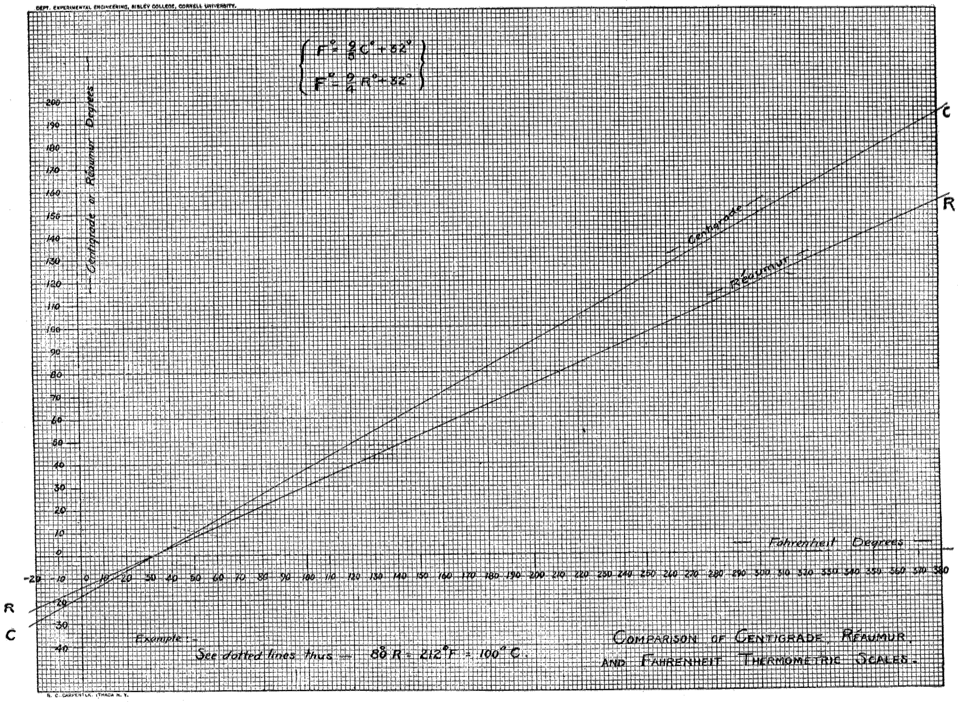
cavities. The use of the pneumatic chisel has made it possible to remove the matrix from such cavities, with but little injury to the specimen. The tendency to chip off thin edges with flakes of the matrix is also avoided.

Skill in the use of these tools is readily acquired. By adapting the size of the chisel to the work in hand and gauging the amount of air admitted to the tool by means of a push-button throttle valve, the stroke can be reduced so that a scale may be removed from the most delicate surface.

E. S. RIGGS.

FIELD COLUMBIAN MUSEUM.



THERMOMETRIC READINGS.

HAVING had frequently occasion to transfer thermometric readings given in one of the common systems, Centigrade, Fahrenheit and Réaumur, into one of the others, the accompanying diagram has been developed, which affords a convenient and rapid means of such transformation, and is adequate, provided a high degree of accuracy is not desired. The relations between the three systems are given by the following formulæ:

$$F.^\circ = \tfrac{9}{5}\,C.^\circ + 32^\circ = \tfrac{9}{4}\,R.^\circ + 32^\circ.$$

Fahrenheit degrees being plotted along a horizontal axis, and Centigrade or Réaumur degrees along a vertical axis, the graphs of the two equations above give two straight lines, as shown, from which, having given a reading in one of the systems, the corresponding reading in either one of the other two may be obtained.

Thus to find the equivalent of 80° R. the horizontal from the 80° division on the vertical axis is followed to its intersection with the line marked Réaumur, thence downward where the corresponding Fahrenheit reading (212° F.) is found on the horizontal axis; or upward to 'Centigrade' line and thence horizontally to left where the corresponding Centigrade reading (100° C.) is found on the vertical axis.

Both lines cross the horizontal, or Fahrenheit, axis at the same point, 32°; the Réaumur line having a slope of $\frac{9}{4}$, the Centigrade line a slope of $\frac{9}{5}$.

The diagram is capable of being extended as far as may be desired, and by shifting the origin of coordinates and choosing a suitable scale of magnification, almost any desired degree of accuracy may be obtained for readings along any given part of the diagram.

S. W. Dudley.

Sheffield Scientific School,
Yale University,
February 7, 1903.

DISCOVERY OF DENTAL GROOVES AND TEETH IN THE TYPE OF BAPTANODON (SAURANODON) MARSH.

Through the courtesy of Dr. C. E. Beecher the writer has recently enjoyed the privilege of studying the types in the Yale Museum on which Professor O. C. Marsh based the description of *Baptanodon natans* and *B. discus*.

The discovery * of teeth in the jaws of an Ichthyosaurian (No. 603) belonging to the collection of fossil vertebrates of the Carnegie Museum, led the author to believe that dental grooves, if not teeth, were present in the type of the genus *Baptanodon*.

Only a little preparation was necessary to demonstrate the existence of well-developed dental grooves on both upper and lower jaws, and just outside of the dental groove, imbedded in the matrix surrounding the rostrum of No. 1952† (type of the genus), a small tooth was discovered. This tooth is Ichthyosaurian in character. The enameled crown, however, is perfectly smooth, there being present no such longitudinal striæ as those observed on the teeth belonging to No. 603 of the Carnegie Museum. The complete preparation of No. 1952 would undoubtedly reveal other teeth. Professor Marsh's statement, that 'the jaws appear entirely edentulous and destitute even of a dentary groove,' was doubtless due to the imperfectly prepared material upon which he based his first description.

The presence of teeth in the type of *Baptanodon*, as well as their existence in two specimens preserved in the collections of this museum, clearly demonstrates the fact that American Ichthyopterygians possessed teeth. This fact, now firmly established, makes it still more difficult to separate the genus *Baptanodon* from the closely allied European form *Ophthalmosaurus*, and unless other distinguishing characters can be found they will necessarily have to be considered as generically identical. *Baptanodon* would then become a synonym of *Ophthalmosaurus*.

In my first paper I provisionally proposed the new genus *Microdontosaurus*, using as the type No. 603 of the Carnegie Museum collections. I then distinguished this genus from *Baptanodon* by the supposedly edentulous character of the latter. Since, however, *Baptanodon* has been conclusively demonstrated to have possessed teeth *Microdontosaurus* must be abandoned as a synonym of *Baptanodon* or *Ophthalmosaurus*.

Since some time must necessarily elapse before the publication of the final paper upon which the writer is now engaged, it has been thought best to call attention to the discovery of teeth in the type of the genus *Baptanodon*, which has been considered edentulous for nearly a quarter of a century.

Charles W. Gilmore.

Carnegie Museum,
April 4, 1903.

* 'Discovery of Teeth in Baptanodon, an Ichthyosaurian from the Jurassic of Wyoming,' Science, N. S., Vol. XVI., No. 414, December 5, 1902, pp. 913–914.

† Catalogue number of the Yale Museum.

THE BITTER-ROT FUNGUS.

In 1854 Berkeley (*Gardener's Chronicle*, p. 676) described a fungus, *Septoria rufomaculans* n. sp., growing on grapes. He renamed this in 1860 ('Outlines of British Fungology,' p. 320), calling it *Ascochyta rufomaculans* Berk. In 1879 von Thümen ('Fungi Pomicoli,' p. 59) placed this fungus in the genus *Glœosporium* and it then became *Glœosporium rufomaculans* (Berk.) von Thümen. In 1856 Berkeley (*Gardener's Chronicle*, p. 245) described a fungus causing a rot of apples, naming it *Glœosporium fructigenum* n. sp. This is the fungus which is the cause of the bitter-rot disease of apples which has caused such extensive damage to apple crops for many