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APPARATUS FOR PLATING OUT PETRI DISHES IN THE FIELD.

BY L. S. ROSS.

For some time bacteriologists interested in water or sewage analysis have realized the fact that for determining the number of bacteria per c.c. the water should be plated as soon as possible after it has been collected. If the samples are collected at some distance from the laboratory, recourse is had to packing in ice, which is always cumbersome and sometimes very inconvenient. Even then results will not be so accurate as those obtained by plating immediately after collecting. Various attempts have been made to plate dishes in the field, I believe without very satisfactory results, until last summer when I first used the apparatus here described.

The refrigerator pail is a double walled galvanized iron or copper pail of sufficient size for a rack, holding Petri dishes of regulation size, to stand within the inner compartment. The outer compartment has an inside diameter of eight inches, the inner a diameter of about four and three-eighths inches. A rack holding twelve Petri dishes is made of three upright supports, and platforms upon which to set the dishes. Thin, circular metal plates four and one-fourth inches in diameter, for the reception of the dishes, are fastened to the uprights, a space three-fourths inch or more being left between any two plates. A long, straight spring is soldered to one of the upright supports for holding each dish in position by pressing firmly upon the cover. The end of the spring overlaps the edge of the dish and is bent at right angles to prevent the dish from slipping from its place upon the platform. A lid fits

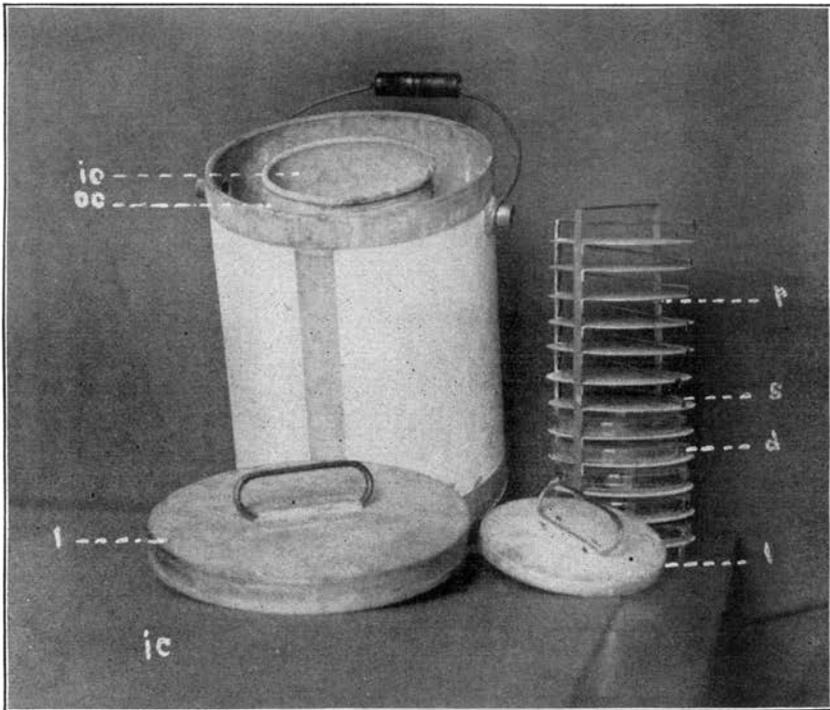
(7)

upon the inner compartment of the pail which contains the dish rack. Also a flat lid fits over the entire pail. The bail is fastened to two small open tubes that project from the side of the pail a little distance below the top of the inner compartment. The outside of the pail is covered with asbestos paper or felt.

For work in the field it is necessary to carry a small bag containing tubes of gelatine and agar, a cylinder of pipettes, an alcohol lamp, collecting bottles and perhaps a small tin can. The outer compartment of the pail is packed with broken ice. The sterilized Petri dishes are placed in the rack. Upon collecting the water the plates are poured and are at once replaced in the rack where the gelatine very quickly solidifies. A small hand level may be used for leveling the pail by placing it upon the flat lid; the pail being blocked up with sticks or anything convenient. The gelatine will now have an equal depth in all parts of the dish. The plated samples may then be taken to the laboratory at the leisure of the worker, he knowing there will be no multiplication of bacteria or diminution of numbers.

The apparatus is primarily for use in warm weather but will be found convenient for cooler weather also. It may be used in the laboratory for solidifying plates, if there is no ice box convenient, by turning a stream of cold water into the outer compartment. The water does not get into the inner compartment because the outlet tubes are at a lower level than the top of the compartment. The pail may be made for six, twelve, or more dishes, as seems most desirable.

PLATE V.



Legend—*ic*—inner compartment.
oc—outer compartment.
r—dish rack.
s—spring to hold dish in position.
d—Petre dish in rock.
l—lids of inner compartment and of pail.