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"AN INVESTIGATION OF THE ESSENTIAL OIL OBTAINED FROM  
EUCALYPTUS CNEORIFOLIA D.C."

by  
P. A. Berry.

A NOTE OF THE EXPERIMENTAL WORK PERFORMED DURING THE YEAR 1921.



## General Notes on the determination of the physical constants.

The Specific Gravity. The specific Gravity was taken (except where otherwise stated) by means of the pycnometer using as large a pycnometer as the amount of the sample permitted. In the case of crude oils and other large fractions a pycnometer holding 50 grammes of water was used. The pycnometers were standardised with water at  $15^{\circ}\text{C}$  and when the specific gravity was taken at another temperature, the result was calculated to  $15^{\circ}\text{C}$  <sup>using a</sup> coefficient of cubical expansion of 0.00075 for each  $^{\circ}\text{C}$ . <sup>12</sup> Except where otherwise stated, the specific gravity refers to that calculated for  $\frac{15^{\circ}\text{C}}{15^{\circ}\text{C}}$ .

Rotation. Except where otherwise stated, the rotation refers to the actual rotation in a 100 m.m. tube.

Refractive Index. The refractive index was taken in an Abbe Refractometer (made by Messrs. Adam Hilger Ltd.) and except where otherwise stated the result calculated for a temperature of  $20^{\circ}\text{C}$  by adding or subtracting 0.00047 for each  $^{\circ}\text{C}$  by which the temperature exceeds or falls short of  $20^{\circ}\text{C}$ . The refractive index scale is so arranged that it reads directly the refractive index for the mean of the **D** lines of sodium light.

Dispersion. The dispersion figures given, refer to the dispersion between the C and F lines of hydrogen (656.3 u.u. to 486.1 u.u.). The dispersions were taken at the same temperature as the refractive index, but were not calculated for  $20^{\circ}\text{C}$ , as the difference over a small range is negligible.

Temperature. All temperature readings, except where otherwise stated, have been corrected for the unimmersed portion of the stem of the thermometer.

Crude Oil.

A sample of crude oil distilled at Cygnet River, Kangaroo Island on May 15th 1921 from Eucalyptus Cneorifolia, which was between three and four feet high and had been previously cut about three years earlier gave the following constants.

Rotation in 100 m.m. tube	-4.54
Specific Rotation ( $\alpha$ ) D =	-4.91
Specific Gravity at $\frac{17.2}{15}$ =	0.9232
Corrected for $\frac{15}{15}$ =	0.9248
Refractive Index at 15°C =	1.4693
Corrected for 20°C =	1.4670
Dispersion =	0.00979

Soluble in 1.05 volumes of 70% alcohol.