

free from air and purified it would give 5,884 cubic feet. The composition of the gas and lignite is shown below:

## PERCENTAGE COMPOSITION OF GAS BY VOLUME

|                                         | As actually obtained | If manufactured free from atmospheric air and purified |
|-----------------------------------------|----------------------|--------------------------------------------------------|
| Hydrogen..                              |                      |                                                        |
| Methane.....                            | 27.2%                | 36.0%                                                  |
| Other hydrocarbons (mainly olefines)... | 27.2                 | 36.0                                                   |
| Carbon monoxide...                      | 4.0                  | 5.3                                                    |
| Carbon dioxide....                      | 17.2                 | 22.7                                                   |
| Nitrogen.....                           | 4.0                  |                                                        |
| Oxygen.....                             | 16.8                 |                                                        |
|                                         | 3.6                  |                                                        |

## ANALYSIS OF LIGNITE EMPLOYED

|                                      |        |
|--------------------------------------|--------|
| Volatile matter.....                 | 47.02% |
| Fixed carbon.....                    | 34.71  |
| Water.....                           | 11.40  |
| Ash.....                             | 0.87   |
| Phosphoric acid.....                 | 0.024  |
| Sulphur.....                         | 0.20   |
| Calorific value, small calories..... | 5,727  |
| Evaporative power.....               | 10.60  |

## SAMPLES FROM NEAR IBUSA

|                                      | UKPAI STREAM |        | OBOSHI STREAM |        |
|--------------------------------------|--------------|--------|---------------|--------|
|                                      | Average      | Best   | Average       | Best   |
| Volatile matter.....                 | 45.94%       | 47.83% | 47.01%        | 51.20% |
| Fixed carbon.....                    | 36.22        | 35.50  | 31.18         | 28.73  |
| Water.....                           | 9.79         | 10.47  | 9.44          | 8.47   |
| Ash.....                             | 8.05         | 6.20   | 12.37         | 11.60  |
| Sulphur.....                         | 0.68         | 0.47   | 1.61          | 1.38   |
| Calorific value, small calories..... | 6,108        | 6,201  | 5,597         | 6,145  |
| Evaporative power.....               | 11.37        | 11.54  | 10.42         | 11.44  |