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of partial rhizotomies, therefore, should be examined to see whether in fact it is a mixture of the partial and the complete operations; if it is, its recurrence rate will be less than the true rate for partial rhizotomy. Of the only two series quoted in this connexion by Messrs. Clarke and Hankinson, both were mixtures in unspecified proportions. Olivecrona, it is true, spared the ophthalmic division in most cases, and so his recurrence rate for partial section, if he had given it, might not have greatly exceeded his 8.5% for all cases. Leriche stated that neurotomylecties could be done "si on le veut," but not how many he had done. He had seen eight recurrences in quelques 250 cats.

Having no definite denominator, he quite properly gave no recurrence rate, and the "3%" ascribed to him by Messrs. Clarke and Hankinson is not in his book. In the two large series to which I have referred for the death rate, the relapse rates for partial rhizotomy were 7.5% and 8.5%.

Injection of the trigeminal sensory root is bound to have some mortality. For example, a patient of mine died of pulmonary embolism one midday. If she had done so at any time between her hours and a few weeks later her death would have been attributable to the injection which she was to receive that afternoon. This mortality, because of its very smallness, has not been satisfactorily estimated, but it is certainly well below a tenth of that from subtemporal rhizotomy (although the former or older the patient the less likely to be rhizotomized and the more likely to be injected). Mr. Taylor’s "no mortality" is an inaccuracy, but, and not Red Queen, I doubt whether he put it. Few seen inaccuracies, compared with which this would be a precision.—I am, etc.,

JOHN PENNAN.

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Difficulties of Doctors in Industry

SIR,—On 4 October 1968 Mr. Justice Swanwick delivered judgement in the High Court in the case of Stokes v. G.K.N. Bolts and Nuts Ltd. The action was brought by the widow of Mr. Stokes on the grounds that his death, on 13 February 1966 was caused by epithelioma of the scrotum due to exposure to mineral oil whilst in the employ of the defendants when he was working as a machine toolsetter. (Damage alleged was £10,000, were awarded to Mrs. Stokes. Leave to appeal was granted to G.K.N., who after careful consideration, and not without consultation with the Medical Defence Union, decided against further appeals and ceased medical supervision of G.K.N. Bolts and Nuts Ltd. in March 1965, but continued as chief medical officer to Guest, Kent and Nettlefolds Ltd. until the end of 1966, and since then acted as part-time consultant to the company’s London office.

I am not using your columns to complain against the comments of the learned judge, who held me to be negligent on two counts: firstly, that I did not arrange for sufficient warming of the employees after the death of another man, Ward, on 20 July 1963 from a growth of the scrotum; and secondly, that after Ward’s death, the first case I had discovered during 20 years of supervision of the health of 10,000 people, I had failed to carry out six-monthly inspection of the scrotum of all employees exposed to mineral oil. I cannot use your space to go further into the case, but I have listed some points which have significance to doctors in general, and to those employed in giving advice to industry.

It is a legal duty for a doctor seeing a case of epithelioma of the scrotum, if there has been exposure to mineral oil, to report the case to the Chief Inspector of Factories on Form 303. The disease is notifiable. It is the doctor’s moral responsibility to tell the man that he can claim under the Industrial Injuries Act.

Where a doctor advises a company and a case of epithelioma of the scrotum occurs involving exposure to mineral oil the doctor would be well advised to inform the employer in writing of the company’s duty to notify the occurrence to the local inspector of factories and to the appointed medical officer. Any action the doctor intends to take about prevention is better put in writing to the Factory Inspectorate.

Make sure that all the statutory notices concerning any hazard are displayed and maintained. This advice applies equally to the factory occupier, who is also responsible for the distribution of individualleaflets. Where a factory uses mineral oil it is statutory to display the cautionary notice: "Effects of Mineral Oil on the Skin," Form S.W. 397, price 6d. The individual leaflet "Effects on the Skin of Mineral Oil," S.W. 295, must be distributed to every worker subject to exposure. These leaflets are a free issue, but experience has shown that until recently they were in very short supply. A further point to be remembered is the language barrier, since many non-English speaking immigrants are employed in such factories.

The courts are not impressed with the literature than with personal experience, although mine was of 27 years’ standing.

The judge ruled that everybody in contact with mineral oil must have its scrotum examined by a doctor at six-monthly intervals, and presumably this must continue after he leaves employment. Garage hands, for example, would fall into this category.

There are no statutory regulations about routine inspections. Some advice from the factory inspector is therefore significant on this point. When do we start them? Has anybody realized what medical manpower is involved? Who has pronounced that these can stop the incidence of the disease, which it is now thought must have some recurrence after the discovery of the case of Ward was 23 cases in 1961? There must be some 10 million people exposed to mineral oil in this country. Incidentally I have found that many men (and presumably women) do not know that the scrotum is.

Why not drop secrecy and put “private parts” on the official notices?

Far more research is needed in the oil industry on the dangers of routine medical inspections creating a false sense of security, and on types of guarding and individual protection. I believe we should be doing a disservice to medicine if we take panic measures using valuable medical man hours, when I believe that the answer is personal cleanliness.

Finally, I would like to recognize the help given to me by my former company, and by those on the shop floor, whose interests matter above everything else.—I am, etc.,

W. JEFFERSON LLOYD.


Frusmide and Urinary Urine Cell Excretion

SIR,—We were interested to read the paper by Dr. A. E. Gent and his colleagues (2 November, p. 294) on the effect of frusmide and other substances on urinary cell excretion.

These authors suggest that the increased urinary white cell excretion which we reported in patients who had undergone surgery might be explained by administration of such drugs before or after operation. We do not think this is likely, for several reasons. Firstly, the increased white cell excretion we demonstrated was confined to the female sex, and one would not expect them to have enjoyed a monopoly in drug administration. Second, there was a correlation between increased postoperative white cell excretion and previous history of urinary tract infection. Finally, the increase in white cell excretion described by Dr. Gent after frusmide was about 25,000 white cells per hour; the increases we recorded were of the order of several hundred thousand cells per hour.—We are, etc.,

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SIR,—I was very interested to read the article by Dr. A. E. Gent and others (2 November, p. 294) concerning the effects of frusmide, lactose, and urea on urinary cell loss. I have also studied urinary cell loss before and after treatment with frusmide and chlorothiazide. During a 40-minute period following the intravenous administration of 20 mg. frusmide, or 500 mg. chlorothiazide, there was a several-fold increase in the excretion rate of red blood cells, renal tubular cells, and leukocytes in three of four normal volunteers.

There seems little doubt that treatment with frusmide can result in increased excretion of renal tubular cells. This response is probably due largely to an increased rate of urine flow, as the authors suggest. I have previously reported a significant correlation between urine flow rate and the excretion of red blood cells and renal tubular cells in healthy adults. Thus during the normal day-to-day variation in urine-flow rates, the excretion of both cell types at a rate of 20 ml./minute was more than double that observed at 0.7 ml./minute. The toxicological significance of minor changes in renal
I am glad that Dr. Butterworth has drawn attention to the possible carcinogenicity of the 2:7 diaminofluorene used in our stain. I was not aware of this hazard when the original method was published, and previous attempts to avoid contact with the stain must be taken. —I am, etc.,

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Through-knee Amputation

Sir,—The article by Mr. P. F. Early (16 November, p. 418) on through-knee amputation shows that this technique is becoming more recognized as advantageous, though its use is still limited by the shortcomings of the artificial limb makers. It is, of course, true that in traumatic amputations the precious skin around the knee is too often mangled, or is cut too short by inexperienced emergency surgeons, so that proper cover of the femoral condyles is not achieved. At the same time, in the case of ischaemic limbs the flaps are likely to be ischaemic too, so that only a small proportion of people can enjoy this stump. It seems a pity, therefore, that more attention is not devoted to the provision of the appropriate limb. A friction-loaded knee would obviate the risk of tissue rotation, it is possible for such a patient to start walking within a week of operation. The elevation of the condyles by 2 in. (5 cm.) does away with all the prosthesis objections.

The universal complaints about limb makers is the unconscionable delay between the amputation and the fitting of the limb. Under the modern development of applying in the theatre a plaster stump, delay even in the supply of a prosthesis is very irritating. It is certainly not a common experience to find that prostheses are supplied in a few days, as suggested in point (3) at the end of Mr. Early's discussion. The picture suggests a method of getting round this problem, using a preoperatively supplied walking caliper with a locking knee hinge. Weight-bearing is shared with the caliper ring and it is important to ask for heavy-duty side bars to the caliper.—I am, etc.,

Randle Lunt.
Littleover, Derby.

Systolic Murmurs in the Elderly

Sir,—May I call attention to the article on systolic murmurs in the elderly (30 November, p. 53).
The findings in fact confirmed that aortic valvular or ring abnormalities were present in most of the cases with clinically definite aortic murmurs. However, these were only 37 of the 173 patients studied, and in the remainder the examining physicians had not considered the murmurs as having definite aortic characteristics. Such cases are, however, still commonly diagnosed as 'aortic sclerosis,' but apparently more from the clinical than the diagnostic findings. It was in the latter group only that the high proportion of mitral abnormalities was observed, and to which the conclusion in your leading article refers.—I am, etc,

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Screening for Cervical Cancer

Sir,—Dr. A. J. Lucas and others (30 November, p. 578) make a timely point in drawing attention to the payment of general practitioners for the taking of cervical smears only from women over 35 years of age.
In the north-east region of Scotland the general practitioners have responded well to the advice to take cervical smears from their healthy women patients. In 1962 only 3% of 292 of cervical smears were taken by practitioners, whereas in 1967 40% of these smears were taken by the laboratory from women screened for the first time were from general practitioners. Fortunately these doctors do not appear to be limiting their smear-taking to the group for whom they will receive payment. This makes the attitude of the Ministry unreasonable and the screening commendable. The postal service initiated in November is most helpful.
Since our screening programme started unsuspected preclinical cases of cervical cancer have been detected at a rate of 0.3% below 30 years of age, but 0.81% between 30 and 35 years, and 0.85% between 35 and 40 years. Perhaps there was a case for