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Fossils in the St. Peter Sandstone

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I frequently came across bowlders of Trenton limestone, such as is quarried for building stone in Minneapolis and St. Paul.

Associated with the Devonian (white) and the Silurian (yellow and blue) limestones is also rarely a fine white sandstone, which is sometimes mixed with patches of yellow limestone, and sometimes contains faint fossil marks. Among the specimens from Morris, Minn., there was one of this sandstone which contains a clear cast of one valve of a brachiopod. This is still at the University of Minnesota.

In conclusion: it seems probable that fossils occur quite generally in the drift of Minnesota. But just to what extent, is to be determined. I found over a dozen species in less than that many hours all told. And if the fossils are not so numerous as I think they are, yet this conspicuous white limestone could easily be traced wherever it exists now, and perhaps to where it rested formerly.

February 3, 1891.

FOSSILS IN THE ST. PETER SANDSTONE.—*F. W. Sardeson.*

Last fall, during the Thanksgiving vacation at the State University, I happened to raise the question, why fossils had never been found in the Saint Peter sandstone, in and around Minneapolis? Professor Hall was of the opinion that such fossils could be found; and he also suggested the place where they were most likely to occur.

According to his advice, the next day was spent in looking through some recent cuts along the C. B. & N. R. R., about five miles below Saint Paul. And I brought back to the University, what was considered undoubtedly fossils. Another search during the holidays added other evidence. The following is a list of what has been found:

- Gastropods: — 1. *Mucurea* (?) two casts.
 2. *Murchisonia gracilis* Hall, two moulds.
 3. " ? *tricarinata*? Hall, two moulds (imperfect.)
- Lamellibranchs 4. *Cypriocardites rectirostris* Hall, three.
 5. " (?) ? three halves.
 6. " (?) one half.
 7. *Modiolopsis*? (?) four half casts.

There are others but whether they are worm burrows, crinoid stems of bryozoa, or all three, is hard to determine.

The fossils are for the most part, marked out by discoloration (brown or red), but a few by cleavage only. They are quite numerous and are easily found when one once knows how and where to look for them.

They occur fifty or more feet below the top of the formation.

I have assigned the specimens found, to the genera and species to which I think they belong. They are remarkably like species found in the lower part of the Trenton shales and in the Trenton limestone which here rests conformably on the Saint Peter sandstone. And it may be, as has been suggested, that the Saint Peter is of the Silurian rather than that of the Cambrian formation.

As soon as spring opens, I shall spend some days in a more thorough search, in order to find out as far as possible, the true nature and horizon of these fossils in the Saint Peter sandstone.

February 3, 1891.

THE LOWER SILURIAN FORMATIONS OF WISCONSIN AND MINNESOTA
COMPARED.—*F. W. Sardeson.*

It is the purpose of this paper to give some observations on the Silurian of Minnesota, and the Trenton group in particular; and to compare it with the same of Wisconsin.

There are some difficulties in undertaking such a comparison. For example, the Trenton group in Wisconsin is nearly all limestone, while in Minnesota it is largely composed of shales. This lithological difference is accompanied by some differences in the fauna and in the outward appearance of the fossils. Then, too, four beds are recognized in the Trenton of Wisconsin, the Lower Buff, Lower Blue, Upper Buff and Upper Blue beds, while in Minnesota two are usually spoken of—Trenton limestone, or shell beds, and Trenton shales, or green shales. These difficulties I shall aim to avoid in part and in part explain.

I shall take up one by one the beds as seen in Minnesota and compare them with the same in Wisconsin, so far as I can.

The lower Trenton limestone, or Trenton limestone of Minnesota, consists of three beds differing somewhat in lithological character and fauna; most strongly so in the area around the "Twin Cities," *i. e.*, Minneapolis and Saint Paul. The first of these, next to and conformable with the Saint Peter sandstone, is the same bed as the Lower Buff limestone of Wisconsin, judg-