the United States National Museum had been prepared for the meetings. Twenty-four busts representing distinguished individual Indians, from delegations sent by various tribes to Washington, were exhibited as examples of accurate and permanent records of the normal types of Indians. Another exhibit showed three varieties of artificial skull deformation practised in America. Tattooing was also shown. It will be remembered that both skull deformations and tattooing are found among the Indians of the Pacific Coast of Canada. An archaeological exhibit of economic plants and plant products of prehistoric America was made by W. E. Stafford, Economic Botanist of the United States Department of Agriculture. This included specimens of corn, beans and squash seeds, similar to those found in the archaeological Iroquoian site at Roebuck, Ontario, recently explored by the Geological Survey.

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#### BOOK NOTICE.

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##### FOREST PROTECTION IN CANADA.

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The Commission of Conservation has just issued a report on "Forest Protection in Canada, 1913-1914," which is of particular interest. It contains much information respecting the work of the provincial forest services and of the federal departments intrusted with the care of our forests.

Forest fire protection is assuming a large place in public attention. It is obvious that, if Canada is to continue as a wood-producing country, she must conserve her resources of this natural product. The report treats exhaustively of the fire protection of forest lands along railway rights-of-way. Through co-operative action, great headway has been made in securing the reduction of forest losses through fires traceable to railway causes.

The forests of British Columbia and on Dominion lands in the west have been dealt with in reports containing the results of special studies conducted by Dr. C. D. Howe and Mr. J. H. White. The Trent watershed in Ontario has also received especial attention, in a report of an investigation by Dr. C. D. Howe, in the townships of Burleigh and Methuen. This district is important in that, while of very little value as an agricultural area, it is being repeatedly overrun by forest fires, and the little remaining merchantable timber destroyed. It is suggested that the area be placed under the control of the Dominion Forestry Branch for protection from fires and for reforestation.

## THE USE OF ORNAMENTAL TREES AND SHRUBS.\*

BY W. T. MACOUN, DOMINION HORTICULTURIST.

The extensive forests of Canada are rapidly disappearing through the inroads made upon them by the axe and by fire, but one may yet see some fine woodlands and some magnificent specimens of the stately and attractive trees with which the Dominion is blessed in great variety. These have their economic value, but they have a sentimental and an ornamental value as well, a value which comes from the part they play in a beautiful landscape, either when growing together as in a forest, or when, as individual specimens, their attractive outlines are fully revealed. All who love trees should see to it that our native species are preserved wherever possible, and that areas of natural woodland near our cities and towns should be guarded well.

The value of the delightful and cooling shade of a tree in a hot summer day is not to be measured in dollars and cents. The contrast between a street having attractive shade trees and one without any is very great. Well planted home grounds, with trees and shrubs judiciously and pleasingly placed, how attractive they are!

There is great satisfaction in a well kept hedge, giving a trim but attractive boundary to the lawn or the garden, or screening unattractive objects beyond; and again, the homelike and softened effect of a vineclad house, how much we admire it!

In Canada the use of ornamental trees and shrubs is not at all general, although the abuse of them has been very great. In the country where the opportunities for beautifying the home grounds are abundant, very little is done, and the farmers' homes, in the great majority of cases, are most unattractive places indeed. Our cities, towns and villages are, in many cases, little better, except in limited areas, the unattractive dwelling houses being unrelieved by shade trees on the streets, or by ornamental trees and shrubs on the private grounds. All the native trees and shrubs have, in many places, disappeared, the natural beauty has gone, and instead there are houses with hard and ugly outlines.

In 1908, the Ottawa Horticultural Society offered to supply ornamental shrubs and vines free to residents on some of the

\*Synopsis of lecture before O.F.N. Club, January 25, 1916.

most unattractive streets in Ottawa, and to plant them as well. Circulars to this effect were sent to every resident, but the movement was not popular, the people did not wish the planting done, the main reason given being that if their places were made more attractive the assessment would be raised, and if the assessment were raised the rent would be raised. Whether their fears were well grounded or not we do not know. The shrubs and vines were planted, but planted about public buildings in Ottawa, not private residences. There are some well planted private places in Ottawa, but not nearly as many as there might be.

In 1909, a by-law was prepared by the Ottawa Horticultural Society and submitted to the City Hall, by which tree planting and tree mutilation were to be regulated through a Tree Inspector, under the City Engineer. The planting of certain kinds of trees was to be prohibited, the distance apart of the trees was to be limited, and there were many other good features of the proposed by-law. It was, however, not passed.

When will there be greater uniformity in the planting of shade trees on the streets of Ottawa? At present anyone plants what he pleases, and there may be a hundred kinds of trees on one street for all that is done to prevent it. Ottawa has much to learn from some of the prairie towns in this respect. There the city, not the individual, plants the trees, and plants a whole street with one or two kinds, with the result that instead of a hundred species, more or less, of trees of all ages, there is uniformity, with a much more pleasing effect.

As an example, take Clemow Avenue, where the uniformity of the avenue of elms is most pleasing, although later on they will be much too close for best effect, unless thinned. What an improvement this is over the planting on many of the streets of Ottawa!

A Civic Improvement League for Canada was recently organized, and no doubt, some day before long we shall have a branch in Ottawa. It can do good work by getting an improved by-law under which our trees shall be properly planted and cared for. Ottawa, as the capital of the Dominion, should be the most beautiful city in Canada, and some day it may be. Much has been done to make it attractive, but much remains to be done. The fact that it is situated where the climate is rather cold does not prevent the use of many attractive ornamental trees and shrubs, and few cities in America are so fortunate as to have in their vicinity such a collection of trees and shrubs as is to be found at the Experimental Farm, where their merits may be studied before planting is done in the city.



About 3,000 species and varieties of trees and shrubs may be grown at Ottawa.

For street planting, the Sugar Maple, (*Acer saccharum*), and the American Elm (*Ulmus americana*), are two of the best trees. The maple has not the graceful outlines of the elm, but as a shade tree is very desirable. It grows rapidly, does not split or break easily, and the foliage is handsome in summer and very attractive in autumn. It is not, as a rule, much affected by insects or disease.

The American elm is particularly suitable for wide streets and in front of public buildings, and has an advantage over the Sugar Maple in that it can be pruned up quite high, without making the tree less attractive, but rather improving its appearance; whereas in the case of the Sugar Maple it makes the tree much less attractive if it is pruned very high. The elm is, however, more subject to injurious insects than the maple, and the fall web worm often renders the tree very unsightly.

Among the trees which might be used as a street tree more than it is, is the Red Oak (*Quercus rubra*). This is a rapid growing tree, not a slow grower, as many suppose. The glossy foliage is quite attractive in summer, and it takes on very pleasing shades in autumn. The foliage remains on the trees longer than that the Sugar Maple and much longer than that the elm.

Some of the best ornamental trees are among the native evergreens. The White Pine (*Pinus Strobus*), is the most desirable pine for ornamental purposes. It is more graceful than most other pines, and the foliage is a pleasing shade of green. The Yellow or Bull Pine (*Pinus Ponderosa*), of British Columbia, is a very stately species, succeeding well at Ottawa.

Douglas Fir (*Pseudotsuga Douglasii*), the big tree of British Columbia, after twenty-five years' growth at Ottawa, promises to continue to do well, and is a very attractive tree.

Englemann's Spruce (*Picea Englemanni*), a native of the Canadian Rocky Mountains and Selkirk Mountains, is a beautiful tree, and has thriven well at Ottawa. While not as blue in colour as the Blue Spruce (*Picea pungens*), it has softer foliage and is of a different shape. Those who have grown the Blue Spruce longest find that when the tree gets to be twenty-five or thirty, or perhaps more, years of age, the branches die at the bottom, even when the tree itself is in the open. This is due to the fact that the growth is stronger part way up than it is at the base, and the branches at the base eventually die. The Englemann's Spruce, on the other hand, remains broadest at the base.

The White Spruce (*Picea canadensis*), formerly *P. alba*, makes a fine ornamental tree, but, unfortunately, it has, in recent years, been badly affected with the Spruce Gail louse, which disfigures it very much. While young, or up to perhaps thirty years, the Norway Spruce (*Picea excelsa*), is one of the most attractive evergreens, and is a very rapid grower, but it gets ragged looking as it grows older.

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### THE FIRE AND THE MUSEUM AT OTTAWA.

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By HARLAN I. SMITH, Geological Survey, Ottawa.

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The Museum of the Geological Survey, Ottawa, is to Canada practically what the National Museum is to the United States and the British Museum to the United Kingdom. This museum has been greatly affected by the fire which, beginning about 9 p.m., February 3, 1916, destroyed the Dominion Parliament building, and caused the loss of several lives. Before 2 a.m., February 4, while the flames were still spreading, a member of the Cabinet was considering the use of the large auditorium in the Victoria Memorial Museum building as possibly a suitable place for the meetings of the House of Commons, and members of the Geological Survey were holding themselves in readiness to clear any of the other space necessary.

The Geological Survey occupied practically all the building except the three and a half floors in the east wing and an office which was used by the National Gallery. Each hall and wing is practically one hundred and twenty feet long by sixty feet wide.

About ten a.m., February 4th, the morning of the fire, the Survey staff was informed of the intended use of the building as a temporary home for the Dominion Parliament. The large auditorium with its gallery, which was only partially furnished and had been but little used for lectures, was immediately released from museum uses, and prepared by the Department of Public Works, so that the House of Commons was enabled to begin its session at 3 p.m. or in less than twenty hours after its deliberations had been disturbed by the fire. The throne used by the Governor-General in the privy council room, which was rescued from the fire, served for the Speaker of the House of Commons. A press gallery was built back of the Speaker.

The west hall was occupied by the tentative exhibit of minerals. This exhibit was packed and removed in six hours, or by 4 p.m., Friday, which was less than twenty hours after the fire began. The costly cases in which these minerals were exhibited had meanwhile been taken apart and placed in storage. Rooms for the members of the Senate were made here.

The west wing, which was being prepared for geological and mineralogical exhibits, was cleared before Monday noon. The Senate met at 8 p.m. on Tuesday in this new chamber, which had been vacated by the museum within seventy-five hours after it became known that the Senate would meet in the museum.

The east hall, with invertebrate palaeontological exhibits, similar in size to the other exhibition halls, contained thousands of small and delicate specimens. These were all carefully wrapped, packed and taken away. Forty hours after the beginning of the fire, all the museum specimens and cases had been moved from this part of the building, which was made into offices for the members of the House of Commons.

Of the east wing, containing tentative vertebrate palaeontological exhibits, three-quarters were cleared, and these exhibits were stored, with those of the other quarters, along the walls of the southern half of the hall. This clearing involved not only the moving of small exhibits in cases, but also of such heavy fragile specimens as the titanotherium and the skulls of dinosaurs and mammoths, yet it was all done within two hours after this notification, that is by noon, or in less than twenty hours from the time that the fire broke out.

The ethnological specimens were taken out of the tower hall, which was then fitted up and used before Friday noon as a newspaper library corresponding to the one where the fire originated.

Before noon, that is within less than two hours after notice, the tentative exhibit of Canadian archaeology, in seventeen cases, covering three-quarters of the west hall, was cleared of specimens and cases, while the tables upon which the cases stood were left for the use of the members of parliament. The specimens were transferred to sixty-eight trays and stored in the archaeological laboratory in the basement. Meanwhile the remaining quarter of the hall had been cleared of a tentative exhibit of entomology in four cases. In this hall a place for the press gallery staff to work, various offices for members of the Senate, and offices for the Hansard staff, which records the deliberations of the House, were made ready before Monday noon.

The exhibits in the permanent anthropological hall were left intact. Besides the exhibits the archaeological specimens in storage under the exhibition cases were also undisturbed. The ethnological exhibits which are of specimens from the Eskimo, the Indians of the north-west coast of America, and the Algonquian and Iroquoian Indians of the eastern woodlands, were undisturbed. The aisles in this hall, however, were used for storing furnishings and specimens from various other departments, and for office space for the ethnologists.

The zoological hall, similar in size to the others, was cleared by Sunday noon. This necessitated the taking apart of splendid large group cases, and the dismantling of groups of seals, mountain goat, mountain sheep, musk oxen, and various other exhibits, and the removal to storage in the aisles of the anthropological hall cases, containing exhibits of mammals, birds and reptiles. The space was divided into offices for the members of the House of Commons.

The offices on the second floor were promptly vacated with the exception of two, that of the curator and mineralogist and that of the vertebrate palaeontologist. The invertebrate palaeontological offices were moved to the third floor. The archaeological office was moved to smaller space in the entomological laboratory on the third floor, all specimens being taken to the laboratory. The known loss to archaeological specimens caused by the move from both office and tentative exhibition is negligible, the damage being less than one dollar. Work on monographs will be hampered for lack of space to spread out the material for study, but every specimen is still available, on permanent exhibition, in storage under the exhibits, or in the laboratory, where aisles allowing for the free passage of trays are maintained, though the storage reaches the ceiling in most of the remaining space. The ethnological office was moved into the south end of the anthropological exhibition hall, and the botanical office was moved into the botanical herbarium on the third floor. The library was not disturbed. The vacated rooms were at once occupied, chiefly by the Cabinet and other members of the House of Commons.

The offices, drafting room, workshops, and storage on the third floor, were mostly retained, but the little lecture hall was released. The lectures in course were postponed indefinitely. The zoological study material and the herbarium were undisturbed. The physical anthropological office was concentrated into about half its former space, and an ethnological storage room was vacated.

In the basement the workshops and laboratories were mostly

retained, as were the taxidermist department, the laboratory of vertebrate palaeontology, the photographic department, and half a hall devoted to the workshop of the National Gallery. Some work rooms were vacated, however, and the distribution offices, with their vast store of publications and maps, were moved to another part of the city.

Of about a hundred and forty members of the Survey staff, over seventy moved about a mile to a series of buildings recently taken over by the Government on the north side of Wellington Street, between Bank and Kent streets, while some sixty of those most intimately connected with museum work retained room in the Victoria Memorial Museum building. In this work of moving, militia motor lorries were pressed into service, as well as sleighs and other transports, and the office furnishings and working specimens went out at the rate of sixty loads in one day.

His Royal Highness, the Governor-General, inspected the House of Commons and the other parts of the Victoria Memorial Museum building turned over for the use of Parliament, at eleven a.m. on Monday, less than eighty-seven hours after the fire began, or less than seventy-four hours after the museum authorities were notified of need for the space.

The Museum retains intact only one and a quarter of the exhibition halls, namely, the anthropological hall and part of the hall of vertebrate palaeontology.

A sample museum, by means of which to advance museum interests in the Dominion, has been begun in the anthropological hall. The archaeological and ethnological exhibits are intact, some of the best zoological exhibition cases of birds, reptiles and insects, have been placed in the wider aisles where they may be viewed; while mounted mammals and skeletons of various animals have also been placed in the aisles and on top of the cases.

On the whole, the scientific work of the museum may go on practically unhampered. The lecture work is being carried on in other auditoriums. The exhibitions eventually may be facilitated by the present apparent set back, as the museum staff is undiscouraged, and the members of parliament, who are now in daily proximity to the exhibits, and constantly meeting museum workers, may become so interested that they will provide future facilities for museum work in the Victoria Memorial Museum building, or in a building even better adapted for museum purposes. Besides this they may carry home to all parts of the Dominion inspiration to establish useful museums and to improve those already in existence.

## ENCOURAGE THE BIRDS—WHAT BROCKVILLE IS DOING.

An interesting movement is now under way in Brockville, Ont., for the protection and encouragement of birds. Definite plans, under the co-operation of the various educational institutions, were decided upon at a large meeting held on March 24, 1916, on which occasion Dr. C. Gordon Hewitt, Dominion Entomologist, of Ottawa, gave an illustrated address.

The movement promises much success, and the committee in charge will, it is hoped, reach their goal, namely, the making of Brockville a city of song birds. Every Brockville boy is invited to make a bird box to exhibit at an exhibition of bird houses to be held on April 28 and 29. Special prizes will be awarded for:—

1. The best house from the standpoint of workmanship.
2. The best bird house.
3. The most artistic bird house.
4. The most unique idea in a bird house.
5. The first house to have a bird build in it.
6. The boy taking the best picture of a bird house after it is placed for the season.
7. The best picture of a bird on or near a bird house made this year, both bird and house to appear in the picture.
8. The best picture of a song bird in Brockville.

The committee in charge of the campaign, namely, Mr. W. A. Remmer, Principal of Public Schools; Mr. G. E. Cox, Instructor of Manual Training, and Mr. W. H. Wood, Secretary Community Work, are to be congratulated on the successful commencement of their undertaking. It is hoped that the boys of Brockville will do their part, and thus lead the way for similar campaigns in other cities. The subject of bird encouragement is one which is gradually receiving more attention from the general public. Outside of the economic value of many of our wild birds, their very presence in our cities is pleasing to most of us, and in inviting them to stay with us, the popular form of invitation is the placing of suitable nesting boxes in our trees.

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