further consideration of his case and may present any evidence or information which he may wish to have considered. The particularity with which he may be informed of the contents of the reports in the Department's file depends, of course, upon the source and classification of such reports but it is usually possible to inform him in a general way of the nature of the evidence and the information upon which he has been refused a passport. Any new evidence or information which the applicant may submit is referred to the officers who first examined the case for evaluation and expression of opinion as to whether a passport may be issued. The Department cannot violate the confidential character of passport files by making public any information contained therein.

9. The Secretary of State has the authority to establish any administrative procedures respecting passports which he may deem appropriate. These procedures are under constant review and a continuing effort is made to see that they are fair and efficient. There is a board in the Passport Division for questions of loss of nationality. The consultations between officers of the Passport Division and officers of other divisions of the Department and with the Foreign Service abroad, in effect, constitute in a given case a most fair and comprehensive board of review action in the denial of a passport in the interests of the United States.

An Improved Lyophilizer[1]

THE lyophilization of bacterial cultures is a common laboratory practice. The apparatus, however, is often inefficient, fragile, and costly. We have tried several designs and have finally developed a type that is highly efficient, very sturdy, and inexpensive (Fig. 1).

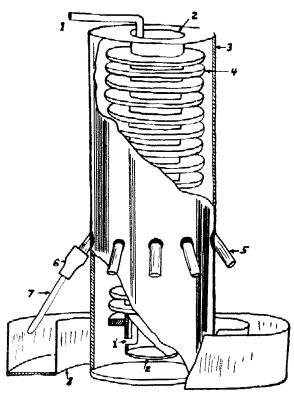

FIG. 1.

In essence, it is a metal Dewar flask with 24 nipples (5), ½″ × 2″, welded to the sides for the attachment of culture-drying vials. A steel pipe (2), 23″ × 3″, was welded in the center of a 24″ × 7½″ tank. Before the pipe was attached, metal fins ¼″ × 1½″ were welded to the inside of the tank. The vacuum exhaust pipe (1), ½″ × 23″, which was attached to the inside of the condenser pipe (2), acts as a second trap, removing any moisture before it reaches the vacuum pump.

[1] Published with approval of the director, Wyoming Agricultural Experiment Station, as Journal Paper No. 17.

It is important that all joints be welded and not brazed, if all leaks are to be eliminated. If brass parts are used throughout, brazing is permissible.

Ethyl alcohol or a 50% ethylene glycol–water mixture is used as a carrier in the condenser chamber (2) with a dry-ice refrigerant. The doughnut-shaped pan (8), a separate unit 22″ OD by 12″ ID, is constructed to conform to the tank shape (3). The pan (8) is then filled with ethylene glycol. The glass culture tubes (7) are connected to the metal nipples (5) by means of heavy rubber vacuum tubing (6).

The dimensions given are not critical but have been found satisfactory. Efficiency of this design lies in the great condenser surface and the short distance from condenser to culture tubes.

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Sterilization of Pyrogen-Free Injections in Fenwal Bottles

STEAM under pressure is usually employed to sterilize material for injection not injured by moisture and the temperature required. But when applied to material in Fenwal bottles[1] or containers not hermetically sealed, this process is unsatisfactory. There is a source of contamination that has been neglected.

At the beginning of sterilization, the temperature of the material is raised by the heat conducted through the container wall to 100° C. As a result, the air and water vapor inside the container increase in pressure and blow off continuously through the vent in the cap. No obvious drawback is seen here. During the change of temperature from 100° C to 120° C the steam pressure outside increases and remains greater than that of the gas mixture inside the container. Consequently, the steam outside will continuously enter the container and condense therein. For example, if a 1000-cc Fenwal bottle is used and 3 or 4 min are needed for the temperature to rise from 100° C to 120° C the total heat required will be 20,000 calories. The heat conducted through the wall[2] is at most 1000 calories. The greater amount of heat, therefore, must come from the condensation of steam, which is calculated to be at least 35 g. It is this amount of condensate that may spoil the material destined for injection.

To avoid contamination of the pyrogen-free solutions in Fenwal bottles during sterilization the following three processes are recommended:

Method I. Use the autoclave with the author's device (SCIENCE, **113**, 488 [1951]). Heat the solutions by free-flowing steam to a temperature of 100° C within

[1] Supplied by the Macalaster Bicknell Company, Cambridge, Mass.

[2] Calculated from the equation $H = \frac{kA(t_1 - t_2)}{d}$, where H = heat transmitted per sec, k = heat conductivity of glass = 0.0020, A = area = 400 cm², $t_1 - t_2$ = temperature difference, d = thickness = 0.2 cm.

at least 10 min,[3] to displace the air in the bottles by water vapor. Seal them by pushing down the caps and sterilize under pressure.

Method II. First heat and seal the solutions as in Method I. Then sterilize by means of free-flowing steam sterilization.

Method III. Seal the solutions hermetically and sterilize by means of steam under pressure or free-flowing steam sterilization.

Method I is the quickest, most effective, and most reliable process among the three, but the solutions are slightly contaminated by the steam diffused through the vent at the beginning, and care must be taken not to blow out the caps. Method II is the easiest in practice, but the solutions will be slightly contaminated in this process, too. Method III is the best from the standpoint of contamination, but in operation it is rather difficult if Fenwal bottles with old rubber stoppers are used.

[3] Time required for enough heat to transfer through the wall to heat the solution inside.

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Association Affairs

Hotel Headquarters, Sixth St. Louis Meeting December 26–31, 1952

R. L. Taylor

Assistant Administrative Secretary

ONE of the fundamental reasons scientists attend scientific meetings is to take advantage of the opportunity to renew contacts with former colleagues, professors, and students—and to meet, and exchange opinions with, other workers in the same fields of science. A AAAS meeting has an additional, unique advantage in that research workers in different disciplines are brought together. The basic pattern of the housing and session room arrangements, however, is the logical one of grouping specialists and closely related organizations together. Thus a large participating society is assigned an individual hotel, where the integrity of its own sessions is assured, and cooperating societies with joint sessions usually share the same hotel. Societies in closely related fields of science generally have headquarters hotels that are close together, to make it easier for those who wish to attend parts of concurrent sessions. AAAS sections are similarly grouped.

At the 119th Meeting of the AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE in St. Louis, December 26–31, 1952, this plan has been followed. As indicated in the Preliminary Announcement of this Sixth St. Louis Meeting (SCIENCE, **115**, 592 [1952]), the center of the week's activities will be the Kiel Auditorium, within a few blocks of all the downtown hotels—the Jefferson, Statler, De Soto, Lennox, Mayfair, and Mark Twain. This modern, well-equipped convention hall will be the site of the general symposia; the sectional programs in physics, chemistry, geology and geography, botany, psychology, the social sciences and agriculture, engineering, medical sciences (including medicine, dentistry, and pharmacy), and industrial science; the sessions of the Oak Ridge Institute of Nuclear Studies and of the Conference on Scientific Manpower II; the Annual Lecture of the National Geographic Society, and the Biologists' Smoker, both on the evening of December 29. The physical relationships of the Kiel Auditorium's session rooms, the Main Registration, the Visible Directory of Registrants, the AAAS Science Theatre, and the Annual Exposition of Science and Industry are almost ideal.

The Jefferson Hotel, AAAS headquarters, will be the locale of such evening events as the Phi Beta Kappa Annual Address, December 27; the AAAS Presidential Address, December 28; the Sigma Xi Annual Address, December 29; and the Annual Address of the Scientific Research Society of America, December 30. It will also have the sessions of the Academy Conference and of certain sections and societies (see tabulation at end of article). The Statler will be headquarters for AAAS Section F, the Society of Systematic Zoology, and, in general, all biological and medical groups. The science teaching societies will occupy the Hotel De Soto.

The three mathematical societies will hold all their sessions on the campus of Washington University and will be housed in the hotels most convenient for them—i.e., the Roosevelt, Chase, Melbourne, and Sheraton. With the exception of these hotels, which are reserved for the mathematicians and which are two to four miles west of downtown St. Louis, all the hotels that will be used are within a few blocks of each other and within a few minutes' walking distance of the Kiel Auditorium.

The hotels of St. Louis have pledged themselves to provide ample housing at moderate rates for those attending the meeting. Housing will be handled by the experienced, efficient St. Louis Convention Bureau. Hotel room assignment–confirmation slips are typed in triplicate, and one of these will be sent directly to the applicant by the hotel. Those who apply early are assured the hotel of their first choice, but it must be remembered that the supply of single rooms, at single rates, is always relatively limited—it pays to apply early for them. Double rooms for single occupancy,