

(Calcareous). The following are the grounds on which this correlation of the beds is made:—

Beds 6 to 13 inclusive are, as already stated, supposed to represent those named the "Maquoketa shales" by Dr. White in Iowa. In Iowa, the beds so named are about 75 feet in thickness, and consist of bluish and brownish shales with calcareous layers, which sometimes form a considerable part of the whole. In Wisconsin, the Maquoketa beds average about 200 feet in thickness and are composed of grey, green, blue, red, purple, buff and brown shales with thin limestones. These beds are also known in Minnesota, which, being much nearer to the locality now in question, would afford a better term of comparison, but there appears to be, unfortunately, an absence of complete sections. At Stony Mountain, however, fifty-eight miles north, in Manitoba, rocks determined by Mr. Whiteaves, on the evidence of fossils, to be of Hudson River age, occur, and so far as the section is there apparent, it corresponds pretty closely in general character with that in the Rosenfeld well. The beds at this place are as follows, in descending order: 1—

	FEET.
1. Brownish-grey dolomitic limestone.....	40
2. Reddish-grey limestones, clayey partings.....	10
(Small gap in section.)	—
3. Limestone like No. 1.....	20
4. " in thin beds.....	4
5. "	2
6. Limestone, thin and broken.....	6
7. Yellowish rock.....	8
8. Reddish shales.....	10
9. Yellow and red shales.....	60
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TOTAL.....	160

These evidently nearly resemble those numbered 10 to 13 in the Rosenfeld boring.

The limestone numbered 14 in the section at Rosenfeld is supposed to represent the Galena limestone of the west, which it resembles in character. It probably, however, as already stated, may include layers at the base equivalent to the Trenton, to which latter formation the red shale, 75 feet in thickness, next underlying in the section, must be assigned. The Galena limestone of the west, which is nearly equivalent to the Utica of the New York series, is about 180 feet thick in Minnesota; 250 feet thick in Wisconsin; and from 100 to 250 feet thick in Iowa. The Trenton, in Minnesota, consists of flaggy limestones, with interbedded greenish shales, and is nearly 160 feet in thickness. In Iowa it consists of clayey shales and shaly and compact limestone, 200 feet in thickness. The reddish colours of the Rosenfeld shales and their apparently more complete separation from the limestone and want of interlamination with it, constitute the chief point of dissimilarity. The massive buff limestones of Selkirk and Stone Fort in Manitoba, resemble the Rosenfeld bed in character, and are known by the evidence of fossils to represent the Galena.

The sandstone, or rather unconsolidated sand-bed, which is the next underlying member of the section, has already been described as precisely resembling the typical St.

¹ From paper by J. H. Panton, Manitoba Hist. and Lit. Soc., Trans. 15, Session 1884-85.