

Brazil:

Agronomical Institute of the State of Campinas, Carlos Arnaldo Krug.

British Empire:

Canada: University of Laval, Monsieur l'Abbe Maurice Proulx; University of Montreal, M. le Prof. Henri Prat.

West Indies: The Empire Cotton Growing Corporation, Dr. S. C. Harland.

France:

Ministry of Public Instruction, M. le Prof. Henri Prat.

Germany:

German Genetics Society, Prof. Dr. R. Goldschmidt.
Kaiser Wilhelm Society for Advancement of Science,
Prof. Dr. R. Goldschmidt.

Holland:

Dutch Genetical Society, Miss Dr. J. A. Leliveld.

Italy:

Central Institute of Statistics of Italy, Prof. Corrado Gini.

Committee for the Study of Population Problems, Prof. Corrado Gini.

Italian Society of Genetics and Eugenics, Prof. Corrado Gini, Prof. Cesare Artom and Prof. Alessandro Ghigi.

Ministry of National Education, Prof. Alessandro Ghigi, Prof. Corrado Gini and Prof. Cesare Artom.

Norway:

University of Oslo, Prof. Dr. Cristine Bonnevie.

Poland:

Free University of Poland, Mrs. M. Skalska, Ph.D.

United States of America:

Department of Agriculture and Commerce, Puerto Rico, Arturo Roque.

National Institute of Social Sciences, Albert F. Blakeslee, Ph.D.

University of Florida, B. A. Bourne.

On recommendation of the committee on greetings, messages were sent to the following geneticists: E. Baur, C. Correns, K. Pearson, E. von Tschermak-Seysenegg, H. de Vries, E. B. Wilson. Greetings were also sent to the vice-presidents not attending. These included A. H. Buller, H. Nilsson-Ehle, E. Malinowski, L. Cockayne, Y. Tanaka, L. Cuénot, D. Paolo Enriques, V. Gregoire and A. Ernst.

On recommendation of the committee on resolu-

tions, the following action was taken: Votes of thanks to Cornell University, the local committee and to the members of the organization committee and executive council. A resolution that the congress approves the suggestion of Professor Tinne Tammes that the problem of standardizing genetic symbolism and nomenclature should be reconsidered and that the Genetic Societies of all countries concerned are asked to appoint committees which shall cooperate and prepare recommendations to be published two years before and to be discussed at the next International Genetics Congress.

The social program included an interesting and adequate series of events for visiting ladies. There were also excursions to spots of scenic beauty near to Ithaca, such as Watkins Glen, Enfield Glen and Taughannock State Park. At the latter an outing and picnic supper attended by 800 were held.

In spite of difficulties encountered in financing the congress, it appeared to be the general consensus of opinion that the occasion as a whole was extremely successful. Columbia University, the Carnegie Corporation, the Carnegie Endowment for International Peace, as well as the many institutions and individuals who contributed, all deserve their share of credit for making the congress possible.

Dr. Otto Mohr was asked to serve as chairman of the *ad interim* committee and to initiate the discussions within the committee concerning the place at which the next congress would be held. It was understood that full authority to settle this question is delegated to this committee, which is to act as representative of the international congress as a whole and is to reach its decisions without special consideration for the countries represented by its chairman or members. When it has reached a decision, it will transfer its functions to a committee to be formed by the country in which the Seventh International Congress of Genetics is to be held.

C. C. LITTLE,
*Chairman of the Executive Council
and Secretary-General of the
Sixth International Con-
gress of Genetics.*

SCIENTIFIC APPARATUS AND LABORATORY METHODS

SUCCESSFUL CAGE REARING OF *ANOPHELES QUADRIMACULATUS*¹

Two years ago the result of efforts to establish a perpetuating colony of *Anopheles quadrimaculatus* in an insectary was reported.² While small numbers

¹ The studies and observations on which this paper is based were conducted with the support and under the auspices of the International Health Division of the Rockefeller Foundation.

of fertile ova were secured from cage-reared parents, the work was not deemed a success, inasmuch as reproduction in the insectary took place at a diminishing rate, which was bound to result in the early extinction of the strain employed.

Recently, in conjunction with studies of induced malaria, efforts to rear anophelines were resumed,

² Boyd, *Am. Jour. Trop. Med.*, X, 165. 1930.

primarily to supply a stock of mosquitoes known to be free from naturally acquired malaria infection. The insectary employed differs radically in several respects from the one previously used. The new structure has not as yet been described, although the essential features of its operation are discussed in a paper by Boyd and Cain entitled "On Large-scale Rearing of *Anopheles quadrimaculatus* in Captivity," to appear in an early number of the *American Journal of Hygiene*."

The operation of the new insectary resulted in the production of five successive lineal generations of *A. quadrimaculatus* between February 18 and July 17, 1932; and multiplication in each generation occurred at an increasing rate. The periods over which the different stages of each generation were current are listed below. In several instances they were artificially curtailed to meet the exigencies of insectary operation incident to the production of stock for infection

Five Successive Generations of *A. quadrimaculatus* Produced between February 18 and July 17, 1932.

I. Ova	From insectary females, deposited prior to February 18, 1932
Larvae	February 18 to March 30
Imagines	February 22 to April 1
II. Ova	March 20 to April 19
Larvae	March 30 to April 26
Imagines	April 14 to May 14
III. Ova	May 6 to May 22
Larvae	May 6 to June 10
Imagines	May 19 to July 8
IV. Ova	May 24 to July 7
Larvae	May 26 to present (July 22)
Imagines	June 15 to present (July 22)
V. Ova	July 17 to present (July 22)
Larvae	July 17 to present (July 22)

and to our desire to avoid the mixing of adult females of different generations.

Over the three months' period from November, 1931, to February 18, 1932, the insectary was operated solely from the standpoint of furnishing stock for infection purposes. This stock was reared from the ova of wild females, and we have reason to believe that during this period, when no effort was made to keep the generations separate, there actually occurred three further generations. When it became apparent that abundant propagation was taking place in captivity, the insectary operation was modified in order to disclose each generation and to avoid the mixing of females of two generations. However, since the operation of the insectary prior to February 18 did not permit us to distinguish generations clearly, the possibilities of that period are ignored in this chronology.

The production of fertile ova is sufficient proof of the occurrence of copulation. As many larvae as our facilities permit are reared according to the methods described in the paper by Boyd and Cain. The imagines produced compare favorably in size with wild individuals. Males are fed on raisins, while the females feed readily on the person of the attendant, their only blood supply.

While the hazards of the future can not be forecast, there is nothing in the present outlook to indicate any limitations to the indefinite propagation of this strain. Needless to say, the possession of this strain is of the greatest advantage in the transmission of naturally induced malaria and offers research opportunities hitherto unavailable.

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MARK F. BOYD

SPECIAL ARTICLES

STIMULATION OF SPAWNING AND CROSS-FERTILIZATION BETWEEN AMERICAN AND JAPANESE OYSTERS

It has been shown previously by one of the authors that spawning of male and female American oysters, *Ostrea virginica*, can be induced by the sexual products of the opposite sex. The reaction appeared to be specific in the sense that sperm of other molluscs (*Mytilus*, *Mya*) had no effect on oysters. Negative results were obtained also in attempting to stimulate the ripe males of *O. virginica*, grown in Honolulu, by the eggs of *O. cucullata*, a species introduced from Australia.

This summer the authors have experimented with a Japanese oyster, *O. gigas*, which was imported as seed from Japan, grown for about two years in Puget

Sound and shipped in April, 1932, to Woods Hole, Mass.

Both *Ostrea virginica* and *O. gigas* can be stimulated by the sperm or eggs of either species. Thus, the spawning reaction of female *O. virginica* can be provoked by adding sperm of *O. gigas*, and similarly a female *O. gigas* responds to the presence of sperm of *O. virginica*. Spawning of the males is equally well provoked by the addition of eggs or egg water of either species.

Table 1 shows that in females the latent periods of spawning reactions vary from 8 to 26 minutes, while in the males the variation is from 4 to 6 seconds. In both cases the latency is within the limits previously observed in spawning *O. virginica* and apparently independent of the kind of eggs or sperm used