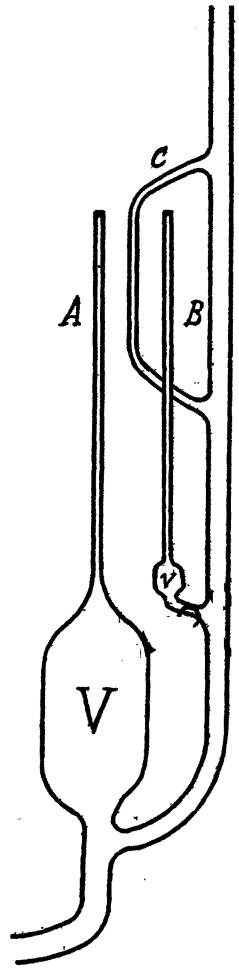
cause of the distortions of the capillaries at the junctions. Moreover, elaborate corrections for the difference in the surface tension of mercury in the various tubes must be made before the instrument can be used.



It is much more convenient to extend the range of the gauge by varying the third factor of the right-hand side of equation (1), $-V$, the volume of the reservoir. This can be done by having another vessel and capillary sealed parallel to the main one in the manner shown in the figure. The usefulness of this form of gauge could be greatly increased if a few points be taken into consideration in the design of the apparatus.

In experiments requiring frequent admission of the outside air it is impractical to have the capillary tube smaller than 0.5 mm², as the mercury is liable to stick to the glass unless the gauge is baked out after every run. It is also inconvenient to have the reservoir much larger than 300 cc. With a capillary 20 cms long the range of the gauge would be from 1.66×10^{-6} mms down to 6.6×10^{-2} mms. Now if the volume v of the smaller reservoir be made .01 that of V and a similar capillary tube be sealed on to it the highest and lowest readings on this additional gauge would be 1.66×10^{-4} and 6.6 mms respectively. The addition of a reservoir of three cc extends the range of the gauge down to pressures which can easily be measured with an ordinary mercury manometer.

If the three capillaries A, B and C are of the same diameter no corrections for surface tension need be applied. Moreover, if the capillaries A and B end at the same level and the volume v be .01 that of V the same calibration chart could be used for the combined gauge, the difference for each being only in the decimal point. The volume of the smaller reservoir could be adjusted to the proper capacity by varying the length of the connecting tube. Even if its size is not quite the proper fraction of V the overlapping of the ranges of the separate gauges enables one to determine the proper correction factor by means of the larger gauge.

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A FIELD PHOTOMICROGRAPHIC APPARATUS

IN the course of investigation of the Sockeye Salmon at Cultus Lake, British Columbia, there was arranged a unique and simple means of photographing small organisms, for example, parasitic copepoda adhering to the host yearling Sockeye. Inasmuch as the apparatus may be readily carried and used in the field and may solve some of the difficulties encountered in recording observations it is herewith described.

The camera used in all cases was an Eastman Graflex, with 4.7 anastigmatic lens. The largest image possible with this lens was much too small to bring out the distinguishing features. To the face of the camera lens was applied an ordinary watchmaker's eyeglass, held in place by a strip of black paper fitted tightly around the front of the camera and attached at the sides with gummed labels. The aperture in the black paper through which the eyeglass projected was made slightly smaller than the circumference of the outer edge of the tube of the eyeglass, so that the flared tube would completely fill the opening. By this means the lens could be brought to within three inches of the object. Excellent photographs were obtained at comparatively short exposure, giving a magnification of approximately five times. In the example above mentioned the parasitic copepods were clearly displayed attached to the gills of the host yearling Sockeye.

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