four cents per capita. This measure, or other similar relief, should be enacted as soon as possible. It is preferable from the standpoint of efficiency to make the appropriation with the fewest possible conditions, as was done in the Hatch and Adams Acts, rather than to continue the requirement for offset funds, as provided in the Smith-Lever and Smith-Hughes Acts. As compared with the Federal government it seems that the states now are carrying their full share.

In considering appropriations for agricultural research it is well to remember that when our taxes are increased for this purpose our involuntary taxes, or those which are levied by powers beyond our control, are decreased many times more than the voluntary taxes are increased.

COOPERATION AND SUPERVISION

(5) A national policy fostering agricultural research should provide for more definite and constructive cooperation by research agencies than now obtains.

(6) It must provide also for certain supervision to assure the proper use of public funds, and this is expected and welcomed. A reasonable amount of cooperation and supervision is stimulating. An excess is deadening.

(7) A more definite agreement on the fields to be occupied by the Department of Agriculture on the one hand and by the State experiment stations on the other hand, with better coordination of work and a larger provision for joint effort, should form a part of the policy for further developing agricultural research. Such a definition of function and joint effort would guard against undesirable duplication and would result in better directed efforts. Details should be worked out by representatives of the Secretary of Agriculture and the agricultural colleges and when properly approved should form a fundamental law. Once each year this joint agreement should be considered by duly chosen representatives for the purpose of making it more perfect. Among other things, it should provide for the wise selection of projects for investigation and for inviting experiment stations in different states or the Federal Department of Agriculture to give attention to different phases of a project requiring investigation at different places. All projects should be briefly but clearly described and recorded in the Department of Agriculture at Washington and all interested persons should be informed as to the kinds of work in progress. From time to time, at least once a year, the progress of each project should be officially reported and checked. When a project is undertaken, work on it should continue to a reasonable extent until it is finished or formally set aside, and care should be taken not to provide for starting new projects for any laboratory or station when it has too many projects unfinished.

(8) While a national policy for agricultural research should not enter the details of local administration, it should encourage the types of organization which would be most efficient.

SHALL WE HAVE AMPLE AGRICULTURAL RESEARCH?

An effort has been made to suggest a picture of our country as it would be without properly supported agricultural research, and again with such research. If this work is properly developed, agriculture will continue on a permanent and profitable basis in the face of ever increasing obstacles. And this nation with a strong agriculture will continue to furnish its own great commodities which come from the farms and will profit further from large sales of the surplus in other countries. The time is ripe for stimulating a national policy for agricultural research which will contribute to this great end.

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THE 1921 EXPEDITION OF THE CALIFORNIA ACADEMY OF SCIENCES TO THE GULF OF CALIFORNIA

IN the spring of 1921 the California Academy of Sciences sent a well-equipped scientific expedition to the Gulf of California. The purpose of the expedition was primarily to make as thorough study as possible of the fauna and flora of the islands in the Gulf and of certain important localities on

the adjacent mainland of Sonora and Baja California, and to make collections of research and museum materials in the various departments of zoology, botany and geology.

While several scientific expeditions have in the past visited the peninsula of Lower California, little attention has been given to the islands in the Gulf, of which the Coast Survey charts name about 30; in addition to these there are several rocks or small islets unnamed or not shown. Only five of these islands have more or less permanent inhabitants. Tiburon, the largest, is the home, for a portion of each year of the Seri or Koonkat Indians who visit it for hunting and fishing. San Marcos, Ceralbo, Carmen and San José are the locations of various industrial plants of some little importance; practically all islands of any considerable size are visited now and then by prospectors of various sorts. Some of the islands have become known because of the presence of salt beds, others because of guano deposits of considerable value; and these last with still others are the breeding grounds of vast numbers of sea birds. Visits of scientific men to these islands have been few and brief. Enough was known, however, to justify the belief that a careful exploration would yield collections and knowledge that would prove of great popular interest as well as scientific value.

The scientific staff of the expedition consisted of the following: Joseph R. Slevin, herpetologist, in charge; Edward P. Van Duzee, entomologist; Dr. Fred Baker, conchologist, paleontologist and physician; Ivan M. Johnston, botanist; Virgil W. Owen, ornithologist and mammalogist; and Joseph C. Chamberlin, general assistant. In addition to the Academy representatives, the expedition was fortunate in having two collaborators from the Mexican government, Señor Francisco Contreras, director and conchologist, and Señor Carlos Lopez, chief taxidermist of the Museo Nacional de Mexico.

The Academy chartered the gasoline schooner *Silver Gate*, 64 feet 6 inches over-all, 15 feet beam, 9 feet draft when loaded, 22 tons net, cruising radius 2,000 miles, and capable of making 8 knots per hour. The vessel was in command of Captain John Ross whose intimate acquaintance with the Gulf and its islands was of very great help to the expedition.

The issuance of the permits for exportation from the United States of the firearms and the alcohol necessary for the collecting and preservation of specimens was most exasperatingly delayed at Washington, and it was not until Honorable Julius Kahn and the Secretary of State were appealed to that action was gotten. Mr. Kahn secured the waiving of certain formalities and the necessary permits were issued. The Mexican government very promptly granted authority to the Academy to bring into Mexico the necessary equipment and to carry on the desired investigations in Mexican territory.

The various members of the party joined the *Silver Gate* at Guaymas, from which place the expedition set sail April 16.

The total number of days spent in the field was 87, and the number of miles cruised was 1811. Thirty-seven different islands were visited, some of them more than once. In addition to these, 14 stations were made on the coast of Lower California, and five on the coast of Sonora. Altogether, 96 collecting stations were occupied.

The Gulf of California is celebrated for its sudden and violent gales, but the itinerary of the *Silver Gate* was arranged with this in mind; with the results that no severe gales were encountered, no time was lost on account of adverse weather conditions, and the work was carried out essentially as originally planned.

The scientific results of the expedition are very satisfactory. Unusually large collections were made in most of the groups.

In entomology, more than 13,000 specimens were secured, a remarkable result when the arid, volcanic character of the country is considered and the further fact that the collecting was done at the close of the dry season when insects are fewer than at any other time. The collection of spiders, pseudoscorpions and myriopods secured by Mr. Chamberlin is particularly complete and valuable.

Perhaps the most remarkable collection of

all is that of reptiles and amphibians secured by Mr. Slevin, totaling more than 3,000 specimens. Every species previously known from the islands is represented by one or more specimens, and several species new to science were secured.

Very large and complete collections of the botany of the islands were secured by Mr. Johnston. In addition to a large number of dried specimens secured for the Academy's rapidly growing herbarium, a considerable number of living cactuses were sent direct to Dr. J. N. Rose at the United States National Museum, who with Dr. Britton, is monographing that group.

Owing to the unfortunate illness of Mr. Owen, during much of the cruise the collections of birds and mammals are small; however, good series of eggs of several species of birds were secured, particularly of Heermann's gull, and elegant and royal terns.

Dr. Baker secured a very extensive collection of mollusks particularly of shallow-water species. As the vessel was not equipped for dredging in deep water, not much was done in that line. Valuable collections of fossils were obtained at several places where fossils had not been previously known to exist. Dr. Baker also rendered invaluable service in his capacity as physician to the expedition. Through his constant attention to the drinking water supply, the food, and all other matters pertaining to health conditions on the ship, no serious illness due to local conditions appeared at any time.

A record of water temperatures was kept throughout the cruise and samples of water were taken, all of which have been turned over to the Scripps Institution for Biological Research for use in its oceanographic studies.

Small collections of marine algæ, freshwater fishes, and marine invertebrates were made.

All of the collections have now arrived at the Academy's Museum in San Francisco. Specialists are already at work upon them and the results of their studies will appear in due time in the Proceedings of the California Academy of Sciences.

Mr. Slevin as chief of party performed his duties with excellent judgment and rare tact. All members of the staff showed a fine spirit of cooperation and a degree of enthusiasm and industry highly commendable. Collaborators Contreras and Lopez proved most agreeable and helpful members of the party and contributed materially to the success of the expedition. Through their relations with local officials of the Mexican government they were able to render very great assistance in many ways. Captain Ross was an ideal commanding officer who appreciated the aims and purposes of the expedition, and was always ready to do anything possible that would contribute to its success.

The uniform courtesy shown by local government officials was very gratifying and was highly appreciated by all members of the expedition, as it is by the Academy.

Special mention should be made of courtesies extended by the United States officials with whom the members of the party came in contact, particularly Mr. J. A. McPherson, United States Vice-Consul at Guaymas and Mr. Francis J. Dyer, United States Consul at Nogales, Sonora.

On the whole, the expedition is regarded by the Academy as having been a very successful one, the results of which when published will add much to the knowledge of the natural history of the region.

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APPEAL OF THE AMERICAN CHEMICAL SOCIETY

A SMALL group of chemists, gathered together in 1876, founded the American Chemical Society. For several years the society was localized in its nature. Its journals were of little scientific importance, and its membership grew slowly. At least twenty-five years passed before it gained strength. Its growth really started when it eliminated classes of membership, became a democratic organization, and interested chemists throughout the country. As its membership began to increase, its one journal, the *Journal of the American Chemical*