

now been devised in which the slurry, pre-treated to form a wet mud, is first broken up and then agglomerated into spherical particles of either $\frac{1}{8}$ – $\frac{1}{4}$ in. or $\frac{1}{4}$ – $\frac{1}{2}$ in. diameter. The pelleting device is simple; the pellets themselves, when dried, are strong enough to withstand moderate handling, and have been burnt successfully on a mechanical stoker plant and do not disintegrate in the fuel bed of a gas producer.

The work on the automatic control of gas producers is aimed at improving practice in respect of the coal-fired producer so that coal may compete more favourably with imported oil as a fuel for the steel and glass industries. Two systems of control of the coal feed to gas producers have now been developed which maintain, under conditions of variable load, a constant quality of the gas. In one, which is recommended for use in steelworks, the rate of coal feed is linked directly to the rate of air feed to the producer. In the other, which is simpler, the controller is operated by the gas off-take temperature, and is to be preferred for use in the glass industry. A recent development of the former system is the use of blast steam pressure as the main controlling variable instead of air flow.

The ever-present problem of smoke emission is being studied in four different ways, namely: an investigation of the factors affecting the release of smoke from burning coal; the destruction of tar vapours in smoke; the possibility of reducing smoke formation by chemical pre-treatment of coal; and reduction of smoke by modified appliance design. Work on the first three problems is still in its early stages. Modifications to the design of domestic open fires have led to reduced smoke emission, but only under such rigid control as cannot yet be obtained under normal home conditions.

Although the work of the Association is concerned primarily and inevitably with the use of coal as a fuel, the possibility of coal replacing oil as a source of essential chemical substances in the future has not been overlooked, and a first method of attack by solvent treatment is being made.

The work of the Association as a whole must be regarded as of great value to a country the economy of which is based on coal, and it is to be hoped that circumstances will permit of its future expansion and acceleration.

WILD LIFE IN ARABIA

OPEN plains, scorching and shadeless during the summer, windswept and freezing during the winter night, present a hard environment. Yet up to the beginning of the present century an interesting assemblage of animals existed in the Arabian desert. Even when modern rifles came into general use the species held their own to a satisfactory extent. But the last decade has witnessed the advent of a mechanized predator, the 'jeep', and, according to a recent article by Desmond Foster-Vesey-Fitzgerald, it cannot be long before motorized hunting parties will sweep Arabia's fauna away (*Oryx*, 1, No. 5; April 1952).

It may be of value, therefore, to record the status of some of the more interesting animals during recent years. The Arabian oryx is now extinct in the northern sands of the Great Nafud. Some interesting pictures of this species have been scratched by idle shepherds on sandstone outcrops in the vicinity of Hail. In the southern sands of the Rub Al Khali the oryx still exists.

Three species of gazelle are still widespread and reasonably numerous. The northernmost species is Loder's gazelle, the 'rhim' or the Arab (*Gazella leptoceros marica*), which inhabits the gravel plains, limestone plateaux and sands of Central Arabia. This is a gazelle of the steppe where perennial dwarf shrubs are supplemented by abundant annual herbage following winter rains. It is a stocky, whitish animal which congregates in large flocks composed of fifty to a hundred individuals. It has not been observed to leap or bound like the other species, but travels nevertheless at a deceptively fast speed. The 'rhim' is the only species found on the northern gravel plains and along the fringes of the central Arabian sands, being especially abundant on the Bisaita plain and Teisiya plateau. It extends southwards into the tropic, where it has been observed congregating with the other species.

The other two species, the dorcas gazelle (*Gazella dorcas saudiya*) and the Arabian gazelle (*Gazella gazella arabica*) are both graceful reddish animals which leap and bound in a manner quite unlike the 'rhim'.

The dorcas gazelle or 'afri' appears to be confined to those parts of the interior of the peninsula where *Acacia* grows. It ranges widely over the great gravel plains which lie to the east of the Hejaz mountains but is only encountered in very small parties or alone.

The Arabian gazelle or 'idmi' is also a gazelle of *Acacia* country and appears to be the common species of the coastal plains. But it also occurs on the highland plains of the interior with the dorcas gazelle and is, in fact, the commonest species in all the country to the east of Taif.

Gazelle in Arabia never drink and they are able to exist without green herbage or dew. It must be presumed that the necessary moisture for their welfare is obtained from buds of perennial plants which, although encased within dry scales during drought periods, remain viable and ready to burst as soon as rains fall. Probably the most important plant in this category for the 'rhim' is the dwarf shrub *Rhanterium eppaposum*, and for the other species the various kinds of *Acacia*.

The ibex exists in Arabia where a suitable habitat occurs. Such places include the sandstone gorges around Medain Saleh in the Hejaz, the basalt ranges of the Jebel Shammar around Hail, and the drier mountains of Dhofar in Southern Arabia.

The wolf (*Canis lupus* var.) is still fairly common in Central Arabia, especially in the limestone country where springs are frequent and caverns provide suitable dens. The striped hyena is widespread but nowhere common, although tracks are often seen on the Red Sea coastal plains.

The leopard is rare but exists in the Red Sea hills south of Jedda, where baboons are plentiful, and also in the more generously wooded hills of Dhofar.

In Arabia the ostrich is extinct, although it would appear that these birds existed in some numbers over the open gravel plains of the Bisaita in North-Western Saudi Arabia until about twenty years ago. During the 1930's there was a big massacre in order to obtain plumes; but a few survivors lingered on until about 1944, when the last were killed. In south-eastern Arabia the ostrich became extinct about sixty years ago; but fragments of egg-shell can still be quite frequently found in the Bainuna country between the base of the Qatar peninsula and the Trucial coast.