THE FUR-SEAL INVESTIGATION OF 1897.

THE result of this season's work has mainly been to emphasize those of previous years, and particularly of 1896, and to show the futility of the suggestion that it is possible to preserve the numbers of the seals so long as pelagic sealing is continued. Careful examination of the breeding grounds and a count of the young made in several places shows that there has been a decrease of not far from fifteen per cent. among the females and thirty per cent. among the killable males. This loss is practically in accordance with the conclusions reached by the American commissioners in 1896, when the total number of seals was computed at between 450,000 and 500,000. It is known that after the census of seals was made 35,000, not less than eighty per cent. of them females, were killed at sea and that certainly 16,000 pups starved in consequence of pelagic sealing in Bering Sea. If to this is added the loss from natural causes, which is believed to be high, it is easy to see that a decrease of fifteen per cent. would be well within the mark.

To one familiar with the seals the loss shows itself in many ways; the seals playing in front of the breeding grounds, once so numerous and still to a considerable extent present in 1896, have nearly disappeared; places filled by breeding seals last year were this season occupied by old males alone, who waited in vain for any females, and localities which were inaccessible to the investigator last summer could easily be reached this summer. The average number of females present in a harem was also found to be smaller this year than last, and wherever it was practicable to count the live pups there was in every case a falling-off from the figures of 1896. The greater proportional falling-off of the bachelors, or killable males, was expected, and is the result of the pelagic killing of 1892–94, during which time over 100,000 seals were taken on the nortwest coast and 31,000 in Bering Sea.

The evil results of the small quota of seals killed on the Pribilof Islands between 1892–95 are seen in the superabundance of full or nearly full-grown males, hundreds of these being turned away from almost every drive. So numerous have the males become that should it ever prove possible to bring about a cessation of pelagic sealing it will be necessary to kill several thousands of the old bulls, whose relatively great numbers led to continuous fighting throughout the past summer, with a consequent disturbance of the breeding grounds and loss of many females.

Up to August 20th none of the yearlings branded as pups last year had made their appearance, nor was it expected that many of them, possibly not any, would be seen this year. This is partly for the reason that the yearlings arrive late and also because all the seals branded were females and few of these come on shore until they make their appearance on the breeding grounds as two-year olds. As probably not more than thirty per cent. of seals born reach the age of two years, it will be seen that comparatively few of the 377 pups branded may be expected next year. Six of the eleven adult females branded as an experiment were, however, seen, a large number when it is remembered that not over half of the females are on shore at any one time, that the total number of females is over 100,000 and that they are scattered over eight miles of shore. In every case the brands were plainly visible, although the seals had shed their coats after the branding was performed, and there is every reason to believe that branding is a success. It is scarcely necessary to say that reports of branded seals being taken on the coast of Japan have no foundation, as are the mythical herds which have been driven from the Pribilofs to parts unknown.

While the practical results of the season's work have been to more firmly strengthen the contentions of the United States, the scientific results have been more than expected. The observations of Mr. Clark, while throwing much light on the problem of early starvation of young, have also done much to explain the manner in which harems are formed and the massing of seals in particular spots when there is plenty of room and often better ground close at hand.

The noticeable scarcity of three-year old females indicates the truth of the supposition that the death rate is high, this being the only class whose abundance or scarcity could well be noted, owing to the great similarity in the appearance of the older seals. On only one point did the results of this year's observations differ materially from those of last year, and this is in respect to the cause of death among young seals. The conclusion reached last year that the great majority of deaths among the pups was due to their being trampled on by the old seals is found to be erroneous and that the mortality is caused by a parasite, a species of *Uncinaria*, found in the small intestine. This course of danger was pointed out by Dr. Stiles as a result of the examination of a very few specimens obtained in 1896, and the matter will be discussed at length later. It may be said that young seals—and they alone seem to be affected—dying from an attack of *Uncinaria* perish so quickly that they lose little of their fat and that the disease is practically over before the end of August.

Finally, the past summer was unusually dry and clear, these conditions greatly facilitating the work of the party from the U. S. Coast Survey which is engaged in making a careful survey of the islands and especially of the breeding grounds.

F. A. L.

A BOTANICAL EXCURSION TO MEXICO.

MEXICO is a profitable place for the botanist to visit on account of the richness of the flora, numerically speaking, and because of the assemblage in one geographical region of many species peculiar to a certain physical or meteorological zone. The aquatic flora, the Alpine flora, the desert and tropical floras, are all found associated within a radius of a few miles. Altitude and the distribution of the rainfall explain this somewhat interesting feature of the flora. The problems presented to the botanist for solution are very intricate, and it is necessary for him in order to solve the more difficult questions to spend considerable time in the field where the plants are to be found surrounded by natural conditions.

Each of the plant communities into which the flora of a country as vast as Mexico can be divided can be distinguished by the component plants which, together by their collective features, give character to the vegetation of a particular meteorological, geological or physical region of the earth's surface. Such a flora as the Mexican can be classified into several ecological* communities, as follows:

1. Hydrophytic Community, composed of Hydrophytes, or water-plants.

2. Xerophytic Community, composed of Xerophytes, or desert-plants.

3. Halophytic Community, composed of salt-loving plants.

4. Mesophytic Community, including those plants found in intermediate situations, such as plants of the tropical forests, palm forests, bamboo thickets, temperate deciduous forests, subtropical evergreen forests and plants of the Arctic, Alpine and prairie regions.

The valley of Mexico is especially suited

* Ecology is the study of plants with reference to their environmental conditions and covers the field of the so-called biology of plants.