

DESCRIBES EXPERIMENT MADE ON WESTERN HERD

Infested and Non-Infested Copra Meal Have Equal Food Value

Cocoon meal made from copra cakes infested with insects is equal in feeding value for dairy cattle to meal which is not infested, Professor R. W. Doane of Stanford University, California, stated at a session of the American Association of Economic Entomologists, yesterday afternoon, telling of experiments made on behalf of the dairies of the Pacific coast.

"Cocoon meal made from copra cakes, which are a by-product in the manufacture of copra oil," said Professor Doane, "is becoming a favorite cattle food particularly in dairies on the Pacific coast. Large quantities of these copra cakes, which had reached the United States shortly after the close of the war, were found to be badly infested with insects, the most common species being the cosmopolitan cigarette beetle, *Lasioderma serricorne*. The question as to whether these insects in any way affected the food value of the cocoon meal soon arose and plans were made to carry on feeding experiments to answer this question.

Two Groups Used in Test

"A group of twenty Holstein cows was selected and divided into two sections of ten cows each. In addition to their regular basic ration, one group known first as the test herd received three pounds daily of the cocoon meal that was heavily infested with insects, group two known as the control herd received the same amount and kind of food except that the meal was from the uninfested lot of copra cakes. At the end of fourteen days the feed for the two herds was changed about and the experiment was continued for eight days longer.

An assistant was present at each of the milkings and checked the weighings made by the milker in charge of the herd, and took individual samples from each cow at each milking, and in addition to these he took a composite sample for each herd.

Insects Made No Change in Quality

"A close watch was kept of these herds and it was found that they remained in normal condition in every respect throughout the experiment, and no difference could be detected in the way in which the cows ate or cleaned up the food made with the two different meals. An analysis of the milking records shows that the cocoon meal made from the copra cakes that were badly infested with insects had no effect whatever on the amount of milk produced by the cows to which it was fed. The chemical study of the milk showed that there was no difference in the protein content or butter fat or the total solids, whether the cows were receiving the infested or the uninfested meal.

"The conclusion reached was that the presence of these beetles in the copra cakes from which the cocoon meal was made had no effect whatever on its value as a food for dairy cattle."

PROF. CHAPMAN RAPS INTELLIGENCE TESTS

The current tendency to measure intelligence and school achievement by "intelligence tests" and "school tests," and then by the difference between the standing of an individual in his intelligence tests and his school tests, to estimate the extent to which he is taking advantage of his school opportunity, was criticized by Professor J. C. Chapman of Yale University before the American Psychological Association yesterday morning.

"The general idea is so attractive," said Professor Chapman, "and the results, if true, are so useful, that psychologists and schoolmen have been captivated by the simplicity of a definite figure which promised to give such valuable information with regard to the pupil and the school. Provided sufficiently accurate differential instruments are available, no one doubts that the procedure is most useful, but in the absence of such instruments I have been much shocked by the rigid manner in which the differences in intelligence level and school level, resulting from single tests of each, have been interpreted."

"Claims Cannot be Justified"

Professor Chapman examined the logical basis of such a procedure, and showed by statistical analysis its usual unreliability, proving, as he said, "the futility of a great deal of superficially very thorough and careful work that is being done in many laboratories and schools." Advocating careful statistical analysis of the groundwork of the testing movement, he concluded with the statement that "apparently many claims made by authors and more by business houses cannot be justified at the more exacting bar of statistical truth."

PASS RESOLUTIONS FOR TWFOLD CONSERVATION

Urge Cooperation between Canada and United States

Resolutions making for international conservation were adopted by the Council of the A. A. S. Thursday morning, after having been passed by a committee of the A. A. S. called the Committee on Reciprocity in Science between the United States and Canada. This committee consisted of Professor E. L. Nichols, of Cornell, Chairman, Dr. J. C. Merriam, Professor F. D. Adams, Professor J. P. McMurrich, Professor T. C. Chamberlin, and Professor J. C. Fields.

The resolutions follow:—

1. In view of the fact that the American Association for the Advancement of Science is international in its scope and interests the Committee on Reciprocity in Science between the United States and Canada recommends that the National Academy, the National Research Council, the Royal Society of Canada and the Honorary Council for Scientific and Industrial Research be requested to exert their influence in inducing the governments concerned to consider the advisability of taking such steps as may be necessary for the better conservation of marine mammals and the further study of their life histories.

2. The Committee on Reciprocity in Science between the United States and Canada heartily supports the plan for complete conservation of certain areas, especially those which contain peculiarly interesting representations of floras and faunas and natural features of special interest in the educational sense, or subjects which may be desired for conduct of future researches. The definition of this principle is not to be confused with commitment in support of specific areas without careful study of all factors including those which relate to the proper balance between conservation and utilization.

The first resolution had to do with the need of protecting seal herds, whales, etc., and the second, with the need of conserving national park areas.

DR. RIDDLE EXPLAINS THE ORIGIN OF SEX

Result of 11 Years Study Is Outlined to Zoologists

Important investigations on the physiological basis and cause of sex, undertaken by the Carnegie Station for Experimental Evolution, at Cold Spring Harbor, L. I., were described by Dr. Oscar Riddle, research associate, before the genetics section of the American Society of Zoologists yesterday afternoon.

Dr. Riddle stated that when pigeons are induced or forced to lay eggs in rapid succession during prolonged periods, they produce toward the end of the period of "reproductive overwork" a great many more females than males, and that simultaneously the yolk or true ovum of the egg becomes larger. "The larger ova," continued Dr. Riddle, "are therefore the ones associated with the production of an excess of females. This high storage power of these female-producing ova has been interpreted to mean a lower oxidizing capacity of the female-producing ovum as compared with the smaller male-producing ovum.

Female Germ Larger Than Male

"Several kinds of evidence, none of which is perhaps wholly conclusive, have confirmed this view that a higher oxidizing capacity or metabolic level characterizes all of the stages of the male—ovum, embryo, and adult. And that, in fact, this original, persisting, and underlying difference in metabolism is the real physiological basis, distinction, and cause of sex.

"These studies, now conducted by the writer during eleven years, strongly indicate that the above-mentioned progressive increase in the size of the ova under 'reproductive overwork' is accompanied by both true and partial sex-reversals in many of these ova."

Dr. Riddle outlined the results of investigations of the action of the suprarenal glands during the ovulation period, and stated that these results sustained the view that the smaller size of the male-producing germ is an expression of a higher metabolic level than that found in the larger female-producing germ.

Award Scholarship Cup

Alpha Sigma Gamma, upperclassmen's honorary fraternity in the department of economics and business at the University of Idaho, is presenting a cup to the sophomore receiving the highest grades this year. The purpose of the cup is to arouse a deeper interest in the study of economics and to provide a stimulus and incentive for better scholarship.

Fire at University of Montreal

Just as the officials of the University of Montreal were beginning to pride themselves on the rapidity with which they had reconstructed the ruins resulting from a fire in November, 1919, the University was again gutted by fire. The fire, whose origin is unknown, caused damage which may reach three hundred thousand dollars.

PROF. JONES DELIVERS DISCOURSE AT MEETING

Discusses Causes of Change in Temperature of Meteorites

That meteorites and other shooting stars may not be so intensely cold before they reach the earth's atmosphere as has usually been supposed, but are probably only about as cold as "good cold ice-water," was indicated by Professor A. T. Jones, Associate Professor of Physics at Smith College, at a joint session of the American Physical Society and the American Astronomical Society, yesterday.

Shooting stars are small pieces of matter that come from distant regions of space, and are made hot by their swift flight through the thin layer of air that surrounds the earth. Most of them are burned up before they reach the ground. But once in a while one of them does reach the ground, and is then known as a meteorite.

Meteorites Not So Cold

It has usually been supposed that meteorites are intensely cold until they reach the air; that their temperature is, in fact, not much above the "absolute zero," which is about 460 degrees below zero on our common Fahrenheit thermometer.

When these meteorites reach the atmosphere of the earth, they are no farther from the sun than the earth is, explained Professor Jones. Now the earth receives a good deal of heat from the sun. Perhaps, he continued, the meteorites are after all not so cold as has usually been supposed. He presented the results of his recent study of "the temperature of a black sphere which is exposed to radiation from one direction," leading to the conclusion that when a meteorite reaches the earth's atmosphere it is really much warmer than has been supposed.

DR. MILLER ADDRESSES SECT. E AT RETIREMENT

Speaking on geology's debt to the mineral industry, Dr. W. G. Miller, Government Geologist of Ontario, in his address as retiring vice-president of the geographical and geological section of the American Association for the Advancement of Science, yesterday advised geologists not to become too academic, but to encourage the man who is inclined to carry on economic research in a scientific way.

A well-known trait in human nature, said Dr. Miller, is that when people become wealthy, especially if they have inherited their wealth and take on airs more or less aristocratic, they tend to look down on trade and tradesmen. The same characteristic is observed in geology. This science in the beginning owed much to those who were interested in the mineral industry. By showing that the science had important applications, theological and other prejudices that interfered with its progress were overcome.

Desire for Wealth Made Geology

During more recent years, he continued, geology has been much indebted to the mineral industry for its progress. Indeed, it would appear that comparatively little advancement could have been made in the pure science were it not for the fact that geology has received great support from governments, private corporations and individuals on account of its practical applications.

How little could have been known of the geology of that most interesting group of rocks, which occurs on both sides of the International boundary in the Lake Superior region, were it not for the occurrences in those rocks of the unsurpassed iron and nickel deposits and the wonderful stores of copper, silver and gold? The application of geology in the working of petroleum and natural gas has rapidly brought about a knowledge of the rocks with their relationships in many countries throughout the world.

NEW INSECT INFESTS PEPPER AND EGG PLANT

Dr. Alvah Peterson, Associate Professor of Entomology at the State University of New Jersey, told the American Association of Economic Entomologists, yesterday, of a new insect pest called the pepper maggot which has recently infested the fruit of pepper and egg plants in New Jersey. He cited this as a good example of the common saying among entomologists, "The insect of no importance today may become a serious pest tomorrow," and stated that to date no satisfactory means of controlling it has been found.

This maggot, explained Dr. Peterson, comes from eggs deposited by a bright yellow fly about the size of a house fly. The maggots live in the core of the pepper and destroy it. Infested peppers on the plants are difficult to distinguish from normal fruit.

This insect has never been recorded as injuring other plants of economic importance. It has been found on horse nettle heretofore. Why this pest should suddenly have decided to attack peppers and egg plants, is unknown.

BUSINESS EXECUTIVE DOMINATES SCIENTIST

Yesterday, in speaking of conservation of American inventions before Section K of the American Association for the Advancement of Science, J. G. Dudley, New York consulting engineer, brought forward a new subject for public discussion. He declared the average man of business in the United States to be "economically blind," and the average American superficial in analysis and decision. "The non-technical and untechnical lay-executive," he remarked, "still seeks to direct and dominate the activities of the scientist, engineer, specialist, and technician." In concluding, Mr. Dudley said:

"Unless financial and industrial America shall awake to the fundamental shortcomings, our boasted skill, genius and native ability will have to yield industrial supremacy to that thorough, plodding, technically-minded nation, which does recognize the incalculable value of 'new things'; of 'inventions'; of 'daring concepts'; of 'industrial visions,' and of 'progress' in general.



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