

GRASSLANDS OF ONTARIO AND SURROUNDING AREAS

K.G.A. Hamilton, Biosystematics Research Centre, Agriculture Canada,
Ottawa, Ontario K1A 0C6

Investigations of the leafhopper fauna of eastern grasslands have now progressed to the point where a preliminary report seems due.

Sampling has been done throughout southern Ontario, Michigan and northern New York state. I have contacted various individuals and institutions in Ontario and Michigan in an effort to discover as many native grassland sites as possible. Notable contributions were received from Paul Catling (BRC), Dan Brunton (Ottawa), and John Morton (University of Waterloo). Sites in Michigan investigated included those listed in Public Prairies of Michigan by K.A. Chapman and R.J. Pleznac (private, 1982), available from the Michiana Prairie Society, P.O. Box 667, Kalamazoo MI 49005. All but 6 of the 64 sites with potentially interesting records were sampled by me in the last 3 years. The sites are shown on map 1, and detailed maps are given for some of the more obscure sites.

Approximately 100 grassland leafhopper species are known from western Canada, and 27 of these are now known from Ontario. In addition, 8 southern species find their northern limits in grasslands of Ontario or Michigan rather than on the Canadian prairies. Other records from these grasslands are 3 leafhopper species apparently endemic to northeastern USA and adjacent Canada, and 3 each of Cercopidae and Caliscelidae with similarly interesting distributions. These have been compared to Homoptera sampled from serpentine barren grassland sites in Maryland (Soldiers' Delight) and Pennsylvania (Goat Hill F.R.).

Paraphlepsius turpiculus (Ball) and Limotettix bisoni Knull, common prairie species that occur in Ontario have been omitted from the list as they are also common on Juncus in bogs in northern Michigan. Limotettix parallelus Van Duzee has been collected from a bog at Puslinch, Ont. and likewise may not be exclusively a grassland species.

Athysanella longicauda Beirne has been collected at various sites along the Ottawa River and from the university arboretum in Madison, Wisconsin. It is also found in grassland sites near Lake Ontario and Lake Michigan and appears to be an eastern endemic. Prosapia ignipectus (Fitch) occurs on little bluestem (Andropogon scoparius) stands in the New England states and also in isolated localities around Lake Huron. Philaenarcys killa Hamilton, formerly thought to be a Great Lakes endemic, is now known to be a common prairie species throughout southern Michigan southwest to Oklahoma.

List of grassland leafhoppers and spittlebugs

Endemic:

Cercopidae - Prosapia ignipectus (Fitch)

Cicadellidae - Athysanella longicauda Beirne, Notus and Psammotettix n. spp.

Southern species:

Caliscelidae - Bruchomorpha pallidipes Stal

Cicadellidae - Balclutha abdominalis (Van Duzee), Chlorotettix fallax Sanders & DeLong, Chlorotettix spatulatus Osborn & Ball, Graminella oquaka DeLong, Graminella pallidula (Osborn), Hecalus flavidus (Signoret), Hecalus grandis (Shaw), Laevicephalus peronatus Ross & Hamilton

9. Ipperwash Beach, Ont. South of Lampman Drive (Map 6) an area of undisturbed sand ridges among woods with big bluestem (Andropogon Gerardi), little bluestem, switch grass (Panicum virgatum) and Calamovilfa longifolia. A rich mixture of northern and western species occur here, including 4 prairie species known in Canada only from this site: Fitchiella robertsoni, Flexamia prairiana from big bluestem, Philaenarcys killa from little bluestem and nymphs of an unidentified Negiosiana sp. Other prairie species: Flexamia delongi and Paraphlepsius lobatus from little bluestem, also Balclutha neglecta, Limotettix parallelus, Paraphlepsius umbrosus and Texanonus arctostaphylae; southern species: Bruchomorpha dorsata and Chlorotettix spatulatus; endemic species: Prosapia ignipectus from little bluestem.

10. Pinery Provincial Park, Grand Bend, Ont. Similar to Ipperwash, but with extensive oak woods. Prairie species: Paraphlepsius lobatus; southern species: Chlorotettix spatulatus.

11. Sauble Beach North, Ont. Open sand dunes with switchgrass cover interspersed with sand cherry (Prunus pumila) and heartleaf willow (Salix cordata); bearberry (Arctostaphylos uva-ursi), Juncus and grasses in low area behind dunes sampled. Prairie species: Aceratagallia siccifolius, Laevicephalus unicoloratus, Laevicephalus sp. (unidentified female new to Canadian fauna) and Paraphlepsius umbrosus.

12. Oliphant, Ont. Small sand ridge with little bluestem cover in cedar woods on N side of road providing access to N end of beach. Southern species: Chlorotettix spatulatus.

13. Red Bay, 2 km SE Howdenvale, Ont. on SW corner of junction of Huron Rd. with access road to Petrel Point. Sandy area overgrown with "pure" stand of little bluestem and Juniperus horizontalis in cedar wood. Prairie species: Flexamia delongi; southern species: Chlorotettix spatulatus.

14. St. Jean Point Nature Preserve, 1 km N Howdenvale, Ont. Coastal heath mainly overgrown with little bluestem, bearberry and horizontal juniper. Prairie species: Flexamia delongi, Texanonus arctostaphylae and Texanonus marmor, the last on Juniperus horizontalis.

15. Pike Bay, Ont. Sand-overridden sphagnum fen at bottom of bay with little bluestem growing amongst sedges, cottongrass and shrubby plants. Prairie species: Flexamia delongi and Paraphlepsius lobatus; southern species: Chlorotettix spatulatus.

16. Prairie Point, 3 km S Cape Croker, Ont. Grassy flats on north side of isthmus. Prairie species: Aceratagallia siccifolius.

17. Stokes Bay, Ont. Stony ground with mixed forbs and grasses at neds of road on either side of bay; S side dominated by little bluestem, N side with switch grass. Prairie species: Flexamia delongi and Paraphlepsius lobatus.

18. Pleasant Harbour, 7 km SW Miller Lake, Ont. Sandy beachfront covered with little bluestem and horizontal juniper. Prairie species: Flexamia delongi.

19. 1 km E Pine Tree Harbour (Map 7), 4 km WSW Miller Lake, Ont. Extensive alvar amongst larch and cedar clumps; flora similar to 14. Prairie species: Flexamia delongi and Paraphlepsius lobatus.

20. 7 km NE Miller Lake, Ont. Small alvar with large horizontal juniper patches and low bunchgrasses in birch-cedar woods. Prairie species: Aceratagallia siccifolius, Limotettix parallelus and Texanonus marmor.

21. Cabot Head, 20 km NE Miller Lake, Ont. Natural meadow at edge of cedar wood near shore, mainly Poa? with switch grass clumps. This is the only Canadian site for the prairie species Graminella mohri, on switch grass. The nearest U.S. record is no. 47. Other prairie species: Texanonus arctostaphylae; also found in eastern Canada at 14 and SE Manitoulin I (understory site).

Prairie species:

Caliscelidae - Aphelonema rosa Metcalf, Bruchomorpha jocosa Stal
Cercopidae - Philaenarcys killa Hamilton, Lepyronia gibbosa Ball
Cicadellidae - Aceratagallia siccifolius (Uhler), Aflexia rubranura (DeLong), Auridius n. sp., Balclutha neglecta (DeLong & Davidson), Commellus sexvittatus (Van Duzee), Dorydiella kansana Beamer, Flexamia delongi Ross & Cooley, Flexamia inflata (Osborn & Ball), Flexamia prairiana DeLong, Graminella mohri DeLong, Laevicephalus minimus (Osborn & Ball), Laevicephalus unicoloratus (Gillette & Baker), Laevicephalus sp., Limotettix parallelus (Van Duzee), Limotettix n. sp., Macropsis quadrimaculata Breakey, Mocuellus americanus Emeljanov, Negosiana sp., Neocoelidia tumidifrons (Gillette & Baker), Paraphlepsius lobatus (Osborn), Paraphlepsius umbrosus (Sanders & DeLong), Polyamia caperata (Ball), Polyamia compacta (Osborn & Ball), Psammotettix knullae Greene, Texananus marmor (Sanders & DeLong), Texananus arctostaphylae (Ball), Xerophloea peltata (Uhler).

Known sites

1. Picnic site, 5 km E Madawaska, Ont. Low sandhills overgrown with aspen; ridges with grasses and mixed forbs. This site is the easternmost record for Neocoelidia tumidifrons, which has also been collected at the Wainfleet bog near Welland, Ont. The Madawaska site is one of 3 eastern sites for an undescribed species of Auridius otherwise known only from the aspen parkland of Alberta.

2. Ramsay alvar (Map 2), 3 km N Almonte, Ont. on Ramsay Concession Road 12 NW of Highway 44. Mostly Poa compressa and Panicum philadelphicum, but with extensive patches of Sporobolus heterolepis and S. vaginiflorus; a central lower area with tall, mixed grasses and Juncus dudleyi supports Dorycara ?platyrhyncha (Osborn). This is the only site north of Illinois for Laevicephalus peronatus. Prairie species: Texananus arctostaphylae; endemic species: Athysanella longicauda from Sporobolus vaginiflorus. A similar alvar 7 km SW Arnprior, Ont. (Cut Bank alvar) is smaller and has no interesting leafhopper species.

3. 2 km NW Harrisville, N.Y. Low sandhills overgrown with pine. Prairie species: Aceratagallia siccifolius.

4. 5 km E Camden East (Map 3), Ont. Similar to Ramsay alvar, but with different grasses and rushes in seep area near road. Prairie species: Aceratagallia siccifolius, and Flexamia inflata from Juncus dudleyi.

5. Point Anne (Map 4), 4 km E Belleville, Ont. Mainly Poa compressa and Panicum philadelphicum among red cedar thickets, but near marshy area mixed with side-oats grama, Bouteloua curtipendula and Eleocharis elliptica. This is the only site north of Ohio for Laevicephalus minimus, a side-oats specialist. Other prairie species: Aceratagallia siccifolius, Balclutha neglecta and Flexamia inflata from Eleocharis elliptica.

6. 5 km E Lake Dalrymple (Map 5), Ont. Extensive, lightly grazed alvar, mostly Poa compressa and wire grass, Danthonia spicata with patches of Panicum philadelphicum; mixed grasses and sedges in wet, unfenced area 3.3 km E of Lake Dalrymple Road on unnamed road beyond end of pavement probably best collecting area. This site needs reinvestigation.

7. 3 km E Sunnidale Corners, Ont. Poa and little bluestem along highway. Prairie species: Laevicephalus unicoloratus from little bluestem.

8. Squaw Point, 4 km W Leith, Ont. Small alvar along highway; sample taken on eastern side, which is now destroyed for housing lots; formerly a little bluestem meadow with Eleocharis elliptica and other sedges in seep area. Prairie species: Dorydiella kansana and Limotettix parallelus from sedges.

22. Johnston Harbour, 17 km SE Tobermory, Ont. Coastal heath similar to 14, but less open. Prairie species: Flexamia delongi, Paraphlepsius lobatus and Texananus marmor.

23. Borden Road, 15 km SE Tobermory, Ont. Similar to 22. Prairie species: Flexamia delongi and Paraphlepsius lobatus.

24. 14 km SE Tobermory, Ont. Small alvar on south side of main highway with fine grasses among horizontal juniper clumps. Prairie species: Texananus marmor.

25. Dorcas Bay Conservation Area, 8 km SE Tobermory, Ont. Sphagnum bog behind sandbar; little bluestem and other grasses together with horizontal juniper near woods. This is the only Canadian site for the prairie species Polyamia compacta. Other prairie species: Flexamia delongi, Paraphlepsius lobatus and Texananus marmor.

26. 1 km N Baptiste Harbour, 5 km S Tobermory, Ont. Deschampsia caespitosa growing in muddy rill in small alvar where other native grasses and horizontal juniper occupy the higher ground. Prairie species: Texananus marmor.

27. Cape Hurd, 6 km SW Tobermory, Ont. Coastal heath similar to 22, but with Salix candida clumps. Prairie species: Flexamia delongi.

28. South Bay, 19 km SW Wikwemikong (Map 8), Ont. Small alvar 2 km NE of fork in road; rocky areas covered with Eleocharis elliptica - Poa compressa mixture, separated by Sporobolus heterolepis growing in cracks. This is the most northeasterly record of Balclutha neglecta. Other prairie species: Aflexia rubranura on Sporobolus heterolepis (otherwise known only from 5 localities: southern Manitoba, eastern South Dakota, Chicago Illinois and the next 2 sites) and Limotettix parallelus.

29. Goat I, 1 km E Little Current, Ont. Relict prairie growing on south-facing slope S of highway. Prairie species: Aceratagallia siccifolius, Aflexia rubranura, Balclutha neglecta, Flexamia delongi, Laevicephalus unicoloratus, Mocuellus americanus, Paraphlepsius lobatus and Texananus arctostaphylae.

30. Great La Cloche I Nature Preserve, 5 km E Little Current, Ont. near gate. Low alvar along south shore with extensive beds of Eleocharis elliptica and Deschampsia caespitosa between small raised areas crowned with prairie grasses and cedar clumps. This is the most northerly record for the gulf-coast Hecalus grandis; the next closest record is Chicago. Other prairie species: Aflexia rubranura, Flexamia delongi, Laevicephalus unicoloratus, Mocuellus americanus and Neocoelidia tumidifrons.

31. 7 km NE Evansville, Ont. Oak savannah along Hwy. 540; grazed under-story mostly Poa compressa with large horizontal juniper patches. This is the only site on Manitoulin I where Texananus marmor was found. Other prairie species: Aceratagallia siccifolius.

32. Misery Point (Map 9), 10 km SE Silver Water, Ont. This alvar has not been investigated for Homoptera, and the access road is very rough.

33. Burnt I, 9 km SW Silver Water, Ont. Coastal heath as 14. Prairie species: Flexamia delongi and Paraphlepsius lobatus.

34. Suicide Point, Vidal Bay, 10 km E Meldrum Bay, Ont. This alvar, dominated by Sporobolus heterolepis, has not been investigated for Homoptera since the only access is by water.

35. S of Mississagi Lighthouse, 12 km W Meldrum Bay, Ont. Rocky shore with extensive growth of horizontal juniper and mixed grasses including little bluestem. This is the most northerly site for Graminella nigrifrons (Forbes), a pest species that enters Canada in southernmost Ontario. Prairie species: Flexamia delongi.

36. Maxton Plains, 10 km NE Drummond, Drummond I, Mich. Alvar similar to 28, but with little bluestem meadow bordered by sphagnum bog to S, and with sand cherry, Potentilla, horizontal juniper and other shrubs towards aspen

grove at W end. Extensive beds of Sporobolus heterolepis completely dry in July. This is the only site for an undescribed species of Notus (a transarctic genus) and one of 2 sites for an undescribed species of Psammotettix (the other is 40). Prairie species: Aceratagallia siccifolius, Auridius n. sp., Flexamia delongi, Limotettix parallelus, Paraphlepsius lobatus and Texananus arctostaphylae.

37. DeTour Beach, 7 km W DeTou, Mich. Natural clearing among larch, pine and cedar behind low dunes with little bluestem, Calamovilfa longifolia, horizontal juniper and bearberry. Prairie species: Flexamia delongi.

38. 0.5 km N junction of old Hwy. 2 (which is a power line cut E of that point) and Cut River Road (Map 10), 5 km E Epoufette Bay, Mich. Sandy clearing in forest dominated by wire grass and Deschampsia flexuosa, with extensive patches of bearberry, horizontal juniper, Carex ?pennsylvanica and Poa pratensis growing with Agropyron. This is the northeasternmost locality for Commellus sexvittatus; the closest site is no. 48. Other prairie species: Aceratagallia siccifolius, Auridius n. sp. on Poa pratensis, Balclutha neglecta and Texananus arctostaphylae.

39. Manistique, Mich. Dunes W of town overgrown with little bluestem and Calamovilfa longifolia. Site needing reinvestigation.

40. Grand Sable Lake, 5 km W Grand Marais, Mich. High dunes with sparse cover of dune grass (Ammophila) interspersed with little bluestem, Artemisia and other forbs on S-facing slopes; mixed grasses, horizontal juniper and many forbs in low places. This is the second locality for the new Psammotettix sp. of no. 36; a sample from sand dunes in Carcross, Yukon Territories represents a similar or possibly the same species.

41. 10 km N Huron Beach, Mich. Low dunes with dune grass, willows and sand cherry cover; open areas behind dunes as in 37. Prairie species: Macropsis quadrimaculata on sand cherry.

42. 4 km W of junction of Hwy. 23 and county road 638 (Map 11), 11 km W Presque Isle, Mich. Alvar near power line cut, with big and little bluestem, Poa compressa and other grasses; seep areas with Eleocharis elliptica and other rushes. This is the northernmost site for Dorydiella kansana, Limotettix n. sp., Polyamia caperata and Prosapia ignipectus; the Limotettix on Eleocharis elliptica is also known from Missouri, Oklahoma and coastal Texas. Prairie species: Flexamia delongi, Laevicephalus unicoloratus, Limotettix parallelus, Paraphlepsius lobatus and Texananus arctostaphylae.

43. 5 km N Presque Isle, Mich. near Lighthouse Point. Sandspit overgrown with dune grass, sand cherry and willows. Low areas behind dunes with rushes, big and little bluestem and switch grass. The northernmost record for Philaenarcys killa, here on big and little bluestem; other prairie species: Flexamia delongi, Macropsis quadrimaculata, Paraphlepsius lobatus and Texananus arctostaphylae.

44. Ocqueoc River at Hwy. 68, 4 km NW Millersburg, Mich. Pure stand of little bluestem on W bank of river near road. Prairie species: Flexamia delongi, Laevicephalus unicoloratus and Paraphlepsius lobatus.

45. 1 km N Clear Lake State Park, 17 km N Atlanta, Mich. Heath with scattered jack pines; ground cover of reindeer moss with wire grass, little bluestem, blueberry, sweet fern and sand cherry. Prairie species: Bruchomorpha dorsata and Macropsis quadrimaculata.

46. "Dune Climb", Sleeping Bear Dunes National Lakeshore, 7 km S Glen Haven, Mich. Lee of large dunes; sandy flats dominantly Calamovilfa longifolia with patches of little bluestem, Panicum, sandcherry, willows and common juniper. Prairie species: Balclutha neglecta and Laevicephalus unicoloratus.

47. 14 km S Empire, Mich. Natural clearing in oak-pine woods; ground cover mostly Carex ?pennsylvanica and introduced grasses, with tall clumps of switch grass. Prairie species: Graminella mohri on switch grass.

48. Honor, Mich. South-facing slope of high dunes with patch of Leptoloma cognatum interspersed with some Aristida, mostly Poa compressa and Agropyron in surrounding areas. Prairie species: Commellus sexvittatus, Philaenarcys killa and Psammotettix knullae. The last of these has also been taken near Moosonee on the shores of James Bay.

49. 5 km W Fife Lake, Mich. Sand hills with pine cover; open areas mostly little bluestem and bracken with patches of Panicum. Prairie species: Laevicephalus unicoloratus.

50. Sippy Flats, 0.6 km E Hwy. 37 on County B-96, 2 km S Lilley, Mich. Open pine scrub - heath with weedy understory of wire grass, bracken, sweet fern, oswego tea and many other forbs. Prairie species: Bruchomorpha jocosa.

51. 1 km W Idlewild, Mich. Sandy clearing at edge of oak woods; isolated clumps of big and little bluestem, Carex pennsylvanica, sweet fern and forbs. Prairie species: Aceratagallia siccifolius, Bruchomorpha dorsata, Flexamia delongi, Laevicephalus unicoloratus, Philaenarcys killa.

52. 4 km W Oxbow, Mich. Natural prairie in sparse pine woodland dominated by Carex pennsylvanica, Koeleria macrantha and Panicum. This and the next site are the northernmost records of Bruchomorpha pallidipes, previously known as far north as Maryland, and the easternmost records of Auridius helvus, previously known from Alberta to Wyoming. Other prairie species: Aceratagallia siccifolius, Balclutha neglecta, Bruchomorpha dorsata, Bruchomorpha jocosa, Flexamia delongi, Laevicephalus unicoloratus, Philaenarcys killa.

53. 9 km ESE Newaygo, Mich. Regenerating prairie amidst pine plantations; mostly Carex pennsylvanica with little bluestem, Koeleria macrantha and Panicum. This is 1 of 3 sites east of Chicago where Lepyronia gibbosa occurs; here it feeds on Lespedeza sp. Other specimens are from just W of Boston, Massachusetts (1890s specimens in the USNM collection). Other prairie species: Aceratagallia siccifolius, Auridius helvus, Bruchomorpha jocosa, Flexamia delongi, Laevicephalus unicoloratus, Philaenarcys killa. Southern species: Bruchomorpha pallidipes.

54. Mount Hope Cemetary, Middleville, Mich. Natural big bluestem prairie on hillsides to E of cemetary. The northernmost site in eastern North America for Stirellus bicolor (Van Duzee) and Acinopterus. Prairie species: Laevicephalus unicoloratus.

55. Oscoda, Mich. Low dunes with dune and switch grass, willows and sand cherry. Prairie species: Macropsis quadrimaculata.

56. 3 km N Harbor Beach, Mich. Muddy shore edged with rushes; landwards with rank grasses amongst Polygonum thickets. Southern species: Graminella pallidula.

57. Ojibway Prairie Provincial Nature Reserve, Windsor, Ont. Tallgrass prairie along Titcombe Road, S of road with extensive Spartina beds and many forbs, N of road dry prairie dominated by big and little bluestem with switch grass. This is the northernmost site for Chlorotettix fallax and Hecalus flavidus, and the northeasternmost site for Xerophloea peltata. Other prairie species: Aphelonema rosa, Balclutha neglecta, Dorydiella floridana, Flexamia prairiana and Laevicephalus unicoloratus; other southern species: Balclutha abdominalis, Chlorotettix spatulatus, Graminella pallidula and Graminella oquaka.

58. Windsor, Ont. W of Ojibway Park. Switchgrass stand and seep area W of this. Prairie species: Flexamia inflata; southern species: Graminella pallidula.

59. Walpole Island, Ont., 2.5 km N of main road on second road E of St. Clair River. Tallgrass prairie without bluestem grasses. Prairie species: Aphelonema rosa; southern species: Balclutha abdominalis and Graminella oquaka. The endemic species Prosapia ignipectus was taken in an adjacent wooded site.

60. St. Clair National Wildlife Refuge, 12 km SW Grande Pointe, Ont. Rank grasses along roadside and dike. Prairie species: Aphelonema rosa; southern species: Balclutha abdominalis.

61. Port Bruce, Ont. A sandy site with switchgrass. Southern species: Graminella pallidula.

62. Long Point, Ont. Sand ridges with Agrostis and rushes in wet areas. Prairie species: Balclutha neglecta and Limotettix parallelus.

63. Presque Isle, N of Erie, Pa. This sandbar site with its many grass and rush species was studied in 1923 by DeLong (Ann. ent. Soc. Am. 16:363-373) who reported the following southern species: Chlorotettix spatulatus, Dorydiella floridana, Graminella mohri (type locality) and Graminella pallidula. The second of these, here feeding on Scleria verticillata, probably actually represents the prairie species, D. kansana which has been taken at no. 57 and Blenheim in southern Ontario. The site deserves reinvestigation.

64. Queenston, Ont. This site is not known to me, but is probably a sandy coastal site with switchgrass. Southern species: Graminella pallidula.





