

it.<sup>4</sup> The southern half of an old fault was ruptured for a distance of over twenty miles and a fault scarp formed that in places had a height of ten to fifteen feet. Where the rock surface was exposed the fault plane had a dip of 54° due west.

The effect of this displacement was to increase the elevation of the mountain range relative to Pleasant Valley. Another and older fault scarp, six to ten feet in height, which can be traced along the base of the range several miles north of the scarp of 1915, is described by Jones as "comparatively recent."

It is now known that large faults are the result of repeated small displacements, such as the one that occurred in Pleasant Valley. Students of structural geology have not given sufficient attention to the movements of the earth's crust that are going on at the present time. In tectonics no less than in sedimentation "the present is the key to the past." In this connection it is encouraging to note that the National Research Council has recently appointed a committee on the testing of isostasy in the Basin Ranges.

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#### DIPLOID MALES FROM FERTILIZED EGGS IN HYMENOPTERA

THE question of sex determination and parthenogenesis in Hymenoptera has been the subject of much interest and debate among bee breeders and biologists. According to Dzierzon (1845) the drones of the honey-bee are developed from unfertilized eggs, queens and workers from fertilized. Recent cytological work has shown that in the germ tract at least females are diploid, males haploid. Experiments with the parasitic wasp, *Habrobracon*, have shown orange eye color to be inherited in sex-linkoid fashion so that males inherit from their mother alone, females from both sexes. A few patroclinous mosaic males with black eyes arose from certain crosses, orange-eyed females by black-eyed males, from which only orange males were to be expected. These exceptional black males mated to orange females produced orange daughters and in a single case an orange brother of patroclinous males produced only black daughters. It was therefore postulated that fertilization was incomplete, and that cleavage of male and female pronuclei had taken place without fusion. These mosaic males were of normal fertility.

<sup>4</sup> Jones, J. Claude, "The Pleasant Valley, Nevada, earthquake of October 2, 1915," *Bull. Seis. Soc. Amer.*, Vol. 5, pp. 190-205, 1915.

At the same time there were produced from similar crosses black-eyed patroclinous males that were completely or almost completely sterile. Their few daughters were black-eyed, completely sterile and often morphologically abnormal. The mosaic theory was naturally extended to include these anomalous males. Their sterility and that of their daughters remained unexplained.

With the occurrence of further mutations it has been possible to show that these males are in all probability not haploid mosaics but are diploid, inheriting from both parents factors modifying the same structure. Thus two recessive wing mutations reconstitute the normal wing in the black-eyed males as in their sisters, while their orange-eyed brothers possess the maternal wing character.

The questions as to cause of sterility in these patroclinous males and their few daughters, as to why these males transmit only black and finally why they are males at all are still unanswered. Experiments now in progress may solve some of these questions. Results will be published in full later.

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#### A CONSERVATIONIST'S CREED AS TO WILD-LIFE ADMINISTRATION

(1) I BELIEVE that the fullest use should be made of our country's wild life resources from the standpoint of human benefit—for beauty, education, scientific study, recreation, for sport, for food, for fur, etc. All these possible uses should be considered in the administration of wild life, not any one of them exclusively of the others. At the same time, any one use may be of more importance than the others in a given locality, so that such locality may be administered with that particular value most prominently in view.

(2) I believe that that portion of our wild animal life known as "game" belongs no more to the sportsman than to other classes of people who do not pursue it with shotgun and rifle. More and more the notebook, the field glass and the camera are being employed in the pursuit of game as well as other animals. The newer generation by hundreds of thousands is turning to nature-out-of-doors, for recreation, instruction and pleasure through such agencies as the national parks, summer camps, Boy Scouts, Girl Scouts and Camp Fire Girls. Indeed, these other claimants upon our "game" resources are probably reaching to numbers greater than those of active sportsmen; *their* rights certainly deserve at least equal consideration.

(3) I believe it is unwise to attempt the absolute extermination of any native vertebrate species whatsoever. At the same time, it is perfectly proper to reduce or destroy any species in a given neighborhood where sound investigation shows it to be positively hurtful to the majority of interests. For example, coyotes, many rodents, jays, crows, magpies, house wrens, the screech owl and certain hawks may best be put under the ban locally.

(4) I believe it is wrong to permit the general public to shoot crows or any other presumably injurious animals during the breeding season of our desirable species. It is dangerous to invite broadcast shooting of any so-called vermin during the regular closed season, when the successful reproduction of our valuable species is of primary importance and is easily interfered with.

(5) I believe in the collecting of specimens of birds and vertebrates generally for educational and scientific purposes. The collector has no less right to kill non-game birds and mammals, in such places where he can do so consistently with other interests, than the sportsman has right to kill "game" species. A bird killed, but preserved as a study-specimen, is of service far longer than the bird that is shot just for sport or for food.

(6) I believe that it is wrong and even dangerous to introduce (that is, turn loose in the wild) alien species of either game or non-game birds and mammals. There is sound reason for believing that such introduction, if "successful," jeopardizes the continued existence of the native species in our fauna, with which competition is bound to occur.

(7) I believe that the very best known way to "conserve" animal life, in the interests of sportsman, scientist and nature-lover, alike, is to preserve conditions as nearly as possible favorable to our own native species. This can be done by the establishment and maintenance of numerous wild-life refuges, not only as comprised in private and public parks, but in national forests and elsewhere.

(8) In the interests of game and wild life conservation generally, I believe in the wisdom of doing away with grazing by domestic stock, more especially sheep, on the greater part of our national forest territory. A further, and vital, interest bound up in this factor is the conservation of water.

(9) I believe that the administration of our game and wild life resources should be kept as far as possible out of politics. The appertaining problems are essentially biological ones and are fraught with many technical considerations not appreciated or understood by the average politician or sportsman. The

resources in question should be handled as a national asset, administered with the advice of scientifically trained experts.

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## A WHALE SHARK (RHINEODON) IN THE GULF OF SIAM

IN the early part of the year 1919, a huge shark became wedged in the entrance of a bamboo stake-trap set in water eight to nine fathoms deep off Koh Chik (= Chik Island), on the east side of the Gulf of Siam. The fish remained stuck for seven days, during which time all fishing had to be suspended. It was finally killed with rifle bullets and hauled out of the trap, but the combined efforts of the local fishermen were insufficient to drag it ashore.

The fishermen are quite familiar with sharks, which are caught almost daily in the bamboo traps set in the offshore waters of this section, but none of them had ever before seen or heard of a shark of this size or kind. From the descriptions of its shape, color, mouth and teeth given to me by eye-witnesses, I have no doubt the fish was a *Rhineodon*.

While no measurements of the shark were taken, its actual length was known by its position alongside the leader as it lay wedged in the narrow entrance of the trap. From several independent sources I have learned that the length of the monster was determined by the fishermen to be over 10 *wa*. The *wa* is the Siamese fathom, and originally represented the full stretch of a man's outspread arms; in recent years it has been stabilized and adopted by the royal survey department as the equivalent to two meters. Therefore, whether we regard the *wa* as being the somewhat elastic measure of the Siamese fishermen, with, say, 1.7 to 1.8 meters as an approximate average, or as being a full two meters, it would seem that in the fish in question we have rather more than the maximum length that has heretofore been ascribed to the whale shark.

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BANGKOK, SIAM,  
JULY 8, 1925

## SCIENTIFIC BOOKS

*A Survey of Physics: A collection of lectures and essays by Max Planck.* Translated by R. JONES and D. H. WILLIAMS. E. P. Dutton & Co., New York.

INSTEAD of writing a more or less formal review of this book it seems preferable to set forth its sub-