

Carbon Monoxide in Gas.

By PROF. JOHN W. COBB.

THE following paragraph appeared in *The Times* for February 11, under the heading "Carbon Monoxide Peril."

"The Board of Trade has drafted a special Order under the Gas Regulation Act, 1920, relating to carbon monoxide in gas used for domestic purposes. The Order provides that: No gas undertakers as defined by the Gas Regulation Act, 1920, shall supply any gas for domestic purposes containing carbon monoxide unless such gas possesses the distinctive pungent smell of coal gas. The Order requires the approval of both Houses of Parliament."

The announcement needs some explanation, as probably nobody in this country has ever come across a public gas supply without a very distinctive and pungent smell.

When Sir George Beilby and the Fuel Research Board were called upon by the Board of Trade, some time ago, to make recommendations for the future regulation of public gas supply, they recognised in effect that radical improvements and economies by the gas manufacturers could be secured by the gasification of the fixed carbon of the coal by some such process as that of the steaming of vertical gas retorts or the gasification of coke in external generators with steam—the so-called water-gas process.

The increase in the carbon monoxide content of the gas so involved depended upon the extent to which the fixed carbon was gasified. The recommendations then made form the basis of the Gas Regulation Act of 1920, but when the Act was passed it was decided that the Board of Trade should institute inquiries on two special points, one of which was "whether it is necessary or desirable to prescribe any limitations of the proportion of carbon monoxide which may be supplied for the gas used for domestic purposes." The inquiry was made and evidence taken by a Committee from witnesses who regarded this matter from different points of view, and set out their arguments at length. It became plain that the economic advantages offered by the new Act depended very largely on freedom to supply gas containing more carbon monoxide, and that even on the side of hygiene the position was not so simple as might appear at first sight. Any danger from carbon monoxide had to be placed against the improvement of

public health which would result from the progressive abolition of smoke as gas replaced raw coal for heating purposes, and it had to be realised that in no circumstances would it be practicable to supply gas containing little or no carbon monoxide, since ordinary "straight" coal-gas might contain 10 per cent or more.

It is not surprising, therefore, that the Committee recommended against statutory limitation of carbon monoxide in public gas supply. It was, however, possible that the conditions of manufacture might at some time or place be changed to such an extent that the gas then supplied to the public would be nearly odourless unless some means were taken to confer a smell upon it, and to meet that possibility of the future it was recommended that the distribution of an odourless gas should be made an offence.

The Board of Trade Order, which has just been drafted, will carry that recommendation into effect. It is no doubt hoped that it will also have on the public mind the beneficial effect of a psychological antitoxin, which seems to be needed at the present time.

During the last two months of severe weather, the number of accidents from gas poisoning undoubtedly increased. Various factors have been operative in bringing this about, including the tendency to restrict ventilation owing to the cold, and to use gas heating appliances of all kinds, in all sorts of places, and particularly in bedrooms. Public attention, however, having been directed to the fact that carbon monoxide in public gas supply might increase considerably in the future owing to the Gas Regulation Act, people have arrived at the mistaken conclusion that such increase had already taken place and was solely responsible for these accidents. It would, as a matter of fact, greatly surprise the present writer to learn that the carbon monoxide content of gas responsible for any one of these accidents was above the permissible limit recommended by the advocates of restriction before the special Committee to which reference has been made above. In the gas supply of Leeds, which has come under the writer's own tests, the percentage of carbon monoxide has been actually considerably lower than it was during the summer months of the coal strike, and no higher than in the preceding winter. Nor is there any reason to suppose that the condition so described is exceptional.

The Brain of Rhodesian Man.

AT a meeting of the Royal Anthropological Institute held on February 14, Dr. W. H. R. Rivers, president, in the chair, Prof. G. Elliot Smith described the brain of Rhodesian man.

The excellent endocranial cast which Mr. Frank Barlow, of the Natural History Museum, has been able to obtain from the Rhodesian skull is of exceptional importance. In the first place, it affords evidence which settles once for all the position of *Homo rhodesiensis* in the human family and its varying degrees of affinity to the different members of the family; and, secondly, it provides very precise information concerning the size, shape, and stage of development of the brain of Rhodesian man, so that when the endocranial casts of Pithecanthropus, Eoanthropus, and *Homo Neanderthalensis* are compared with it and the whole series is considered in the light of the new information, a fuller understanding of the process of evolution of the human

brain is attained. Moreover, the endocranial cast enables us definitely to settle the dispute as to the posture of Rhodesian man, or at any rate as to how he carried his head.

Prof. John Hunter, of the University of Sydney, has made a series of exact orthogonal projections of the endocranial casts of the extinct types of the human family and of the anthropoid apes, and has shown that Rhodesian man's head was thrust forward on his tremendously massive neck at an angle almost exactly intermediate between that of the gorilla and modern man—a degree of obliquity almost identical with that of Gibraltar man and probably a little more than that of the man of La Chapelle-aux-Saints. The peculiarly distinctive features of the base of the skull of Rhodesian man corroborate this interpretation. The cranial capacity is 1280 c.c., which is roughly equal to that of the Gibraltar skull, but much smaller than all the other members of the