\* V Habenaria psycodes (L.) Sw. Poa annua L. " compressa L. Malaxis unifolia Michx. Spiranthes Romanzoffiana Cham. & ,, palustris L. ,, pratensis L. Schlecht. Setaria lutescens (Weigel.) Hubb. ARACEAE Setaria viridis (L.) Beauv. Spartina pectinata Bosc. Acorus Calamus L. Trisetum spicatum (L.) Richter Arisaema atrorubens (Ait.) Blume forma zebrinum (Sims) Fernald Zizania palustris L. \* V Arisaema triphyllum (L.) Schott. ORCHIDACEAE \* V Calla palustris L. Corallorrhiza maculata Raf. Symplocarpus foetidus (L.) Salisb. Cypripedium acaule L. Турнаселе Goodyera repens (L.) R. Br. Habenaria orbiculata (Pursh) Goldie Typha latifolia L.

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# ADDITIONS TO THE KNOWN RANGE OF SOME AMPHIBIANS AND REPTILES IN SASKATCHEWAN

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Collections and reports obtained during studies of the reptiles and amphibians of the Prairie Provinces for the National Museum of Canada in 1959-1963 have provided new information on the distribution of many species. As the comprehensive report planned for this area will be delayed until further field studies have been completed, some of the more noteworthy distribution records are recorded here. New records for seven species, Ambystoma tigrinum, Scaphiopus bombifrons, Rana sylvatica, Chelydra s. serpentina, Chrysemys picta belli, Thannophis elegans vagrans, and Crotalus v. viridis, in Saskatchewan are reported. For the first three species only peripheral range records are considered, but due to the paucity of localities for the others, all records are cited. Possible limiting factors for some of these species in Saskatchewan are discussed, and observations on time of breeding and egg laying are included when available. It is hoped that publication of this information will encourage the reporting of additional observations from Saskatchewan, either by publication or direct communication with the writer.

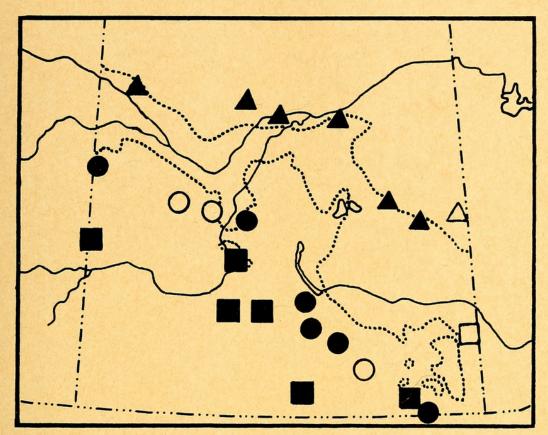


FIGURE 1. Outline map of southern Saskatchewan showing location of records given in the text for Ambystoma tigrinum (triangles), Scaphiopus bombifrons (squares), and Rana sylvatica (circles). Museum specimens are shown by solid symbols; reports, sight records and auditory records by hollow symbols. The dotted lines are the predominantly boreal forest—forest and grassland (aspen parkland) division (top dotted line) and the transition—grassland division (bottom dotted line) according to Rowe, 1959. In some cases a symbol marks the location of more than one record.

The following abbreviations are used for museum specimens: NMC, National Museum of Canada; SMNH, Saskatchewan Museum of Natural History; US, University of Saskatchewan.

Ambystoma tigrinum, Tiger Salamander

As all the records reported here are based on collections of larvae, and therefore are unsuitable for subspecies allocation, consideration of the problem of the distribution of the two races of A. tigrinum in Saskatchewan is deferred until a later paper when additional material is available. Cook (1960) reported the northern limit of the Tiger Salamander as Prince Albert, in the central part of the province. Subsequent collecting has yielded northern localities to the east and west of Prince Albert. The approximate northern limit is delimited by the following collections, arranged from west to east: 1.9 miles northwest on Hwy. 26 of Cleeves, July 2, 1962 (NMC 6197); 0.7 mi. N. on Hwy. 55 of Polwarth, July 7, 1962 (NMC 6253); Prince Albert, June 22, 1959 (NMC 4070) July 25, 1959 (NMC 4081); Gronlid, July 16, 1962 (NMC 6351); Lintlaw, July 12, 1962 (NMC 6329); 3.7 mi. N. on Hwy. 9 of Canora, July 12, 1962 (NMC 6320). These localities are shown in Figure 1. Also shown is a sight record of larvae and adults provided by local farmers approximately one mile east of Arran near the Saskatchewan-Manitoba border July 18, 1962.

At its northern limit, A. tigrinum reaches, but does not penetrate, the southern edge of the continuous coniferous boreal forest. The southern limit of the predominantly coniferous forest area according to Rowe (1959) is shown in Figure 1. All A. tigrinum collections listed above were taken from ponds and dugouts in aspen parkland (boreal-grassland

transition of Rowe, 1959) habitat. The slight penetrations north of Rowe's line are due to the presence at these localities of aspen parkland areas which are continuous with those to the south. Field work in adjacent coniferous forest has failed to reveal salamanders. In Saskatchewan, the species is common to abundant throughout the aspen parkland and grassland zones. Some factor in the coniferous boreal forest habitat, rather than temperature, seems to prevent the spread of this species farther north. This may be unsuitable soil conditions for the burrowing adults or a lack of suitable breeding ponds.

Little is known about the breeding time of this species in western Canada. Only two collections of eggs have been taken: 3 miles east of Zealandia, May 9, 1961 (NMC 5242) and Pike Lake, May 6, 1962 (NMC 5995). The first locality was a dugout pond in which the eggs had been laid in 12 to 14 inches of water and were attached to grass stems 3 to 4 inches below the surface. The eggs were laid singly or in rows of up to 23 along a stem. The rows were not continuous but had gaps separating them into groups of 3 or 4 and single eggs. The second locality was a shallow pond which varied from one to two feet in depth. Here the eggs were also in rows along plant stems, one group of five eggs and another of two. These were well advanced with the embryos occasionally twitching.

#### Scaphiopus bombifrons, Plains Spadefoot

Logier and Toner (1961) presented a map of the known distribution of this species in Saskatchewan in which the range limit was delimited by Alsask, Elbow, Bengough and Roche Percée. Three new collections partially fill the gap between the second and third localities. Single specimens were taken along Highway 1 east of Moose Jaw after a heavy rain the night of May 21-22, 1961: 1.5 miles east of Uren (turnoff) (NMC 5273); 0.2 miles east of Mortlach (turnoff) (NMC 5274); 4.9 miles west of Caron (turnoff (NMC 5275) (Figure 1).

All Saskatchewan specimens obtained so far are well within the grassland region of Rowe (1959). However, in Manitoba the species has twice been found in grassland areas within the aspen parkland (Cook and Hatch, 1964) and on August 23, 1964, Dr. A. W. F. Banfield identified a DOR specimen seen on Highway 1, 4 miles west of the Saskatchewan-Manitoba border (see Figure

1) as this species (PC: A. W. F. Banfield, 23 October 1964). Additional populations will likely be discovered in southeastern Saskatchewan.

The first definite breeding date for the Spadefoot in Saskatchewan was obtained June 1, 1962, 10.6 miles northwest on Hwy. 39 of North Portal, when a chorus estimated to be in the hundreds was heard. Males were calling from partially flooded fields and ditches, and several pairs in amplexus were found. Spadefoots were heard almost continuously that evening between Roche Percée and North Portal. Interestingly, one or two Boreal Chorus Frogs, Pseudacris triseriata maculata, were the only other anurans heard among this otherwise exclusively Scapbiopus chorus. The following night large numbers of Scaphiopus were again calling in the same areas. An auditory survey north of Roche Percée on the two evenings revealed few localities for Spadefoots. Distant small choruses were head 4½ and 9 miles northwest of Roche Percée, 2 miles east of Estevan and 4½ miles northwest of Estevan. The reasons for this contrast in abundance of S. bombifrons north and south of Roche Percé are not certain. The Souris River flows through the town and the land south of it is at a slightly lower elevation. During this period, standing water was present nearly continuously along the roadside edges of fields from Roche Percée to North Portal in the area of intense Spadefoot calling. To the north there was less evidence of temporary ponds. Whether these contrasts were due to differential rainfall received just prior to the observation periods or due to actual differences in soil and drainage is unknown. If lesser amounts of rain were received north of Roche Percée, this would acount for the fewer Scapbiopus heard there. However, if the soils or drainage are different, there may be a real difference in the availability of breeding sites and the number of Scaphiopus produced.

#### Rana sylvatica, Wood Frog

Logier and Toner (1961) cite only one record in the southern part of Saskatchewan for the Wood Frog, Indian Head. Collecting during the spring breeding period of this frog has revealed its approximate southern limit. These records form a northwest-southeast line from Macklin to North Portal, and are listed as follows (where specimens have been collected their catalogue number

is cited; other coords are auditory): Macklin, May 9, 1962 (NMC 6001); 3.1 miles east of Evesham, May 10, 1962 (NMC 6002); 8.4 miles south on Hwy. 4 of Biggar, May 14, 1962; 12.6 miles south on Hwy. 4 of Biggar, May 14, 1962; Laura, April 30, 1961, May 8, 1961; 0.4 miles north on Hwy. 11 of Hanley, June 4, 1959 (NMC 3998); 1 mile south on Hwy. 11 of Hanley, June 4, 1959 (NMC 3999); 1.8 miles west and 15.2 miles north of Belle Plaine, May 18, 1961 (NMC 5262): 7.4 miles east of Briercrest, June 22, 1961 (NMC 5416); 2.5 miles east on Hwy. 39 of Rouleau, May 12, 1961 (NMC 5250); 4 miles north and 0.9 miles northwest on Hwy. 6 of Milestone, April 22, 1961 (NMC 5221), April 23, 1961 (NMC 5225); Weyburn, May 18, 1961; 2.2 miles west on Hwy. 39 of North Portal, May 13, 1961 (NMC 5254). These records are shown by nine symbols in Figure 1. There is an old collection (NMC 55) labeled "Moose Jaw", "June 20, 1896". The writer has searched for this species at Moose Jaw without success and it is possible that the specimen was actually taken some miles north within the presently known range and labeled as the nearest town, a common practice of the time.

The limiting factor for Rana sylvatica at the southern edge of its range in Saskatchewan is the presence of the prairie grassland. This frog is abundant in the aspen parkland and boreal forest to the north, but does not occur more than a few miles south of the last more or less continuous clumps of aspen woods. Its typical habitat at its southern limit is relatively small, usually temporary, depression ponds which are at least partly surrounded by bushes and often a few aspens. Occasionally they have been taken in ponds, dugouts or ditches which are not bordered by bushes or trees, but which do have very thick stands of cattail. It is likely that these Wood Frog collections represent temporary southern extensions of the range during favourable years. Wood Frogs have been heard calling from mid-April until mid-May near their southern limit, but the breeding period at any one locality probably is of shorter duration and population levels seem to be quite low.

The factors which exclude the species from the grassland are yet to be demonstrated. However, it is likely that the adults do not thrive in the dry prairie where temporary ponds and streams and rivers are the major sources of moisture. The creation of numerous farm dugout ponds does not seem

to have facilitated its spread. The surrounding prairie offers little suitable habitat for this woodland species, especially in dry years. It seems probable that the southern limit fluctuates from year to year, populations advancing south during a series of wet years when there is thick vegetation and some moisture throughout the summer and fall at pond margins. These temporary advances would likely be exterminated during exceptionally dry years.

### Chelydra s. serpentina, Snapping Turtle

Criddle (1919) in commenting on the range of the Snapping Turtle in Manitoba added that he had "seen examples as far west as eastern Saskatchewan in the Souris River". This record was repeated by Mills (1948) and Logier and Toner (1955). The Saskatchewan Museum of Natural History has a specimen collected "1 mile southeast of Oxbow, Sect. 14, Tp. 3, R. 2, W. of 2nd Mer., April 18, 1933", and this was included in the latter authors' second edition of their checklist (1961). Priestly (1945b) commented that it "has been taken in the Souris River", and Carmichael (1949) noted that a 28 pound specimen was collected September 26 by Mr. E. R. Rodenbush at Glen Ewen.

The first indication that this species may occur outside the Souris River in eastern Saskatchewan was a report in the Regina Leader-Post (May 9, 1961) of a specimen found in the farm dugout of Otto Karius, 5 miles south of Melville. The shell of this specimen was later obtained by the Saskatchewan Museum of Natural History and presented to the National Museum of Canada where it is catalogued as NMC 5399. This locality is north of the Qu'Appelle River valley and may indicate that the species occurs in this drainage in Saskatchewan. However, the chance that it might have been an escape cannot be ruled out, and further specimens from the area are needed to substantiate the presence of a natural population.

Snapping Turtles have also been reported from southwestern Saskatchewan where the "Whitemud" [Frenchman] River enters Montana (PC: Nelson Gowan, September 3, 1959), but no specimens are available. These records are plotted in Figure 2. The Souris and Qu'Appelle river records represent migration from Manitoba, while the report from southwestern Saskatchewan indicates that this species may also migrate north through the Missouri River drainage.

Chrysemys picta belli, WESTERN PAINTED TURTLE

Logier and Toner (1961) list and map only three records of the Western Painted Turtle in Saskatchewan. A search of back issues of The Blue Jay, examination of collections at the Saskatchewan Museum of Natural History and University of Saskatchewan, and reports of local residents have provided enough additional data to form a fairly detailed outline of this species' range in the province. The known records may be divided into three areas, the first two in southeastern Saskatchewan, and the other in the southwestern portion of the province. These

records are shown in Figure 2.

Area 1 (Qu'Appelle Valley): Cut Arm Creek where it enters the lower Qu'Appelle valley about nine miles southwest of Spy Hill (Kelley, 1960); Gerald (along railway track, and in Cutarm Creek), 16 miles north of the Qu'Appelle valley (Priestly 1945b); in a summerfallow field, ½ mile from York Lake, seen by Mr. Hogson (Shaw, 1947); Round Lake, August 30, 1954 (US, R-68), July 28, 1957 (US, R-83), one seen May 24, 1945 (Priestly 1945a), seen October 13 by Mr. Jack Willis (Shaw, 1947); Crooked Lake (PC: local fisherman); Indian Head (Kirchner, 1959); 45 miles northeast of Regina (PC: local resident July 6, 1959); between Lumsden and Craven, May 4, 1961 (PC: R. W. Nero); Valeport (PC: local resident); Regina, April 1915 (SMNH), (PC: R. W. Nero in Logier and Toner, 1961, p. 55) and April 15, 1961 (NMC 5248), April 22, 1961 (NMC 5249), Alan Wade; Pense, October 27, 1947 (SMNH).

Area 2 (Souris River): Refret Creek, tributary to Souris River, (Baker, 1959); Weyburn (Baker, 1959); 27 July 1959 (F. R. Cook); on road north of Yellow Grass, June 2, 1958 (PC: Brian Malley to SMNH).

In addition there is one specimen from Langbank, June 4, 1959 (NMC 4012) collected by R. H. Davis as it was crossing a road. According to Mr. Davis, there had never been a turtle found in this area previously. This specimen may have been a wanderer which had followed up streams flowing to the Souris River.

Area 3 (Southwestern Saskatchewan): The forks of Old Wives Creek (Macoun, 1896: 142); Wood Creek, 3½ miles northeast of Wood Mountain, July 22, 1929, C.M. Sternberg (NMC 1549[2]); pond southwest of Killdeer (PC: Bruce McCorquodale May 11,

1961); Notukeu Creek at Gouverneur Dam, 1 mile west of Gouverneur, one seen on July 11, 1958 (Bird, 1959); Notukeu Creek near Cadillac (Bird, 1959); approximately 10 miles south of Masefield (PC: Nelson Gowan); pond at Robsart; Battle Creek (PC: customs official at Willow Creek July 3, 1962).

There is a single report from the South Saskatchewan River. In a letter dated November 14, 1956, Mrs. Hugo Opahill recorded seeing a turtle swimming against the current and caught on the ferry approach at Leader Ferry on the South Saskatchewan River. As there are no other observations for this area this specimen must be suspect as an escape, and is omitted from the map, Figure 2.

The records from the Qu'Appelle and Souris rivers probably represent populations more or less continuous with those in Manitoba, where the species is more abundant. The few records near these rivers but outside their valleys represent either wanderers

or escaped captives.

The presence of the painted turtle had gone unreported in western Saskatchewan until noted by Bird (1959). These populations seem scattered, and are probably moreor-less isolated from each other. Recently a similarly isolated population has been found southeastern Alberta (Lewin, 1963a, 1963b).

Nelson Gowan, who contributed the record from 10 miles south of Masefield, supplied the following information on Painted Turtles in southwestern Saskatchewan (PC: 3 September 1959), "the turtles I have, locally gained entrance to this pond, I expect, by coming up the Milk River, entering a small tributary called Whitewater.

"By following Whitewater tributary they would have had to cross one mile by land... They grow here to nearly a foot in diameter, but small ones are most common in any of the warm waters to the southwest. They have inhabited this country for at least 85 years. I have seen them all the way from Wood Mountain, southwest to the Alberta border, but I don't know of them living more than 28 miles north of the U.S. border.

"They seem to thrive in sloughs, dug-outs and tributarys of the Frenchman River that do not freeze to the bottom in winter time. I have never known them to follow the springwater streams into the Cypress Hills or Wood Mountains,"

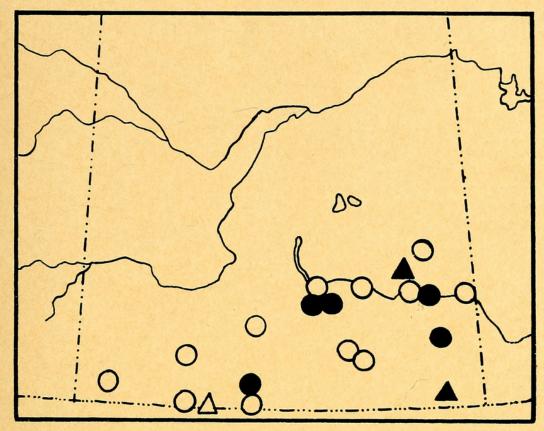


FIGURE 2. Outline map of southern Saskatchewan showing location of records given in the text for *Chelydra s. serpentina* (triangles) and *Chrysemys picta belli* (circles). Museum specimens are shown by solid symbols; reports and sight records by hollow symbols. In some cases a symbol marks the location of more than one record.

It seems probable that these individuals spread into the province from the Milk and Missouri river system separately from those which occur in eastern Saskatchewan, and on the basis of Mr. Gowan's comments and the large number of records there is little doubt that these collections represent naturally occurring populations rather than escapes or deliberate introductions.

Thannophis elegans vagrans, Wandering Garter Snake

Logier and Toner (1961) give four localicies for this garter snake in Saskatchewan: "Gouldtown (PC: R. W. Nero). Herbert (ROM). Saskatchewan River Valley north of Stewart Valley (PC: R. W. Nero). Twelve Mile Lake (Sternberg, 1930, p. 149)".

Four specimens presented to the National Museum of Canada by Dr. R. C. Connell of the Veterinary Laboratory, University of Saskatchewan, are the first representatives of this species taken north of the South Saskatchewan River in the province, although it is known to occur farthur north in Alberta (Logier and Toner 1955: 58; 1961:

65). These specimens were collected 23 miles north of the river, approximately 6½ miles south and two miles east of Beadle on July 6, 1962 (NMC 6353[2]) and April 25, 1963 (NMC 7369[2]).

Dr. Connell also reported (PC: August 23, 1963) observing *T.e. vagrans* at Brightsand Lake, about 145 miles north of the Beadle collection. Although as yet unsubstantiated by specimens this is the northernmost record for the province. The eastern record for the species in Saskatchewan, Twelve Mile Lake (Sternberg, 1930), is also unsubstantiated by specimens.

This species is apparently much rarer on the prairies than the very successful Western Plains Garter Snake, Thannophis radix haydeni, although it may occur more continuously over the southwest corner of the province than the Red-sided Garter Snake Thannophis sirtalis parietalis, whose distribution is apparently relict in this area. The distribution and variation of the latter species will be discussed in detail in a subsequent paper.

Crotalus v. viridis, Prairie Rattlesnake

The range of the Prairie Rattlesnake in Saskatchewan is composed of two segments. The northern part is the result of the spread of the species east along the South Saskatchewan River from Alberta. It is abundant in Alberta between Medicine Hat and Empress. Deck (1951, 1956) commented on rattlesnake abundance in that area but apparently did not take any specimens in Saskatchewan. Logier and Toner (1955: 75; 1961: 78) cite reports communicated by L. M. Klauber from Estuary, fork of Red Deer and Saskatchewan Rivers, South Saskatchewan River north of Prelate and south of Metador (= Matador). Dr. Klauber's records were based on a postal-card questionnaire and correspondence with Saskatchewan observers mostly during the years 1935-1938. They are to be considered inexact to the extent that they are cited as the nearest named town or geographical place with a name (PC: L. C. Klauber, 9 March 1964).

Through the efforts of Mr. F. W. Kowatch of Estuary, the writer and C. B. Powell located a den approximately 3 miles east of Estuary and collected two specimens, May 22, 1962, and eight more May 24, 1962. This area is in the cutbanks on the south side of the river, and is marked by numerous holes caused at least partly by natural cave-ins in the underlying soils. Other dens were reported one and one-half miles west of the railroad bridge over the South Saskatchewan River east of Estuary, and on the north side of the river approximately opposite the one we visited. At the Westerham elevators, approximately three miles east of the den where we collected, rattlesnakes are regularly seen in the summer between about July 10 and August 15. The period of observations seems to indicate that the individuals seen may come from the den 3 miles east of Estuary rather than a closer, undiscovered den. The most eastern report obtained was at Prelate Ferry, about 17½ miles east of Estuary. Here rattlesnakes are very rarely seen, and perhaps the occasional one that is observed has drifted down river from the Estuary-Westerham area on debris and has been washed ashore. The Matador record listed on the authority of Klauber by Logier and Toner (1955, 1961) may represent similar straying as there seem to be no additional reports east of Prelate.

The second part of the Prairie Rattlesnake range in Saskatchewan is along the southern border of the province. Logier and Toner (1955, 1961) listed Bellanger Creek, Cypress Hills, Eastend, Govenlock, Rosefield and extreme southwestern Saskatchewan in Township 1, Range 30. These records were also based on communications from Klauber. The National Museum has a rattle (NMC 1524) collected at Govenlock in 1929 by D. A. Fleming. During field studies I have had additional reports from the Masefield and Rosefield areas from local residents. The eastern record for the province is a specimen (NMC 6886) collected July 5, 1962 by Clive Elliot, about 8 miles west of Killdeer and 2 miles north of the International Boundary. It measured about 48" long when it was killed. Bruce McCorquodale has reported on the authority of a reliable local resident that there is probably a den just south of the International border in this area.

The range of the Prairie Rattlesnake appears to be more or less continuous in southern Saskatchewan from the Alberta border to 8 miles west of Killdeer. They probably find suitable hibernating dens along the sides of coulees and river valleys in this area. The most northerly penetration reported in this area is about 35 miles from the border at or near Eastend. They apparently do not range into, or north of, the Cypress Hills as no reports could be obtained during field studies in this area in 1961. The "Cypress Hills" record based on a communication to Klauber was probably from south of the hills. It seems apparent that there is a hiatus between the populations in southern Saskatchewan and those farther north along the South Saskatchewan River, although the range is continuous to the west through populations in Alberta.

It is the writer's impression that rattle-snakes are less common where they do occur in Saskatchewan than in most areas of their Alberta range. The limiting factor for rattle-snakes on the northern prairies may be the availability of suitable sites for communal hibernation. In Saskatchewan and Alberta the known dens are along the cut-bank slopes of the river valleys. The lack of suitable hibernation areas between the South Saskatchewan and Frenchman rivers probably accounts for the obvious hiatus in their range in this area. Studies are needed on the distance rattlesnakes will spread in the summer from their wintering dens and the factors involved in the suitability of these dens.

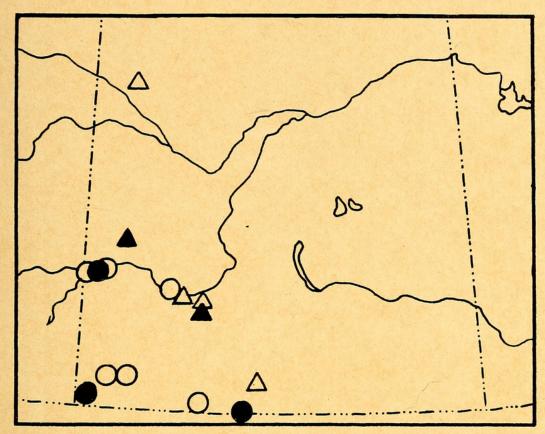


Figure 3. Outline map of southern Saskatchewan showing location of records given in the text for *Thamnophis elegans vagrans* (triangles) and *Crotalis v. viridis* (circles). Museum specimens are shown by solid symbols; reports and sight records by hollow symbols.

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<sup>\*</sup>With addition of the Banfield communication 23 October 1964.



## REPORTS OF MARINE TURTLES FROM NEW ENGLAND AND EASTERN CANADA

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#### Introduction

Marine turtles are considered to be tropical or subtropical and their occurrence in northern waters is typically dismissed as accidental. The standard reference books of Carr (1952), Conant (1958), and the more recent *Introduction to Herpetology* by Goin and Goin (1962) leave one with the impression of tropical marine turtles being just that. However, recent personal observations and a search of the literature revealed 112 documented coastal records of marine turtles from Newfoundland to Connecticut (Table 1) with an indication of a seasonal occurrence. A reappraisal of the status of these turtles in the cold waters of Eastern Canada and New England is presented here.



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