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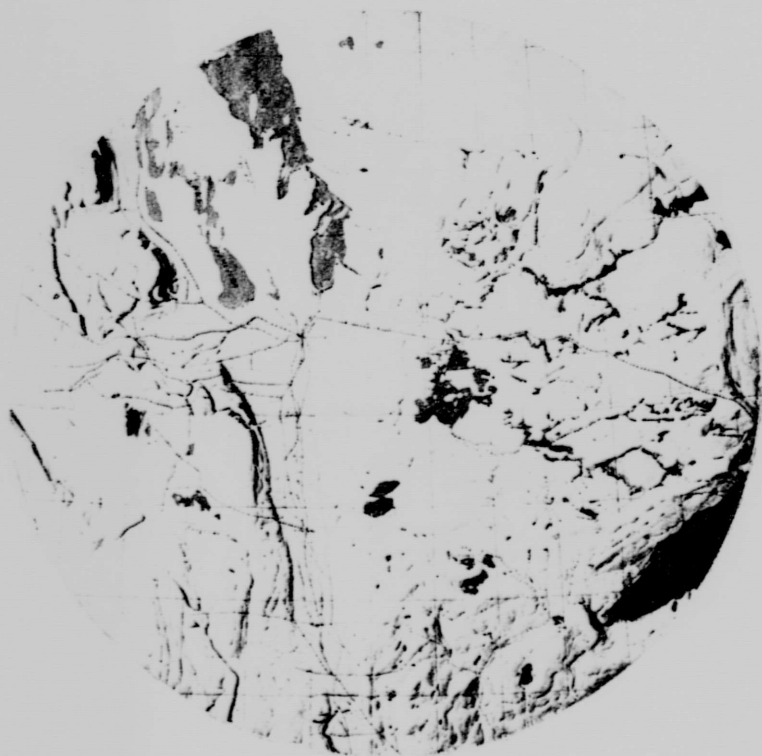
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TOPOGRAPHICAL MAP OF RED RIVER VALLEY, FROM MODEL BY D. B. DOWLING.



PART OF MANITOBA.

Dotted lines show beaches of west side of former lake.

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THE OTTAWA NATURALIST.

VOL. XV.

OTTAWA, AUGUST, 1901.

No. 5.

THE PHYSICAL GEOGRAPHY OF THE RED RIVER VALLEY.

By D. B. DOWLING, B. Sc.

A critical study of the physical features of any region is not complete nor is its full significance understood if there is not added some note referring to the great changes which have contributed to its history. Many of the bolder features such as mountain ranges show in the bending and folding of the beds composing their mass, a yielding to great lateral pressure and consequent upheaval. Similarly all the surface deformations offer evidence as being the result of various agencies; whether changes in elevation, folding and breaking of the crust or the continued action of atmospheric or climatic conditions.

In the district to be discussed the principal movements recorded are changes in elevation during which the sea advanced or retired and was the principal agent in the deformation and subsequent addition to the deposits on the earth's crust.

A reference to the illustration will show the general nature of the valley from the height-of-land at Lake Traverse northward to the Manitoba lakes. It broadens toward the north and in Manitoba is seen to include a wide tract—the first prairie steppe—extending from the hills bordering it on the west, to the rougher country lying to the east of Lake Winnipeg.

The general character of the country on both borders is quite distinct and the plain, through which the river runs, forms an area of a still different type. The character of each is primarily caused by the relative hardness and formation of the material forming the crust of the earth beneath.

To the east is a rugged plain sloping gently westward. On this many small lake-basins are seen and the streams winding through it are peculiar in that they have not of themselves worn down valleys but are found winding in various ways seeking the lowest level, passing through lake expansions which are merely hollows filled to the level of the lowest outlet. This area is a part of the original continent formed after the molten mass of the earth had cooled sufficiently to have formed upon it a crust.

A study of this area shows that the original crust suffered many changes—that successive sinkings into the still molten matter beneath, modified much of it or probably remelted all of the original surface. The earliest littoral deposits are associated with eruptive greenstones, and wherever remnants of these are found they are nearly always surrounded by rocks which appear to have been at a later date in a plastic condition and to have enfolded the early sedimentaries. These remnants are of great economic value inasmuch as they have been specially enriched by veins carrying the precious and other metals and minerals. A long lapse of time enabled the surface to become firmer before additional deposits were placed upon it, but the surface suffered great denudation and a large part of it was removed to form the earlier stratified sea deposits. The uneven nature of its present surface is due in a great measure to the varying hardness or brittleness of the constituent rocks.

The country beneath this rough slope and the edge of the plateau to the west of the valley is underlain by limestones placed nearly horizontal and covered by coatings of clay, the nature of which is dependent on the conditions of deposition.

The plateau to the west through which may be seen many deep river channels is composed of a series of soft, dark coloured, easily eroded shales or hardened clays with occasional overlying deposits of sand and clays of a lighter colour containing a few seams of lignite which were deposited in shallow, probably brackish water.

These various deposits indicate a certain part of the history of the continent to be briefly as follows :—

A subsidence of the original continent brought the sea into the central part of the present land area, so that its waters covered perhaps all of Manitoba. The advance was slow and represents a

great lapse of time. Along the margin of the sea the waves and currents were breaking up and carrying away the loosened parts of the former land surface. The heavier material was left near the shore to form the lower rocks which are mainly of sand, while above are the deeper sea deposits; limestones.

That this sea remained for a long time is evident from the great thickness of the limestone beds laid down over its bed, for it is generally supposed that limestone is not formed very rapidly.

The commencement of an upward rise was probably about the time of the great coal period. Traces of rocks formed at this time are found in Minnesota but none so far in Manitoba. As this part rose above the water it probably presented a very even surface or that of a great plain sloping to the south-west, but the fact that near the shore the beds were thinner than elsewhere would cause them to be more easily fractured by any unequal movement of the crust in the general elevation.

There was a long lapse of time during which this part of the continent remained above the sea and it is probable that in this interval the surface of the limestone was worn away and brought near its present contour. Along the eastern margin there was probably a line of cliffs facing the east, and in front of this a line of lakes or a river system the fore-runner of the Lake Winnipeg basin.

The next evidence of change in the elevation shows that the next advance of the sea was caused by a much less depression than in the previous case. In this instance the sea was shallow and apparently the waters very muddy if we are to judge by the amount of silt that was left by this submergence.

A preliminary sandy deposit showing the advance of the sea is succeeded by a great thickness of shale or hardened mud which is characteristic of this later submergence. These shales not being here subject to any great pressure except the weight of the upper beds, are not hardened to any degree.

Above these dark shales there is a lighter coloured series of sands and clays holding a few seams of lignite, but as these deposits have been removed from most of the area in the vicinity of the Red River valley they are merely referred to; farther west they are better developed and are of great economic importance.

After the final emergence from the sea was accomplished, the country assumed somewhat the same character which it has at the present time but with several modifications. The plateau west of the present valley extended farther to the east and sloped more regularly eastward while the larger channel was probably also shifted eastward to run along the face of the limestone outcrop or by a series of minor streams running parallel to it corresponding to the basins of the present lakes.

A great change in the climatic conditions next brought about important changes in the surface features and also in the distribution of the soil. Colder winters and cooler summers were succeeded by a long period of continuous winter, in which all the natural drainage was stayed and there gradually accumulated a vast thickness of snow. The area of greatest precipitation and consequent accumulation of ice and snow was at first in the country to the north. As this ice increased in thickness it began to spread slowly towards its outer margin. In this way there was a movement of the ice southward through the valley and as the movement progressed this mass of ice picked up and carried along with it much of the loose material on the surface, at the same time scoring and polishing the harder rocks, breaking off protruding points and deeply plowing along the face of the plateau of soft rocks to the west. When the valley was filled there might have been a halt to the forward movement for a time but it gradually over-rode the edge and spread to the west as far as the Coteau du Missouri and southward over Minnesota.

Warmer conditions returned and the great mass began to melt along its margin. The great amount of debris carried along with the ice was thus left in great heaps where the edge of the ice was stationary for some time or if the retreat caused by melting was rapid the surface would be more or less evenly strewn by this material which is generally called boulder-clay. As the ice melted there would naturally be a vast quantity of water to be carried away, and river channels were formed which appear now to have little cause for origin except for this emergency. Where the slope of the country was toward the ice, large lakes along its margin were formed.

One line along which it is evident the edge of this glacier made a halt as shown by an extra amount of boulder-clay, is along the western margin of the Duck mountains then southward skirting the eastern bank of the Assiniboine river, crossing to the south side through the Brandon hills and by the Tiger hills to the Pembina mountain. There is evidence that a lake filled the valley of the Souris and part of the Assiniboine, while the ice front was at this line. (This is outlined in the second illustration.) The drainage of this lake was to the south-east along the foot of the glacier and the scouring of this large stream wore a great valley through which now runs a small stream—the Pembina river. The change in drainage was accomplished by the further melting of the ice so that the Assiniboine and the Souris rivers united in the present valley.

The retreat of the ice down the Red River valley was accompanied by the formation of a large lake at its southern margin, for the water was obliged to accumulate till it found an outlet, which in this case was to the south through what is now Lake Traverse to the Mississippi. As the retreating front passed farther north the lake grew in dimensions and beaches were formed along its shores. There is evidence that another great invasion of ice this time from the north-east, was threatened but its margin did not probably cover the entire basin. It still held the water, as a long inland sea, from draining to Hudson Bay. During this period the removal of the weight of the former glacier from the earth caused a gradual rising of the land at the north to probably its previous elevation and maintained the flow of the waters of the lake to the southward. This rise was continued as the second glacier disappeared and there came a time when the water found other outlets probably toward Hudson Bay and a gradual contraction of the lake ensued in which successive beaches mark the different stages.

The evidence of the former occupation of this great plain by a vast lake is clearly shown in the beautiful beaches in Manitoba, Dakota and Minnesota. These have been examined, traced and had their levels determined. In the tracing and levelling it was discovered that instead of being laid in level rows, the surface of the higher ones rise to the north at a rate increasing from six inches to one foot in the mile. The lower ones are more nearly level as is the case of the lowest or those at present around the present lakes. This is the evidence of the upward rise of the land to the

north-east which also is shown in the beaches around Hudson Bay at heights up to 500 feet above sea.

As the level of the lake fell, the present lake basins became defined and reached their present dimensions. Examples of beaches at different stages might be cited but they are very numerous in the western part of the basin along the base of the Pembina and Riding mountains. An example of a former island in the lake at a low stage is to be seen at Stony Mountain where the crest of the hill is crowned by good types of lake beaches.

The effect on the value of the farming lands of the valley of this former lake is of great moment. The general boulder-clay covering, which the northern part of the continent has received produces some fine farming land but when this material has been sifted and all its finer constituents spread out over a particular area none but the finest land is to be expected in that area. That the great lake received an enormous amount of sediment especially from the west is evident not only in the soil of the valley itself but in the great valleys worn down through the clay rocks of the plateau. An especially thick deposit would be expected at the mouths of all these streams and particularly of the delta in front of the mouth of the Assiniboine which at one time carried the water of the Saskatchewan river while the latter was ice-dammed at the north. The Pembina river as before noted was at one time a great stream, the outlet of a temporary lake, and brought down a heavy deposit. Farther north, the Valley river spread a sediment over the Dauphin country, while the Swan river helped to fertilize the country north-west of Lake Winnipegosis. Beyond the confines of Manitoba the Great Saskatchewan spread an immense delta deposit over the low country to the west of Cedar lake but the vast amount of sediment still being carried by this stream, as in the case of the Mississippi, causes its bed to be gradually built up above the surrounding country. Great stretches are therefore available in that region as yet as grazing or hay land only during low water.

We have thus some clue to the reasons for the fertility of most of the Red River valley. Other parts that have not been specially fertilized in this way are covered by the ordinary boulder-clay which when disintegrated forms good though heavy soil of fair quality.

The eastern and northern parts are at present well wooded as well as the summits and slopes of Riding mountain and thence northward. The south and western parts west of Red river are generally open prairie though the true forest is bordered by a more or less wide belt of partly wooded country.

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MY FIRST NAMESAKE.

By SAMUEL H. SCUDDER.

In the summer of 1860 I made a collecting trip to Lake Winnipeg and the lower Saskatchewan, interesting to me because so far as I went I passed over the exact route taken by the Franklin search party under Sir John Richardson. It will be remembered that the insects collected on that occasion were published in Richardson's *Fauna boreali-americana*, by Kirby, and I was thus the better able to determine some of his species. Among the butterflies I found at the mouth of the Saskatchewan (collected with incredible difficulty on account of the mosquitoes) was a delicately marked and exquisitely pretty bluet unknown to me, and I sent it to Mr. W. H. Edwards, then just beginning to describe new American butterflies, who pronounced it new and named it *Lycæna scudderii*. It was the first insect named for me and has always held a special place in my affection.

Although first described from specimens brought from the interior of the continent and far north, it has since been taken over a wide extent of northern territory, mostly in Canada, and as far east as Cape Breton; it has been found also in a few isolated localities at some distance from its known general range, as at Albany, N. Y. It was on account of its occurrence at this place (though it has since been recorded from New Hampshire) that I introduced it in my work on the Butterflies of the Eastern United States. Its early stages had been partly described by a Canadian entomologist, but, unwilling to publish my work without a tolerably full account of my namesake and figures of it at every stage, I determined to make a visit at the proper season to the spot near Albany where it had been found, and get eggs from females enclosed over lupines, and so, by rearing it, obtain its whole history. The State entomologist who had first discovered it at Albany kindly accompanied me to the breeding ground, and with an absence from home of just twenty four hours I obtained the material afterward used in my book.

Of course the Reporters got wind of this; a journey of four hundred miles after a butterfly's eggs was not lost upon them! They learned how many eggs I had secured and, easily figuring

up the probable cost of the trip, announced in large head-lines in the Albany papers, that the price of butterflies' eggs had risen to "SIXTEEN DOLLARS A DOZEN." In very truth, many kinds would be cheap at that.

This butterfly appears twice during the year. The first brood flies early in June or even late in May, and continues on the wing through June and often into July. It lays eggs in June, which hatch in seven or eight days, the caterpillars live in that stage for about a month and the chrysalis continues about ten days. Sometimes these figures must be shortened, for though the second brood of butterflies is normally an August brood, it sometimes appears by the middle of July or even earlier. The second brood lays eggs in August, but whether these hatch before spring, or whether it is the caterpillar or chrysalis which hibernates is not yet known.

The turban-shaped and most elegantly chased eggs are laid on the leaves of lupines, usually on the under side, and on the stalks. The caterpillar, which is slug-shaped, eats its way out at the side of the egg; it has a remarkably extensible head and neck and procures its food in a curious way, at least when young, showing its relationship to some of its brethren which are fruit-borers; biting a hole through the lower cuticle of the leaf no larger than its own minute head, it devours all the interior of the succulent leaf it can reach by pushing its head through this hole in every direction and leaves the eaten leaf with a blistered look, this blister being eight or ten times larger than the hole by which it is entered. Later in life, it devours also the cuticle on which it rests while feeding, but also devours such softer parts of the leaf between the integuments as it can reach by its protrusile head, and it will bore the softer parts of a cut stem down to the rind as far as it can reach.

The caterpillar is attended by ants according to Mr. Saunders, who first discovered it. He was "surprised by seeing several ants actively running about the leaf" on which he found his first caterpillar, "and repeatedly over the body of the caterpillar, without disturbing it in the least." The discovery of other caterpillars was indeed "made comparatively easy from the invariable attendance of these active attendants." They attend them to lap up the drops of fluid secreted by glands opening externally near the hinder end of these caterpillars, and of which, as of the honey-dew Aphides, the ants are extremely fond; so fond indeed that they guard the caterpillars from the approach of insect enemies, and thus the gain is mutual.

ON THE AUTUMN-FLOWERING OF VARIOUS WILD
PLANTS IN 1900.

BY CEPHAS GUILLET, Ph. D.

On account of the remarkably mild autumn of last year, one might have gathered nosegays of wild flowers about Ottawa, not only throughout October, but during the first half of November. We had our first real snowstorm and sleighing the 13th November, but even for some time after that wild flowers were to be found in odd nooks and corners. Berries also were to be seen unusually late. Dr. James Fletcher tells me, he gathered as many ripe red raspberries as he cared to eat, at Kirk's Ferry, on the 27th September, and they were of excellent flavor. I picked a few near Rockcliffe Park as late as the 15th October, which were, however, of better color than taste.

It is well known that different plants bloom at different times; that there is, so to speak, a procession of the flowers. Just when or for how long we may expect this or that plant to bloom is not so well known. I am not aware that the order in which the 1,200 odd species of flowering plants, of the Ottawa district, put forth their blossoms has ever been determined. Here is a pleasant and useful task for the students of nature in every locality of our country. As a slight contribution to this end, I submit the following late autumn observations made in the vicinity of Ottawa, together with observations made in other parts of the country by several readers of this "THE OTTAWA NATURALIST," who have been so good as to communicate them to me.

Viper's bugloss or the "blue thistle" (*Echium vulgare*)—said by Prof. Harrison in his "Weeds of Ontario," to be imported from Europe—was quite abundant on October 26th, on a limestone ridge three miles out the Montreal Road. Three other "weeds" (as the farmer justly calls them) I found on November 6th, namely, May-weed (*Maruta cotula*) and ox-eye daisy (*Leucanthemum vulgare*) on the roadside, and treacle mustard (*Erysimum cheiranthoides*) in a garden, in Ottawa East. I saw a patch of white clover in Mr. Odell's brickyard on November 6th, and some red clover near the same place on the same day, and again near Hemlock Lake on November 8th and 12th. North of Peterboro' at Stony Lake, I

have observed yarrow (*Achillea millefolium*), golden rod (*Solidago*) and the asters begin to bloom in the order named, yarrow late in June, golden rod early in July, and the asters late in July. These flowers thereafter remain with us until winter sets in. I found golden rod still in bloom on a road in Ottawa East, November 6th; and near Hemlock Lake, November 9th; and asters near Green's Creek, October 26th; while Dr. Fletcher found fresh new specimens of *Solidago Canadensis*, *Aster cordifolius* and *Aster paniculatus* at Britannia on November 9th. The yarrow I found on the uplands near Green's Creek, October 26th; near Hemlock Lake, Lake, November 8th; and at Rockliffe, November 12th.

Perhaps the most familiar flowers to every child are the buttercup and dandelion, and little wonder seeing that they display their bright yellow blossoms for seven months of the year. The tall buttercup (*R. acris*), I found on the roadside in Ottawa East, November 6th; on Beechwood avenue, November 8th; and at Rockliffe, November 12th; all bright fresh specimens. Dr. Fletcher found it also at Britannia, November 9th. The dandelion I saw in a field three miles out the Montreal Road, October 26th; near Hemlock Lake, November 8th; and again near the same place one plant with two blossoms as late as November 23rd.

The mention of strawberry blossoms and of violets reminds one of spring, for they may be found as early as April, and yet they are also among the last flowers one finds in bloom in the fall. I found strawberry blossoms (*Fragaria virginiana*) in a field near Green's Creek on October 26th, and several plants in bloom at Rockliffe, November 12th. The white Canada violet (*V. canadensis*) I found in a wood out the Montreal Road on October 26th, and in hollows in the beech woods near Beechwood Cemetery on November 9th and 12th in great numbers, while by searching under the leaves two plants were found in bloom even on November 23rd. The downy yellow violet does not commonly flower in the fall, yet last year quite a few were found November 8th, blooming along with the Canada violet in the beech woods, and one good bright specimen was obtained on November 12th.

The cultivated plants also felt and responded to the balmy touch of the last autumn of the century, for on November 8th, Dr.

Fletcher tells me, the guelder rose and Japan quince were in flower on the Experimental Farm.

That the late mild season was general over a great part of the land of "Our Lady of the Snows," is shown by the following reports of other observers in northerly regions of our country.

Mr. John A. Dresser of Richmond, Que., sends the following from the phenological observations of the school at Nicolet Falls, Que., (15 miles from Richmond) made by Miss Annie Dresser :— October 30th, buttercup ; October 31st, dandelion ; November 3rd, blue and white violet ; November 5th, creeping buttercup ; November 6th, strawberry blossom. Similar observations, except of the violet, were made three miles from Richmond by Miss Bertha Dresser, and at Richmond in the St. Francis College School by Miss A. L. Beckett.

"On the 2nd October," writes Dr. Robert Bell, "in a brûlé 15 miles N.E. of the town of Chapleau (on the C. P. R., N.E. of Lake Superior) I found the blue-berry bushes covered with a profusion of flowers, and in the same brûlé a few strawberry blossoms. Young white birch bushes, 2 to 3 feet high, had burst their buds and some of them showed the green of the young leaves. The ground in the brûlé was dry and warm with granite rocks cropping out near by and all well exposed to the sun and sheltered from the wind. We had had several days of warm sunny weather just before the above date (2nd October)."

On October 16th, Mr. W. J. Wilson, collected the trailing arbutus (*Epigaea repens*) in flower between Jack Fish and Manitouwick Lake, on the main canoe route between Michipicoten Harbour and Missinabie station on the C. P. Ry. He also saw the shrubby cinquefoil (*Potentilla fruticosa*) in flower in several places up to October 1st.

Mr. J. A. L. MacMurray brought Dr. Fletcher a good large bunch of the flowers of the smooth blue-berry, *Vaccinium Pennsylvanicum*, and marsh marigold *Caltha palustris*, both of which he had found blooming profusely in the French River Valley, Ontario, in the month of October. He also saw wild strawberries in flower in many places.

Mr. A. W. Hanham, writing from Manitoba to Dr. Fletcher, says : "At Brandon, in October, I noticed stray plants in bloom

on the hill sides, a large percentage being summer bloomers ; a botanist would have made quite a decent collection of native plants in bloom. We had no killing frosts until towards the end of the month. About the 1st of November a flower called scarlet cup (*Castilleia miniata*), frequenting marshy lands, was plentiful in bloom. I have this on good authority ; some were picked and brought in. Isn't this a July August species ? I fancy I have seen it from the train, when *en route* west to Brandon."

I could not more appropriately close this paper than by quoting a little poem placed in my hands by the genial president of the Ottawa Field Naturalists Club, Dr. Ami. It was written by Albert Bigelow Paine, and is entitled "To a Violet found blooming in November."

Pretty blossom, little stranger, with your modest eye of blue,
Why in this unusual season are you bravely blossoming ?
Did you think the other flowers all had been deceiving you,
And because the day was sunny that it was return of spring ?

Or perhaps you wished to see how the world looked at this season,
When companions of the springtime, birds and blossoms have all fled,
And the woods are brown and silent—tell me, have I guessed the reason !
And do you lament, sweet blossom, that you find your brothers dead ?

Little violet, pretty stranger, bravely blossoming alone,
Prize you well the fleeting moment, for so brief will be you stay
That I fear it will have ended with the setting of the sun—
For the frosts will gather thickly o'er you ere another day.

You will wither, little blossom, when you feel its icy breath
Fall upon your tender petals that were just unclosed to-day,
As with me, in early youth-time, hope received a blow of death,
By the frosts of winter falling thickly on my head in May

I am sorry, tender floweret, that so bravely you came hither.
When all other flowers have faded and the winter winds are nigh,
I am sorry, but 'tis only that you must so quickly wither—
Sorry that you left the bosom of your mother but to die.

TRINGITES RUFESCENS, BUFF-BREASTED SANDPIPER.

By G. A. McCALLUM, M.D., Dunnville, Ont.

(Read before the Ornithological Sec. of the Entomological Soc. of Ont.)

I write this at the request of a friend to report at greater length the capture of a female of this species and her nest, which I was fortunate enough to take near Dunnville, Haldimand Co., Ontario on June 10th 1879. The only particular point of interest being the latitude in which this nest was found, since, heretofore, this bird has generally been credited with breeding only in high latitudes. A short report was published in Mr. McIlwraith's work on the "Birds of Ontario" a number of years ago and were it not that the fact of its breeding in this locality is very remarkable the published report already given would be sufficient. However, as the identification of my specimen has been doubted by Prof. Macoun and it has been suggested by him in his Check List of the Birds of Canada that I evidently had mistaken the bird for the Spotted Sandpiper, *Actitis macularia*, I felt somewhat nettled that an old fellow like myself who has closely observed birds all his life should be credited with not knowing a Spotted Sandpiper, one of our most beautiful as well as one of the very commonest of our shore birds.

I find however, that I am not the only observer who has been doubted when he reported seeing or taking the nest of this rare little bird the Buff-breasted Sand-piper. Dr. Heerman claimed to have found its nest in Texas made of grasses placed in a hollow in the ground and containing four eggs but Prof. Baird said "but as this bird breeds in high northern regions up to the very border of the Arctic Ocean he may have been mistaken in his identification."

As far as I can make out it has always been a very uncommon species, only one or two birds having been seen at a time in any locality. It was entirely unknown to Wilson and Buonaparte and was first made known as a species by Vieillot from a specimen taken in Louisiana, but Audubon had not noticed it there and the first one he ever saw was a specimen in the hands of the Arctic explorer Capt. James Clark Ross who had received it from a sailor who had secured it on one of his inland excursions in the

far north. "From all this Audubon conjectured rightly" so Prof. Baird says "that this bird bred within the Arctic Circle." It is said to winter in South America and the West Indies. Gundlach reports it as a winter visitant in Cuba making its appearance there from the north from August to November. Mr. Salvia reports that he received a specimen from Bogata, and Natterer obtained examples from Brazil between November and March. Henshaw reports taking a specimen in Boston harbour and Boardman found it at Calais, Me. The dates for these last are given as about August 20th which would probably be the time of its southern migration.

My capture was on June 10th, 1879. While walking along the bank of the Grand River below the dam on the evening of June 9th a bird arose in a hurried manner from near my feet. I saw at once that it was not the common Spotted Sandpiper from its color, size and manner of flight. I noticed too that it evidently had a nest and looking where it arose I easily found it, between two large tussocks of coarse marsh grass which grows in such localities. There was a distinct depression in the soft ground and although there was not much of a nest, some bits of moss were gathered around the edge helping still more to form a nest. It contained three very dark colored eggs lying with the small ends pointing to the centre as is usual with most birds of this family. Being anxious to secure the bird herself I did not take the eggs then, but returned in the morning and having shot her I went to the nest and was somewhat disgusted to find that during the night two of the eggs had hatched and their places had been taken by two pretty little creatures spotted with dark spots on a light fawn-colored ground. They were all brought home and mounted and are now in my collection. The egg although far advanced, I was able to make a good cabinet specimen of and it also is in my collection. It measures 1.25 x .95, and is very pyriform in shape. The ground color is buff thickly covered with spots of two shades of dark brown or sepia, the markings being much larger on the large end, the general color being very dark.

The location of the nest was on the bank of the river four or five feet above the water and a short distance from the edge. I did not see the male bird, in fact this is the only specimen I ever saw outside of a collection, and I was at the time naturally very proud of the find. The bird had little or nothing in her stomach besides some bits of some small insects.

THE WOODCOCK'S LOVE SONG.

By L. H. SMITH

(Read before the Ornithological Sect. of the Entomological Soc. of Ont.)

The woodcock so much admired by sportsmen as a game bird, has traits of character which have never been read either by the sportsman or the naturalist. His habits being principally nocturnal perhaps to some extent account for this.

His peculiar shape and make up, so different to that of the grouse or partridge family, or to any other game bird, mark him as a strangely unique specimen. His long bill, peculiarly shaped head, in which his large black eye is set so far back, his breast-heavy body, and short excuse for a tail, all mark him as a delightfully curious and uncommon bird. His color is beautiful, velvet and russet; none of our game birds is clothed in richer plumage.

The haunts of the woodcock are in keeping with his general character. Our deeply shaded swales and glens are the places he loves to make his home. He is seldom found unless in a spot so beautiful that the sportsman-naturalist could imagine he is the companion of "wood nymphs"; no other birds frequent and live in such lovely sylvan retreats.

"The woodcock's love song" is a strange performance and is known to comparatively few. Any fine warm evening about the middle of April, if you take your stand at dusk, by the side of a good piece of woodcock cover, and remain perfectly still for a few minutes, you will soon hear a sound, perhaps not twenty yards from you, from some bird on the ground. If you never heard the same before you would be inclined to think it was a nighthawk, for the sound is a sort of drawn-out "pâte" very similar to the night-hawk when on the wing. The bird will emit this note "pâte," "pâte," several times at short intervals, and then take wing, when you will at once recognize the author of the weird notes, for no one who has ever heard the wing-whistle of the woodcock as he rises in cover can mistake him for any other bird. The bird mounts in the air by a circular flight; you can easily keep track of him, although he is not visible to the eye, by the incessant twittering noise he is making with his wings. When he arrives at the summit of his flight, he commences a sharp twittering whistle and after describing a few circles he commences a rapid descent, and pitches to the ground very close to the spot he rose from two or three minutes before. He soon commences his "pâte," "pâte" again and repeats his aerial gymnastic flight over and over again. By listening very attentively you will hear a low guttural note just preceding the pating note; a note very similar to the crowing note of a hen made just as she is getting her chicks nestled snugly beneath her for the night. How long on a fine spring night he will keep his antics up I cannot say, but quite long enough for you to get the whole performance thoroughly engraved on your senses, so that at any subsequent time you would not possibly mistake it for that of any other bird.

THE LATE DR. ELEANOR A. ORMEROD.

Press cablegrams of the 19th July announced the sad tidings of the death of Miss Eleanor A. Ormerod, of Torrington House, St. Albans, England. This accomplished and estimable lady was a recognized authority on economic entomology, and had during a long series of years prepared and published numerous Reports and Manuals upon injurious insects, and of great value to the agricultural interests of Great Britain. As a recognition of prolonged and valuable work, she was created an LL.D. of Cambridge, and she was a fellow or honorary member of many scientific bodies. As one the few Corresponding Members of the Ottawa Field-Naturalists' Club she evinced much interest in its progress and in the investigations of its members —W. H. H.

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