areas of extinction have been areas where the old river-courses have changed or dried up; and these, according to Powell and Dutton, are comparatively few. An interesting line of research suggests itself here, which lack of material may prevent at present, upon the divergence of structural characters after the separation of the eastern and western fauna by the Rocky-Mountain system.

Professor Marsh's paper upon birds with teeth contains little that did not appear in his monograph, 'Odontornithes:' it is, in fact, an abstract of that volume, with the omission of many details of structure. There have been added, however, several characters to Archaeopteryx, which the author himself discovered upon the European specimens. It is an astonishing fact, worth mentioning here, that in many foreign museums it is still considered more important to preserve these specimens intact than to publish the rich truths they might reveal under a careful use of the hammer and chisel.

INTELLIGENCE FROM AMERICAN SCIENTIFIC STATIONS.

GOVERNMENT ORGANIZATIONS.

U. S. geological survey.

Rocks from Oregon. — During the field-season of 1883, Mr. Frank Wood, a stone-cutter in Albany, Or., contributed to the Cascade-Range collection of rocks several specimens of stone used extensively in that part of the country for building and ornamental purposes. They were examined by Mr. J. S. Diller, and proved to be of unusual interest, not only on account of their economic value, but also for their bearing upon the geological history of the Cascade Range.

Among them was an eruptive rock, which is quarried twenty miles east of Albany, on the western slope of the Cascade Range, and which presents an ancient aspect. The composition of this rock is that of a diabase with an admixture of rhombic pyroxene; but in its general facies and structure, as well as in the character of its alteration products, it is closely related to the gabbros. Rocks of the same character, high up in the mountains, are abundant a short distance south-west of Mount Hood. While it has long been known that the Cascade Range is built up chiefly of recent lavas, it is becoming more and more evident that eruptions of gabbroic and granitic rocks must be admitted as important elements in its construction.

On the Willamette River, eight miles from Albany, a sandstone is quarried which belongs to the tertiaries of the Willamette valley, and, with the exception of the cementing-material, is composed wholly of volcanic matter. When first taken from the quarry, it is said to be soft, and easily carved into any desired shape. Upon exposure, it becomes hard and more durable. This change in its physical character, so far as can be judged from the hand specimen in the collection, appears to be connected with a peculiar alteration in its cement. The unaltered sandstone, when held in such a position as to reflect the light from its surface, is seen to have a peculiar shimmer, which, upon closer examination, is found to come from the brilliant cleavage-surfaces of the well-crystallized calcite which forms the cement. The rock splits quite readily in three directions. Following these lines of easiest cleavage, a small rhombohedron was split out of the sandstone, which showed the peculiar shimmer on all sides. With an improvised goniometer, the angles between the reflecting surfaces were measured, and found to be the regular cleavage-angles of calcite. In the thin section it could readily be seen that the calcite cement had the same optical orientation throughout. There can be no doubt that all the calcitic cement within the hand specimen belonged essentially to the same crystal. Professor Irving has shown that siliceous cement in sandstone is very frequently arranged with reference to the crystallographic axes of the quartz-grains which it envelops. It is much less common, however, to find the cement arranged as in this Albany sandstone. That carbonate of lime can arrange itself in one crystal, when mixed with from fifty to sixty per cent of sand, is clearly shown by the well-known crystals from Fontainebleau and Nemours, in France. Under atmospheric influences, the calcitic cement appears to be replaced by one which is in large part siliceous. The boundaries of the grains of sand become less distinct, and the cement assumes a spherulitic structure. To be able to assert positively that this peculiar structure in the cement of a sedimentary rock is due to weathering, our observations with the microscope need to be supplemented by an examination of the rock *in situ* at the quarry. The rock, therefore, becomes more durable, being insoluble, and is much less liable to injury from great and sudden changes of temperature.

Krakatoa dust. — A report by Mr. Diller, on the Krakatoa dust submitted to him for examination, has been completed. Reusch determined the rhombic pyroxene in the Krakatoa dust to be bronzite, while Daubree, Renard, and others have asserted that it is hypersthene. Although Mr. Diller obtained the dust from four different localities, enough was not received to furnish sufficient rhombic pyroxene for chemical analysis to settle the question; and without a Nörrenbergs apparatus, or a microscope with a larger field than the one used by Mr. Diller for the observation of optic axial figures, so that the char-