for conversation to do justice to the excellent lunch that awaited us at the Sasol Club.

### Synthol Process

After lunch, Alf Barnard gave us an audio-visual presentation of the Synthol Process (Fig. 1), which uses water (90 Ml daily), oxygen from the air (13 kt daily from a six-unit oxygen plant drawing 45 MW each), and carbon from coal (40 kt daily). The plant covers 13 km$^2$.

The coal from the mines is not washed, but merely screened at 3 mm into a coarse fraction for gasification and a fine fraction, which is used in the boiler plant for generating steam. The coarse coal, in the presence of oxygen and steam at 1100°C, yields a raw gas, which is cooled to 40°C to condense out phenols and tars. The gas is further purified at −70 °C in the Rectisol plant in columns 70 m in height to remove carbon dioxide and hydrogen sulphide by absorption in methanol. These columns were brought from Japan through Richards Bay fully fabricated, and were transported by road to Sasol.

The purified synthesis gas is fed to the Sasol Synthol unit, where it is entrained with powdered iron-based catalyst in the Synthol reactors. The product gas consists of hydrocarbons and oxygenated chemicals. Cooling separates the gas, liquid hydrocarbons, and an aqueous chemical mixture from which alcohols and ketones are recovered. The hydrocarbon liquid is fed to a fairly conventional refinery for the production of petrol, diesel fuel, and oils.

The uncondensed portion of the Synthol effluent is used to produce a methane-rich stream, which is sold as such or is reformed to hydrogen and carbon monoxide for recycling. Ethane and ethylene are used for the production of pure ethylene. Further treatment of the aqueous effluent results in commercially saleable anhydrous ammonia, which in future will also be used for the manufacture of fertilizers.

The visit was rounded off by a conducted coach tour of the plant in which the sheer size of the whole operation was put into perspective. It was remarkable to note how the Oil Work-up Section, which is the only plant normally required for a petroleum refinery, was dwarfed by the boilers, gasifiers, gas-cleaning equipment, and Synthol units that precede it.

### Grateful Visitors

All-in-all, it was a most interesting, varied, and instructive day, and the visitors were most grateful to Sasol management for the well thought-out tour, and for the friendly hospitality extended to them.

# Corrigenda: The absorption of gold cyanide onto activated carbon. I. The kinetics of absorption*

by M. J. Nicol, C. A. Fleming, and G. Gromberge

(a) On page 51, the equation numbered (1), near the bottom of the right-hand side, should be numbered (6), thus:

$$[Au]_c - [Au]_{c,o} = kK[Au]_s/t \quad \ldots\ldots (6)$$

(b) On page 52, the equation numbered (6), in the middle of the left-hand side, should be numbered (7), thus:

$$\frac{[Au]_c - [Au]_{c,o}}{[Au]_s} = k't^n. \quad \ldots\ldots (7)$$

(c) On page 53, the arrangement of the equation numbered (10), near the bottom of the left-hand side, may be confusing. It should have been as follows:

$$M_c \frac{d[Au]_c}{dt} = ([Au]_s^{in} - [Au]_s) \cdot V_s - M_s \frac{d[Au]_s}{dt}. \quad \ldots\ldots (10)$$

* *J. S. Afr. Inst. Min. Metall.*, vol. 84, no. 2. Feb. 1984. pp. 50–54.

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