J. S. Dugdale and F. E. Simon

The layout of the apparatus is shown in figure 1. Helium at about 100 atm was introduced into the transmitter, E, through the high-pressure valve, G. E consisted of a steel U-tube containing mercury and was used to transmit to the helium the pressure generated in oil by the high-pressure pump, F. Details of the design of this transmitter have already been given in a recent paper (Holland *et al.* 1951).

After compression in the right-hand limb of E, the helium was transmitted to the calorimeter, I, in the cryostat, L, through a capillary tube of 18/8 austenitic

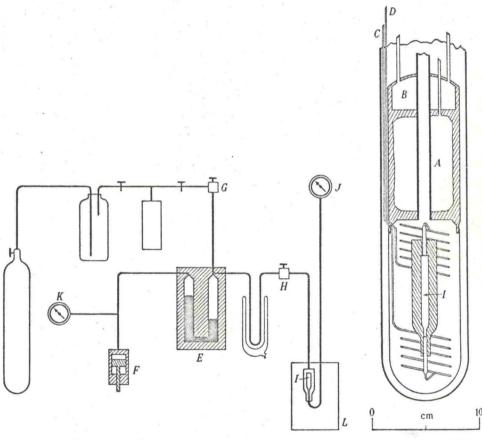


FIGURE 1. Lay-out of the apparatus.

FIGURE 2. The calorimeter and cryostat.

su

bo

eit

2.

to

al

B oi P P w 2

h

stainless steel. This tube was interrupted at H by a second high-pressure valve so that the calorimeter, once filled to a suitable density, could be isolated from the rest of the high-pressure circuit.

A second stainless steel capillary connected the other end of the calorimeter to a Bourdon gauge, J. This, in conjunction with that on the pump, K, could be used to ensure that the pressure was actually transmitted to the calorimeter. The gauge, J, was filled with mercury so that its dead volume was very small.

The calorimeter and cryostat are shown in detail in figure 2. A is the expansion chamber of the liquefier and B the hydrogen chamber. The calorimeter I is

294