

DENTISTRY

False Teeth Better When Magnetized

► FALSE TEETH that stay in place and work efficiently even when chewing peanut butter sandwiches are reported by Dr. Hyman Freedman of New York in the *Journal of the American Dental Association* (Sept.).

Secret of the stability of these dentures, as dentists call them, lies in small magnets put in just the right place in upper and lower sets. Because the magnets have like poles, they repel each other, Dr. Freedman explains. As a result, each time the teeth are closed for chewing, they are gently settled.

Satisfactory use of "hundreds" of such sets of false teeth over a period of years is reported by Dr. Freedman.

Science News Letter, September 12, 1953

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Thermothanasos

► DINOSAURS DIED off leaving no heirs of their line to dispute with the upstart mammals their once-held dominion of the earth, not because the climate became too cold but because it got too hot for them.

The heat may have killed some of them directly, but more likely it wrought their extinction indirectly, through making the males incapable of reproduction.

This thesis, radically contradictory to the older doctrine that the great reptiles were simply frozen out by some long-gone ice age, is advanced by Prof. Raymond R. Cowles of the University of California at Los Angeles. He has devoted a good deal of research to the phenomena of heat-responses in modern cold-blooded animals, especially reptiles, and he reasons by analogy with what he has actually observed under field conditions.

Years ago, Prof. Cowles came to question the time-worn simile, "happy as a liz-

ard on a hot rock," because the lizards he had seen on hot rocks were distinctly not happy. To begin with, lizards (or snakes) are rarely seen on rocks that are really hot.

Few reptiles are to be seen in the full glare of the noonday sun in the desert. They are down in their burrows, or hiding in shady spots. The time for them to be abroad is in the forenoon and late afternoon, when the sand and rocks are merely pleasantly warm.

The California zoologist went beyond simple field observations. He penned reptiles of various kinds on areas of rock and sand and kept them there as daytime temperatures rose to their simmering maxima. The poor creatures showed signs of increasing distress, ending in prostration. If he did not let them escape in time, they died.

The point is that these so-called cold-blooded animals become more hot-blooded than warm-blooded animals when they are exposed to too much heat. They do not have the thermo-regulatory mechanisms possessed by the later-arriving, more highly evolved mammals and birds. If the hot rock changes from a nice, warm basking-place to a 120-degree griddle, they die of what amounts to an extreme fever.

Even without waiting for that, however, a male reptile, with its sex glands carried within its over-heated body, can suffer heat-sterilization if caught by a too-high temperature. Crocodilians and sea-turtles keep safely cool in the water; terrestrial snakes and lizards are small enough to find saving shelter. But the huge, lumbering saurians of the late Cretaceous, kept constantly just a little too warm by an endless August of world-wide tropical conditions, may very well have become incapable of fertilizing their mates' eggs.

So, like many another ponderous aristocracy, they may well have lost their world simply through lack of offspring.

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MEDICINE

TB Vaccine Tested

► A NEW vaccine against tuberculosis is undergoing tests at the University of Bristol. Results so far in tests with guinea pigs show that it is as good as the B.C.G. vaccine now widely used to give humans protection.

These results and the method of making the vaccine are reported by Dr. C. N. Iland in *Lancet* (Aug. 8).

The new vaccine is made from virulent human tuberculosis germs killed by treatment with urea, a nitrogen-containing compound made in the body by decomposition of proteins, and also produced synthetically. The urea can be removed from the vaccine without destroying the vaccine's protective power.

The vaccine was made to avoid certain disadvantages of B.C.G. These disadvantages are lack of stability and preparation

from a living, though weakened, strain of TB germs. These weakened germs, Dr. Iland points out, may differ in ability to give protection against virulent tuberculosis germs.

The urea kills the tuberculosis germs and also other germs, thus acting as a preserving and sterilizing agent for the vaccine.

When the urea-killed germ vaccine, or u.k.v. for short, was given to guinea pigs, they showed no signs of tuberculosis. After a year the animals were sacrificed and the bodies examined. There was no sign of tuberculosis infection.

Further tests were made by vaccinating guinea pigs and then giving doses of virulent human tuberculosis germs. In these, the u.k.v. vaccine showed itself as good as but no better than B.C.G.

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