

eration of American Societies for Experimental Biology. I wonder if we could have it incorporated at this point.

Mr. DADDARIO. Without objection, that may be incorporated. And we will keep the record open for additional papers as we may decide they should be included.

(Information is as follows:)

PREPARED STATEMENT BY DR. RAYMUND L. ZWEMER

Legislators should recognize the importance of the service they can perform for the United States by endorsing this resolution. It will provide a unique and effective means of meeting the urgent need for increased study and research on biological productivity and human welfare. These are being studied in many countries and by many agencies, but now we have an opportunity, with the multilateral support of the International Scientific Unions, to bring these efforts together in a more effective way. The non-governmental international scientific unions need the support of both interdepartmental organizations and of bilateral programs. The funds for each of these are controlled by the legislators of the participating countries. They are the ones who will determine the degree of support and the channels through which this support will be made available. From my own experience, I believe that international cooperative programs can be less expensive for the United States and longer lasting in their effect. Beneficial effects of biological productivity occurred with the introduction of Zebu strains of cattle from India into our cattle raising states, improving drought and disease resistance and meat production. On the other hand, there is the illustration of lack of biological control when with the opening of the Saint Lawrence Seaway certain predatory ocean eels were introduced into the Great Lakes which interfered with both commercial and sport fishing. Only recently has there been a trend toward better control. We do not know what might happen to ocean populations with a sea level canal between the Atlantic and the Pacific Oceans. At present the populations on each side of the Isthmus of Panama are kept apart, although possibly some specimens are transported by adhering to the hulls of ships passing through the Panama Canal. There is the need to add knowledgeable biologists to engineering projects such as space age exploration, in order to predict the destiny of life forms carried to the moon and eventually the planets or back to the earth. Perhaps there should be more effective consultation with biologists in making new ocean, lake and river connections or even locally in planning the building of an atomic power plant on the Patuxent River.

Sometimes the biological control mechanism is unknown and research has to be done to find the natural enemies of living things that have reproduced too rapidly in a new or protected environment. There is the well-known case of the rabbit introduced into Australia which became a pest but is now controlled by the introduction of a disease. Another example is that of the giant African snail which was introduced to the Pacific Islands as an item of food by the Japanese. When they left the islands in the latter part of World War II, the native inhabitants of the islands did not care for snails as food and as a result snails multiplied so rapidly that they devastated the garden products. Under a special research program, U.S. scientists were sent to Africa to find natural enemies; one proved to be a much smaller snail and the other a parasite. When introduced into the islands, these brought the multiplication of the giant snail back to within controllable limits. In the desert country of the Middle East, the camel and the goat because of their eating habits uproot the plants thus contributing to producing deserts. On the other hand, animals that bite off the fodder leave the roots to provide new plants for later forage. A very simple experiment was performed using a peninsula projecting into the Mediterranean from the Egyptian Western Desert. A strong fence was erected to keep out the wandering camel and goat. This was enough to show that in their absence, many plants could grow on desert soil. A program was then initiated to provide fencing in order that the former nomad inhabitants of the Western Desert could grow food and raise grazing animals, if they could be persuaded to change their living habits. During a ride from Cairo to Alexandria on the desert road bypass, I was shown with pride, mesquite trees which had been imported from the U.S. southwest. These provided the only available shade and seemed to be resistant to the conditions of that area. In another case the introduction of a new food encountered different customs and behavior patterns. During World War II, when the Chinese gov-