

of whatever degree of differentiation, is greatly needed.

In my discussion of "clone" as a suitable name for any group of plants or animals which has been formed from a single original individual by purely vegetative methods of reproduction, I suggested the restriction of the term to groups of genotypically identical individuals. Further consideration convinces me that this restriction is highly undesirable because it is impracticable. It would be quite impossible to know for a certainty that two twigs used as cuttings or cions from the same tree had the same genotypic constitution, and consequently there could be no security in the assumption that they were members of the same clone, if the definition given in my previous note should be maintained. I wish, therefore, to offer an amendment to that definition by striking out such restriction. The definition may then read: "Clone, a group of individuals traceable through asexual reproductions (including parthenogenesis when unaccompanied by genotypic segregation) to a single ancestral zygote, or else perpetually asexual." This definition puts the word "clone" on exactly the same footing as the expression "pure line," making it a purely genealogical term and involving no implication whatever as to the genotypic equality of the individuals included in the single clone.

GEO. H. SHULL

#### THE PRIBILOF FUR SEAL HERD

TO THE EDITOR OF SCIENCE: In SCIENCE of October 27, 1911, page 568, there appears an article entitled, "The Pribilof Fur Seal Herd, and the Prospects for its Increase," signed by C. H. Townsend, member of the Advisory Board of the Fur Seal Service.

Dr. Townsend in his article handles rather severely certain persons "whose opinions upon the subject are of little value." I cheerfully admit that I am one of the persons referred to, and I shall be equally frank to say that I am sorry Dr. Townsend feels the way he does, for at the bottom we both desire the same thing, namely, the rehabilitation and preservation of the fur seal herd.

A scientist who desires his opinions upon any subject to be of value must, above all, be accurate as to his facts. In his article Dr. Townsend tells us that "The hook-worm is one of the contributing causes to heavy annual losses among the young seals born on sandy areas."

In view of this statement, I would like to call Dr. Townsend's attention to the report of Walter I. Lembkey, agent in charge of the Alaskan Seal Fisheries, dated December 14, 1906 (page 274), printed as Appendix A to Hearings on House Resolutions No. 73:

Inquiries have been made recently of the Department concerning the present effect of *Uncinaria* on the seal pups, and it has been strongly intimated by certain persons that thousands of pups die annually from the ravages of this parasite, of which no report is made in the agent's report. The fact is that *Uncinaria* has not now, nor has had for several years past, any known existence on the islands. This statement is justified by actual and careful examinations during the last three years.

Also to the report of Harold Heath's "Special Investigation of the Alaska Fur Seal Rookeries, 1910" (same publication as cited above, page 1223):

In earlier times the ravages of the parasitic worm *Uncinaria* were especially noticeable on the Tolstoi sand flat and portions of Zapadni; but in recent years, due to shrinkage of the herd, these areas have been abandoned. Very few cases were noted by Dr. Chichester in 1909, and not one was detected this year. The dead pups dissected were seemingly in a perfectly normal condition, their emaciated appearance and empty alimentary canal indicating death from starvation.

On the question of the closed season Dr. Townsend is especially severe. He tells us that a cessation of slaughtering seals would be "positively dangerous," because of the rapid increase in fighting males. I once made the suggestion to him, favorably received at the time, that as the old bulls haul out on the breeding grounds some ten days in advance of the females, it would be rather a simple matter for the agent in charge and his Indians, armed with a few modern rifles, to dispose of these dangerous surplus bulls. But a far

better answer is found in the fact that years before the club and the gun were used upon the seals the herds thrived and increased, and the more powerful bulls fought their way into the breeding grounds and did their part in creating a strong and virile race that was numbered by millions instead of the few thousands that are left to-day.

The tide of life on the fur islands has reached its lowest ebb. Dr. Townsend himself says that "the stock of females has reached the lowest limit in the history of the Islands." The objectionable persons, of whom I am one, have based their beliefs and opinions not on the conflicting reports of scientists, but on the broad principle that when any species of wild life has become so depleted as to be in danger of extinction, the best remedy is to let it absolutely alone. In this connection I wish to quote President David Starr Jordan, of Stanford University, and also a member of the Advisory Board of the Fur Seal Service:

With men, as with animals, "Like the seed is the harvest." In every vicissitude of race of men or of breed of animals, it is always those who are left who determine what the future shall be.

All progress in whatever direction is conditioned on selective breeding. There is no permanent advance not dependent on advance in the type of parenthood. There is no decline except that arising from breeding from the second-best instead of the best.

The survival of the fittest in the struggle for existence is the primal moving cause of race progress and of race changes. In the red stress of human history, this natural process of selection is sometimes reversed. A reversal of selection is the beginning of degradation. It is degradation itself.

Natural conditions should be the rule, and all killing of selected males for commercial purposes should absolutely cease until the tide of increase in the fur seal herd has once more set toward the flood.

MARSHALL McLEAN,

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NEW YORK,

January 2, 1912

### QUOTATIONS

#### THE PRESIDENCY OF THE UNIVERSITY OF MONTANA

For the first time the state board of education permits me, although solely through newspaper reports, to have a statement of considerations which influenced its members in voting "not to renew Dr. Duniway's contract at the close of the year, September 1, 1912."

To the extent that official propriety permits me, and without entering into controversies with my superior officers, I feel obliged to call attention to certain features of this report.

The basis for the action of the state board is said to be primarily a report of the university committee, following an investigation of university affairs made in Missoula on October 22 and 23. It should be borne in mind that this so-called investigation was made without notice to the president of the university, and at a time when he was out of the state. The summing of members of the faculty, of alumni and of students, was prearranged by the chairman of the committee. Under the circumstances there was no opportunity, and there seems to have been no expectation to extend the scope of the inquiry to make it fairly representative of the prevailing opinions and the essential facts which ought to have been considered. Any fair-minded person is entitled to draw his own conclusions concerning such a situation.

It will conduce to clearness if the report of the committee, as published, is briefly considered, point by point. Its essence is found in these statements: First: "We find there is a spirit of unrest and dissatisfaction existing between the student body and the president"; second, "There is dissatisfaction between the alumni and the president"; third, "A lack of cooperation and coordination existing between the president and a large portion of his faculty"; fourth, "We find that the president is exceedingly unpopular among the high school students of the state." A fifth point is added, said to be derived from the general discussion, "That President Duniway does not visit classrooms to ascertain at first-hand the