in from her home to set matters right. This brought me some unpopularity.

The basic trouble was deeper, as I found. It was not widely appreciated that the whistle was actuated by the nitrous oxide, and nobody ever thought of turning it off to stop the noise. I took the lever off again, hid it, and attached a notice to the alarm saying, "To stop whistle turn off nitrous oxide." I publicized these arrangements to everyone I thought they concerned. I even composed a small brochure about the Boyle machine, including a description of these precautions, and distributed it to the British Oxygen Company. All, one would have thought, would now be well.

But yet another hazard became apparent. Some months later the oxygen ran out and once again the whistle was dumb. The lever had been replaced and carefully turned off. The hospital had a maintenance contract, and the engineer on his routine visit had noted the absence of a lever on the tap and, as was his contractual duty, replaced it. I warned the theatre staff to inform him of our local arrangements on his next visit, and for some months after that we had a reliable oxygen alarm. My regular association with that theatre ceased a year or two ago. On a recent visit there I was not entirely surprised to find that a bright new lever has appeared on the alarm, which is now firmly and tidily turned off.

This danger will never be eradicated until the makers omit the tap altogether and replace it by an engraved notice stating that the whistle is actuated by the nitrous oxide, which may be turned off to stop it.—I am, etc.,

R. L. WYNNE

Wallasey, Cheshire

Relative Risks of Obesity and Smoking

SIR,—In an earlier paper on obesity and smoking habits¹ we showed that men who had never smoked were considerably heavier than smokers and that ex-smokers who gave up smoking for more than eight years approached the body weight of the never-smoked group. Because of the inverse relationship between obesity and smoking it is of interest to assess the relative risks of these two hazards in coronary heart disease, and this is especially of importance for ex-smokers who are attempting to give up the smoking habit, possibly at the cost of putting on weight. While evidence on the relative risks of obesity and smoking is still lacking, in the meantime we are able to present some results on complaints of heart disease in that population. We hope eventually to produce evidence on the relative risks of obesity and smoking from a mortality study of our steelworks population.

In our survey of steelworkers at Port Talbot and Ebbw Vale² a shorter version of the Medical Research Council questionnaire on respiratory symptoms was used with the following question added: Have you ever suffered from heart trouble (coronary, rheumatic, congenital, or any other)? The percentages of affirmative answers by age and smoking habit are shown in the table. Within each of the three age groups after 35, about 2% more heart trouble was reported among the ex-smokers and smokers than in the never-smoked group. Among the

Percentages of Subjects with History of Heart Trouble

Smoking Habit	Age Group (years)			
	25-34	35-44	45-54	55-64
Never smoked	2.3 (926)	1.1 (721)	2.5 (527)	6.1 (264)
Ex-smoker ..	1.5 (614)	3.1 (1,080)	5.4 (856)	8.6 (580)
Smoker ..	2.3 (2,271)	3.1 (3,431)	4.1 (3,061)	8.6 (2,015)

Figures in parentheses represent numbers of cases.

ex-smokers and smokers there was a steady increase in the percentage of affirmative answers with age. But the trend with age was lacking in the never-smoked group until 55 years.

The three smoking groups were greatly different in their mean body weights. The never-smoked group was heavier than smokers within each of the four age groups. The difference increased with age from 6 lb (2.7 kg) at age 25-34 to 16 lb 7.3 kg) at age 55-64, and the ex-smokers, though lighter than the never-smoked group, were much heavier than smokers (table III, Khosla and Lowe¹). Though the smokers were considerably lighter than the never-smoked group they (the smokers) reported (if anything) a trend towards a higher percentage of heart trouble at age 35 and over.

Fifty per cent of total male deaths in the age range 45-64 years in the United Kingdom are attributable to lung cancer, chronic bronchitis, and coronary heart disease.³ Lung cancer and chronic bronchitis are directly related to smoking, and they account for 20% of the total deaths. Considered together, it appears prudent from the epidemiological point of view to give up smoking even at the risk of putting on weight. The suggestion that the overall reduced risk in ex-smokers more than offsets possible increases in mortality due to a weight gain³ is a reasonable hypothesis for preventive action.

Further research is in progress in our departments.—We are, etc.,

T. KHOSLA

Department of Medical Statistics,

C. R. LOWE

Department of Social and Occupational Medicine, Welsh National School of Medicine, Cardiff

¹ Khosla, T., and Lowe, C. R., *British Medical Journal*, 1971, 4, 10.

² Lowe, C. R., et al., *British Journal of Preventive and Social Medicine*, 1968, 22, 1.

³ Royal College of Physicians, *Smoking and Health Now*. London, Pitman Medical Books, 1971.

Suppuration in Rheumatoid Arthritis

SIR,—Suppurative polyarthritis is an established complication of rheumatoid arthritis and we have had 11 patients with this condition under our care in the past nine years. In five there was an associated pneumonia and in four of these the responsible organism was *Streptococcus pneumoniae*. It is with these four patients that this letter is concerned.

One of these four patients, a woman aged 62 who had had rheumatoid arthritis for 14 years, presented desperately ill, very breathless, and cyanosed, giving a four-day history of increasing breathlessness. A chest x-ray showed consolidation of her left lower lobe, and thick pus was aspirated from both knee joints, though there was nothing beyond the presence of effusions into these joints to suggest suppuration. *Strep. pneumoniae* was isolated on blood culture, but treatment proved unavailing and she died within hours of admission.

Postmortem examination confirmed a clinical diagnosis of lobar pneumonia with septic arthritis. The remaining three patients, all men aged between 52 and 69 who gave a history of rheumatoid arthritis of four to eight years duration, presented with an exacerbation of their joint symptoms. Two admitted to recent chest trouble but in none were symptoms or signs of chest disease very obvious and the underlying pneumonia could easily have been missed on clinical examination.

Even before the advent of antibiotics, overt suppurative arthritis complicating pneumococcal pneumonia was rare and the figure of 1 in 800 cases was suggested by Herrick.¹ Now the incidence is likely to be less. Clearly patients with rheumatoid arthritis are especially susceptible to this complication and we are writing this letter to emphasize the importance of aspirating any suspect joints, especially those recently swollen, in patients with rheumatoid arthritis who develop pneumonia, and of x-raying the chest routinely in patients with suppurative polyarthritis.—We are, etc.,

N. T. GOODCHILD

E. D. SEVER

J. P. TOBY

General Hospital, Northampton

¹ Herrick, J. B., *American Journal of the Medical Sciences*, 1902, 124, 12.

Bronchodilatation Induced by Methoxyflurane

SIR,—Methoxyflurane (Penthane) is a self-administered analgesic used in childbirth. We have investigated the bronchoactivity of methoxyflurane in seven adults with normal ventilatory indices by means of a whole body plethysmograph. It is usual practice to express resistance of the airways as specific airways conductance, which is conductance divided by lung volume. After control values had been obtained the subject remained seated in the plethysmograph and inhaled from a Cyprane Cardiff inhaler through the standard face mask. The inhaler delivers methoxyflurane at a fixed concentration of 0.35% v/v. The exhalate was voided externally to avoid contamination of the plethysmograph. Breathing was at tidal volume for 1½ minutes, following which the specific conductance was remeasured immediately.

Six subjects showed a rise in specific conductance (range 7.2% to 33.6%; mean 20.3%). Bronchodilatation also occurred in the seventh subject, but this was overridden by a larger change in lung volume.

Thus we feel that consideration should be given to favouring this analgesic for women presenting with airways obstruction or with a history of asthma.—We are, etc.,

R. B. DOUGLAS

S. M. FORSEY

T.U.C. Centenary Institute, London School of Hygiene and Tropical Medicine, London W.C.1

Neonatal Jaundice and Maternal Oxytocin Infusion

SIR,—We read with interest the article by Dr. D. P. Davies and others (1 September, p. 476) on neonatal jaundice and maternal oxytocin infusion. We have recently looked for a similar association in a group of neonates. Bilirubin levels were measured in