

The first set of charcoal tubes was given the most complete trial. The following volumes of pure gas were recovered before the charcoal was saturated.

Run III	23.6 litres
" IV	21.3 "
" VI	25.0 "
" VII	21.2 "
Mean	22.8 "

The impure gas contained 88% "C" gas, therefore 26 litres of impure gas was treated on an average. Ninety grams of cocoanut charcoal was saturated by 3 litres of impurity (in this case nitrogen). The partial pressure of the nitrogen was about 90 mms. From Claude's data 11.2 litres of nitrogen was absorbed at 90 mms. by 100 gms. of charcoal, but the gas was left in contact with the charcoal for hours. In these experiments the impure helium was in contact with the charcoal for from one to two minutes only. It is probable that charcoal in a more efficient condition could be prepared, resulting in an even greater volume of gas being passed through before the charcoal becomes saturated.

SUMMARY

The results of the tests show:

1. That helium containing at least 12% impurity can be readily purified by passing in a continuous stream over charcoal at the temperature of liquid air or oxygen.
2. The rate of flow can be increased up to at least ten litres an hour without decreasing the efficiency of the process. The maximum possible rate of flow was not determined.
3. By the use of two or more sets of charcoal tubes, arranged in parallel, the process may be made a continuous one as this form of apparatus permits of revivification of the charcoal without disturbing the flow.

This work was carried out at the Admiralty Physical Laboratory, South Kensington, under the direction of Professor J. C. McLennan, F.R.S.