Ordinary Meeting, April 6th, 1880.

J. P. JOULE, D.C.L., LL.D., F.R.S., &c., President, in the Chair.

E. W. BINNEY, F.R.S., F.G.S., said that in vols. XVI. and XVIII. of the Proceedings of the Society he had given accounts of a *Eucalyptus globulus* which he had planted in his garden near the sea at Douglas, Isle of Man. During the winter of 1878 and 1879 it suffered in its foliage and young branches to a considerable extent; but during the past winter, although the temperature of the month of December, in the Isle of Man, was lower than that of the same month in 1878, the tree has almost escaped damage, and is at the present time growing vigorously and giving out a strong odour throughout the surrounding air. It has not grown much in height during the last two years, as it is now considerably higher than the sea wall near to which it grows, but it has much increased in the diameter of its stem. Up to this time it has shown no signs of flowering

"Note on modified Chlorophyll from the leaves of *Eucalyptus globulus*," by EDWARD SCHUNCK, Ph.D., F.R.S.

Whoever has seen the *Eucalyptus globulus* growing must have been struck with the peculiar glaucous appearance of the foliage, such as few European plants show. I thought it would be of interest to ascertain whether this peculiar appearance might be in any degree due to the state in which the chlorophyll exists in the leaves. A very simple experiment however sufficed to prove that the peculiar appearance referred to is owing to a covering of fatty matter, such as is seen on fresh plums and other fruit, which, though exceedingly thin, is sufficient to modify the green

colour of the leaf. On washing the leaves with a little ether the film of fatty matter disappears instantly, the leaves then appearing green like ordinary leaves. The ether leaves on evaporation a white semi-crystalline fatty residue which melts at a temperature much lower than that of boiling water, and is partly soluble in dilute alkaline lye boiling, so that it probably consists in part of some fatty acid. The leaves after washing with ether do not differ in appearance from other leaves. The alcoholic and ethereal extracts of these leaves show however a peculiarity, as regards the chlorophyll contained in them, which I have not observed in any other green leaf extract, though the same thing may have been observed by others and recorded in one of the numerous memoirs on chlorophyll, the whole of which I do not profess to have read. If a few of the smallest and latest formed Eucalyptus leaves from the tips of the branches are extracted with ether a green solution is obtained which shows the usual absorption bands of ordinary unchanged chlorophyll. If however a little of the extract contained in a tightly corked test tube be kept in a dark cupboard for several days it gradually acquires a yellowish tint and now shows absorption bands coinciding with those of so-called 'acid chlorophyll,' that is, of the modification which is produced at once by adding a few drops of an acid, such as acetic acid, to a solution of ordinary chlorophyll. The change in the spectrum produced by the action of acids consists in the disappearance of the chlorophyll band III, and the intensification of bands II and IV, which now more nearly approach band I in strength. An alcoholic extract of more fully developed but still quite fresh and vigorous leaves (I took for the purpose the pair next in order of development to those at the summit of the branch) showed the ordinary chlorophyll bands, though on attentive examination band IV was found to be a little more defined than usual. After being kept in the dark however for 24 hours