

Yellowstone Bighorns Fight

The younger generation among the bighorn mountain sheep rise up against their elders, as do youth of better-known species. But they do have the virtue of being straightforward about it, and of fighting fair. So says M. P. Doyling, a government engineer, who describes an interesting battle he saw a short time ago in Yellowstone National Park.

"Although they were not more than fifty feet from the edge of the road, they didn't pay the slightest attention to the car I was in, and I sat for about fifteen minutes and witnessed a most unusual and interesting sight," he reports.

"There were two young rams fighting an old and somewhat heavier one. What surprised me most was their method of attack, in which they were 'true gentlemen.' They would stand about twenty feet apart and both start at precisely the same time, coming together, always directly head-on. Only after one has seen the size of the horns on the little animals and knows the speed at which they travel can one imagine the terrible shock it must be to them at each such encounter.

"I expected to see them butt each other in the sides and rear, but in every instance they waited for the other to get set and then always come head-on. After each such encounter they would stroll around for a minute or two, sometimes even taking a few mouthfuls of grass, before going through exactly the same performance again. If one tried to lie down, as did happen several times, the other would be over immediately and bother him until he got up.

"In one encounter one of the rams was on higher ground than the other, but, apparently, to counteract this condition, the one on the low side reared up on his hind legs and came down just in time to hit the other square in the center between the horns. After a bit, one of the young rams strayed away a couple hundred feet and, after pawing away the dirt on the side hill, became, for the time being, an interested spectator. The other young one kept at the old ram, however, and every minute or two they would have another encounter.

"I doubt very much if the old ram could stand this relay of encounters for a great period, as he was panting heavily and blood was coming from his nose when I left the scene of action."

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Cause of Lost Appetite

Parents with offspring that have to be forced to eat will be glad to know that scientists are on the trail of the reasons back of lack of appetite.

Prof. J. C. Drummond, well-known vitamin specialist, and Dr. S. K. Kon of University College, London, have found that there is a close relationship between the amount of vitamin B in the diet and the total amount of food taken. Pigeons fed a diet adequate in all respects except that it lacked vitamin B lost all appetite for the meals presented to them. Another group of pigeons kept under observation as controls, fed as much food as they wanted along with an ample ration of vitamin B, grew healthily and retained normal appetite. A third group, fed only the amount of food that the first group actually ate plus a plentiful supply of the vitamin in question, showed loss of weight due to slight starvation.

From their results, Professor Drummond and Dr. Kon concluded that the loss of weight that is always associated with lack of Vitamin B is simply caused by partial starvation; the pigeons lose their appetites and refuse to eat the deficient food, and hence lose weight.

Since vitamin B occurs in only minute quantities in different foods, its presence becomes of increasing importance. Consequently, an elaborate study of this question has been taken in hand at the Chemical Department of St. Thomas' Hospital Medical School, London, by Dr. R. H. A. Plimmer and his colleagues. They tested a number of cereals by feeding them to pigeons for a long period. They found that none of the cereals examined contained such a rich amount of vitamin B as dried yeast. Wheat, barley and rye contained more vitamin B than maize or oats. These investigators, like Professor Drummond and Dr. Kon, found that young animals need more vitamin B than adults, and that the first important symptom is loss of appetite, which leads to loss of weight.

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Investigations indicate that at least one-fourth of the children in the United States are malnourished.

The whale can take enough oxygen under water to stay an hour or more, and then can come to the surface rapidly without the discomfort that attends the coming up process for deep-sea divers.

Are Your Pearls Genuine?

By LEWIS RADCLIFFE

Mr. Radcliffe is U. S. Deputy Commissioner of Fisheries.

You may have longed for a simple test to determine the freshness of your breakfast egg without having to delve into its innermost secrets. Your longings have been slight as compared with the longings of those who have invested large sums in pearls and who wish to know definitely whether they were natural (sometimes called genuine) pearls or culture pearls or possibly only imitation pearls. You will want to do a bit of investigating before investing, as there is a very wide difference in the value of those classes.

True pearls derive their origin from the accidental introduction of an irritating foreign substance into certain cell tissues of the pearl oyster or other pearl-bearing mollusc. This foreign substance—parasitic worm, water-mite, grain of sand—which finds its way by accident into the tissues of the oyster becomes the nucleus of a natural pearl, the most prized and most valuable of the three classes. The cells of the oyster proceed at once to imprison the foreign substance, surrounding it with layer upon layer of nacreous material, of the same iridescent character as the inside shell of the oyster.

Since the discovery of the origin and the growth of natural pearls, man has been striving to produce these results by artificial means, that is, to grow culture pearls. Simple as the process may seem, it was not until 1894 that Kokiehi Mikimoto in Japan developed a satisfactory method for inducing the development of culture pearls. The success of this venture is attested to by the fact that he was able to produce an annual output valued at \$600,000 in 1921.

Imitation pearls are a synthetic product manufactured in large quantities from pearl essence—a product derived from fish-scales. Formerly the source of supply was a small European minnow, the iridescent effect being discovered by accident by Jaquin, a French rosary maker, about 1656. Jaquin noted that the water in which the fish had been washed contained a highly lustrous substance which, when concentrated and applied to small globes of alabaster, produced remarkably good imitations of pearls. During the World War, the European source of supply of fish scale essence or pearl essence was cut off. Experiments with the scales of native American fishes resulted in the development of an entirely new industry in this

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Are Your Pearls Genuine?

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country. Some two million pounds of the scales of such fishes as our north Atlantic sea herring and river herring are used annually, the uses for fish scale essence are steadily increasing and the cost of producing excellent imitation pearls is decreasing. Large sheets of celluloid are also given a coating of imitation mother-of-pearl and used as backs for brushes and many other toilet articles.

But to return to the question of the freshness of the egg or rather to means for distinguishing between the three classes of pearls under discussion, as pearl essence is usually applied as a thin coating little difficulty will be experienced in ascertaining whether your possession is an imitation pearl. The celluloid coating can be cut or peeled off or dissolved off with amyl acetate or acetone.

As between culture pearls and natural pearls the problem of differentiation is a most difficult one. Yet, because of the difference in sales value, one buying a natural pearl wishes to assure himself that he is getting what he is paying for. In perfection of form and lustrous beauty there are no distinguishable differences. There is no chemical difference, the same cells of the oyster function after the same manner in producing a pearl. When the culture pearls began appearing there was considerable litigation in France and the courts concluded that culture pearls possessed all the specific characteristics of real pearls and their quality could not be questioned.

Since 1923, a small group of Japanese investigators acting on the suggestion of Professor Nakamura have been studying the problem, and have recently published the results of these investigations in the Proceedings of the Imperial Academy of Tokyo, Japan.

By the use of the X-rays they were able to distinguish between culture pearls and natural pearls. In the former, a perfectly spherical nucleus of shell is introduced into the oyster and around this the oyster builds the pearl. An examination of natural pearls, of culture pearls, and of the nuclei used in culture pearls by the expert in X-ray analysis and a comparison of the patterns produced for different orientations of the primary X-rays revealed valid differences between the two classes of pearls. It will undoubtedly be comforting to many to know that a method of differentiation has been evolved.

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