lived a hundred million years ago, more or less, in the Cretaceous age.

The skeleton around which the restoration has been built was collected in the Red Deer region of Alberta, Canada, by Barnum Brown of the American Museum of Natural History, and was purchased by the Peabody Museum. Almost all the bones were recovered.

When the skeleton was assembled at the Peabody Museum it was placed in a walking posture, its feet set to match certain three-toed dinosaur tracks on slabs of rock in the region where it was found; these tracks may possibly have been made by the same or a similar species.

Leaves Framework Visible

The restoration of flesh and skin was undertaken for one side only, leaving the bony framework visible from the other side. The mount thus gives a graphic illustration of how scientists reconstruct the probable living appearance of a long-extinct animal.

Each muscle was modeled separately in plasteline, thus building up the entire contour of the head, body, limbs and tail. Part of a Monoclonius skin has been recovered, and is now in the American Museum of Natural History. Using this as a pattern, a mould was prepared, showing the studding of small bony plates that apparently gave the creature a partial armoring. Into this the plastic materials for the skin were pressed.

Reptile Color

After the restored skin was mounted on the specimen, the whole creature was painted a sort of general "reptile color," following the hues of animals of that class living today, but without imitating any particular one of them.

Monoclonius, in spite of his formidable appearance, was a vegetarian, and probably not at all fierce. The wide frill that projected from the edge of his skull over the back of his neck afforded that vital region some protection, and possibly his forward-projecting horn could be used as a defensive weapon. There were four additional horn-like appendages to the bony skull-frill, whose usefulness, if any, has not been determined.

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The great Nassak diamond, from the eye of the god Siva in an Indian temple, is now in a cabinet so protected that a blow to the glass case causes the gem to sink into a drill-proof safe and at the same time a flood of tear gas is released.

BACTERIOLOGY

Scientists Isolate Bacteria That Cause Stone Decay

Inoculation of New Structures Expected to Produce Castles Centuries Old in Just a Few Years

AMERICAN millionaires who were wont to import picturesquely mouldering English castles and abbeys and plant them on their country estates will not need to pursue that strange traffic any more—that is, supposing any representatives of that curious genus survived the Great Ice Age of 1929. Thanks to the researches of four English scientists, they will be able to build their castles out of new stone, inoculate them with the right kind of germs, and in a short time have them in as venerable a state of decay as though they had been standing in an English drizzle since the Wars of the Roses.

The current Philosophical Transactions of the Royal Society of London contain a study of the relationship of micro-organisms to the decay of stone by Sydney G. Paine, Frank V. Lingood, Freda Schimmer and Thomas C. Thrupp. It might, in fact, be termed a study of the bacterial diseases of building stones. This team of scientists have isolated not less than 58 strains of bacteria from decaying stone, have planted cultures of some of them on new stone fresh from the quarry, and have made at least a good beginning of an understanding of the means by which bacteria help to ruin building materials.

The stones they examined came from some of England's most ancient edifices; castles whence crusaders once rode, abbeys antedating the Reformation, London buildings erected by Christopher Wren. Bacteria were found not only on their surfaces, but buried in their hearts as much as two feet deep. The organisms appear to be related to those of the soil, yet they constitute in a way a microflora of their own.

Physiologically, two things are significant about their biology. Many of the strains isolated produce carbon dioxide, and carbon dioxide is a chemical enemy of all limestones and marbles. There were also several strains of the bacteria that are able to oxidize sulphur, getting at least a part of their energy-food out of the element, indigestible to higher organisms. That means that such bacteria will weaken any rock in which sulphur or sulphur compounds form any significant part; it constitutes them an especial enemy of any plaster or stucco containing gypsum, which is calcium sulphate.

But that is not the only, or indeed the chief, capacity for trouble possessed by these sulphur-eating bacteria. The investigators found that their cells secreted a mucilage-like stuff, which accumulated in the pores of the rock. Now mucilage, or any similar colloid, soaks up water when it gets a chance and swells most amazingly, and in swelling exerts a force little short of explosive in its disruptive power, even though it makes no great bang or fuss about it. Bacterially deposited mucilage beneath the face of a stone could easily split off flakes year after year, until in the course of time you would have as dilapidated a ruin as any nineteenth-century novelist could wish.

Science News Letter, July 8, 1933

PHYSIOLOGY

Stomach Ulcers May Result From Lack of Vitamin A

EVIDENCE that stomach ulcers may result from diets lacking in vitamin A was presented to the American Society for Experimental Pathology by Dr. Ira A. Manville of the University of Oregon Medical School.

Dr. Manville reported that white rats fed a diet deficient in vitamin A developed stomach ulcers and erosions. Nearly two-thirds of all the animals fed on diets that were deficient to various degrees in the vitamin showed these sores. As the vitamin deficiency became more severe, the number of animals affected became greater until nearly 100 per cent. were found to have ulcers.

Vitamin A, found in liver, butter, egg yolk, cheese, cod liver oil, spinach and the leaves of plants, is necessary to promote normal growth. In its absence growth is stunted and a severe