"psychosomatic diseases" have emotional sensitivity as their common property, and determinable specific sensitivities are found in most of them. The environment does the rest.—I am, etc.,

RANYARD WEST.

Church Stretton,
Salop.

Side-effects of Vinca Alkaloids

SIR,—The findings by Dr. A. Vlăduțiu (22 June, p. 764) of acute dilatation of the gut in guinea-pigs receiving intraperitoneal injections of vinblastine is similar to the experience of others working with this drug. Constipation, abdominal distension, and pain, sometimes sufficient to precipitate laparotomy, as well as acute urinary retention and loss of salivation, occasionally occur in patients receiving vinblastine,^{1,2} though the incidence of these complications is far greater in patients receiving the closely related alkaloid, vincristine.^{3,4} Prophylactic bulk laxatives and other aperients are recommended routinely for patients receiving vincristine.³

Smith⁵ found similar acute dilatation of the gut in mice treated with intraperitoneal injections of vinblastine, and moreover demonstrated degenerative changes in the myenteric plexus of the gut both in man and the mouse. This finding is in keeping with the known neurotoxicity of vinblastine, but more particularly of vincristine.³ Almost certainly direct damage to the myenteric plexus causes paralysis of the gut. There is no evidence for the true ganglion-blocking action of vinblastine suggested by Dr. Vlăduțiu.—I am, etc.,

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Pigmented Gut

SIR,—Your comments on the formation of lipofuscin (8 June, p. 574) are both interesting and informative. In addition to your discussion of the mechanisms involved in lipofuscinosis, the initial site of deposition of this pigment is also of interest. Experimental evidence suggests that lipofuscin deposition occurs first in the lysosome, and that this organelle may be primarily involved in this process. Hibbs *et al.*¹ have demonstrated ultrastructurally the development of lipofuscin in cardiac lysosomes in rats treated with high doses of isoproterenol for a prolonged period. Similar observations in lipofuscin deposition were made in the hearts of rats treated with a brown food colouring (Brown FK).²

Deposition of lipofuscin is apparently associated with lysosomal dysfunction. Thus injections of high doses of Neutral Red induce a profound loss of hepatic lysosomal enzymes,³ which is followed by the deposition of pigment possessing the staining character-

istics of lipofuscin.⁴ In vitamin-E deficiency Moore *et al.*⁵ have shown that lipofuscin deposition in the kidneys is preceded and accompanied by a phase of decreased lysosomal stability which can lead to an increase in the release of hydrolytic enzymes. The connexion between loss of lysosomal enzymes and lipofuscin is not clear, but some workers believe that lipofuscin deposition is one manifestation of an impaired ability of the lysosome to digest some lipid component(s) of intracellular breakdown products.—We are, etc.,

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Pain in the Face

SIR,—Professor H. Miller in his excellent article on pain in the face (8 June, p. 577) implies that migrainous neuralgia is synonymous with sphenopalatine neuralgia and ciliary neuralgia. These latter two conditions are, however, distinct clinical entities and differ from migrainous neuralgia.

Sphenopalatine neuralgia was first described by Greenfield Sluder in 1908¹ and has come to be known as Sluder's neuralgia. It affects the distribution of the maxillary division of the trigeminal nerve and is often associated with nasal obstruction on the affected side. The pain begins below the eye and then radiates across the cheek to the ear, and may involve the teeth. It has none of the regularity of migrainous neuralgia and is relieved, as Sluder described, by cocaineization of the sphenopalatine ganglion. In two of my patients with this condition the posterior end of the middle turbinate was in contact with the nasal septum, and touching with the probe reproduced the headache. Amputation of the middle turbinates and submucous resection resulted in almost total relief of symptoms over two years and one year and six months respectively.

Ciliary neuralgia was described by Charlin in 1931² with the following four characteristics:

- (1) Unilateral acute rhinitis with excessive watering of the nose.
- (2) Oculo-orbital neuralgia, often extreme.
- (3) Lacrimation and acute inflammation of the external part of the eye with possibly keratitis and corneal ulceration.
- (4) Prompt relief by cocaineization of the anterior ethmoid nerve region which is inflamed and swollen.

The onset is usually acute and the attack may not last long enough for the medical practitioner to see it before resolution.

Nasociliary neuralgia was described by Greenfield Sluder, too, in 1922,³ and renamed by him the anterior ethmoid nerve syndrome⁴ in 1927. In this condition the pain affects the area just above the inner canthus but is rarely confined to it. It usually affects the

frontal region and often spreads to involve the whole area of distribution of the ophthalmic division of the trigeminal nerve, and indeed may involve the whole face and even the neck. The gap between the nasal septum and the anterior end of the middle turbinate is usually narrow or absent and probing the area reproduces the headache, whereas cocaineization abolishes it. Slight nasal congestion or allergy is a frequent finding. Sluder's treatment consisted in repeated cocaineization of the nasal roof at the point of entry of the anterior ethmoid nerve or sometimes injection of carbolic acid in alcohol.

This condition is more frequently met with than either sphenopalatine neuralgia or migrainous neuralgia, and is usually relieved by submucous resection with or without amputation of the anterior end of the middle turbinate. The mechanism of nasal headaches is probably that of prolonged build up of pressure in the nasal fossa due to congestion of the mucosa. It is well worth the effort to investigate the nose by probing and cocaineization in patients whose headaches do not, as so often is the case, fall into one of the recognized categories.—I am, etc.,

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SIR,—I feel that the excellent article on pain in the face by Professor Henry Miller (8 June, p. 577) might be expanded with a little information on the use of radiotherapy in minute doses to the appropriate root ganglion.

For some time now general practitioners have been referring patients in increasing numbers to this department with both acute and chronic pain from herpes zoster. Over 500 cases have been dealt with, and it has been possible to do an approximate survey of 100 cases for this letter. Of acute cases, 95% obtained relief in about three days. Fourteen out of 15 cases affecting the fifth nerve were so relieved. A double blind control of limited extent showed overwhelming benefit in favour of treated cases. In chronic cases the results are inversely proportional to the duration of disease before referral and require a series of treatments, whereas acute cases usually require only one. A full report will be offered for publication in the future.—I am, etc.,

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Myocardial Infarction and Angina

SIR,—Eskola *et al.*¹ showed in a series of 12 patients that urinary coproporphyrin excretion was abnormally high for several days following acute myocardial infarction. Koskela² confirmed this but found no such increase following angina. These results suggest that measurement of urinary coproporphyrin excretion might help to distinguish myocardial infarction from angina.

To test this hypothesis, consecutive morning urine specimens from 50 patients admitted to

hospital with chest pain due to suspected myocardial infarction were analysed for coproporphyrin concentration by the rapid screening method of Zielhuis,³ using the Donath coproporphyrinometer. Patients who gave a history of regular heavy alcohol consumption, or who were drunk at the time of admission, were excluded. Urinary coproporphyrin excretion increases with urine alkalinity,⁴ but none of the specimens had a pH greater than 7. Thirty-eight of these 50 patients had in fact sustained an acute myocardial infarct according to electrocardiographic criteria⁵ or changes in the ST segment and T wave suggestive of infarction accompanied by a significant transient rise in serum aspartate aminotransferase (S.G.O.T.) levels (>50 Reitman and Frankel units). Twenty-four of these 38 (63%) developed an abnormally high urinary coproporphyrin concentration ($>100 \mu\text{g./litre}$) within three days of admission, which returned to normal within 10 days in all cases. The other 12 patients had angina without evidence of infarction and three of these patients (25%) developed increased coproporphyrinuria. Control urine samples were obtained from 30 patients with illnesses such as peptic ulcer and chronic bronchitis, which are not known to affect coproporphyrin excretion, and all these samples were normal. The results show that this rapid method of measuring coproporphyrinuria was not a reliable means of distinguishing myocardial infarction from angina.

The cause of the increased coproporphyrinuria following myocardial infarction or ischaemia is obscure. Increased coproporphyrinuria occurs in liver dysfunction⁶ and congestive cardiac failure,⁷ but there was no correlation with clinical signs of cardiac failure in the present series, and bromsulphalein excretion (5 mg./kg. body weight) was normal in the two patients with the highest levels of coproporphyrinuria. Pyrogenic steroids such as aetiocholanolone are known to increase porphyrin biosynthesis,⁸ and this in turn might increase coproporphyrin excretion. It is possible that adrenal corticosteroids released during "stress" are metabolized to aetiocholanolone or related compounds, but in these patients there was no consistent quantitative relationship between either the severity of chest pain or the degree of pyrexia and the levels of urinary coproporphyrin reached.

Thanks are due to Professor K. W. Donald and the physicians of the Coronary Care Unit of the Royal Infirmary, Edinburgh, for allowing me to study patients in their care.

—I am, etc.,

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Postnatal Examination

SIR,—In reply to Dr. Ian Capstick's invitation for comments regarding his recommendations for postnatal examination (8 June, p. 626) I would like to point out one serious omission.

Probably the most important aspect of postnatal examination and particularly pelvic examination is performing a cervical smear. I cite the following figures from Aberdeen: In 1965 1,116 smears were performed, 6 of which confirmed preclinical cervical cancer. In 1966 1,043 postnatal smears gave no positive results. In 1967 1,163 postnatal smears gave a pick-up of 23 atypical and 1 preclinical cancer.

I can only presume from Dr. Capstick's letter that it is possible that antenatal smears may be taken. If so, these remarks are not applicable.—I am, etc.,

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Postnatal Consultation

SIR,—Dr. Ian Capstick (8 June, p. 625) doubts the value of the postnatal vaginal examination. We are convinced of the value of a routine vaginal examination and cervical smear, which take only a few minutes to do. It has to be carried out in any case if the patient desires anti-ovulation pills, as so many request them at this time.

In our fairly small practice numbering some 60–80 postnatals a year we have had one case of stage I carcinoma of cervix and another of carcinoma-in-situ—the latter discovered by "Pap" smear following a miscarriage at 16 weeks. There were no symptoms in either case. Both were successfully treated at the local hospital.—We are, etc.,

J. H. WILLIS.

MOREEN C. WILLIS.

Brigg, Lincs.

Ocular Damage due to Paraquat and Diquat

SIR,—Dr. A. A. B. Swan (8 June, p. 624) suggests that the bipyridyls (paraquat and diquat) produce only superficial and relatively trivial ocular burns. Lest his letter in defence of the bipyridyls should give the impression that local damage caused by these weedkillers is trivial we would like to stress the similarity between the effect they cause on the eyes and that caused by an alkali. Since writing our medical memorandum on ocular damage due to paraquat and diquat (27 April, p. 224) we have seen several further cases in which "Preglone" Extra or Weedol solution have been splashed in the eye, and in each case, after a delay of several days, a serious superficial ocular burn had developed, which in two cases has produced corneal scarring. We have had communications from a number of general practitioners describing similar cases seen by them.

Dr. Swan adds that the labels on all liquid formulations of the bipyridyls carry the warnings: "Wear rubber gloves and face shield when handling the concentrate. Wash concentrate from skin or eyes immediately." In all of the cases seen by us, or reported to us, the concentrate has been washed immediately from the skin and eyes, but in all of these cases the inevitable ocular damage has resulted. In view of the widespread and increasing use of these weedkillers in agricul-

ture and horticulture we feel that rather than minimize their effect on the tissues Dr. Swan and Imperial Chemical Industries Limited should emphasize their dangers.—We are, etc.,

J. STANLEY CANT.

D. R. H. LEWIS.

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Gas Gangrene and Intramuscular Injection

SIR,—In view of the recent report of a case of fatal gas gangrene complicating an injection of hyperdural adrenaline by Drs. P. W. Harvey and G. V. Purnell (23 March, p. 744) and the rarity in the literature (23 March, p. 721) I feel justified in reporting a further case.

An 18-year-old woman was referred to me on 26 December 1962 at about 9.30 a.m. complaining of a dull pain in the right thigh. Three days previously she had suffered from a severe attack of urticaria. Her doctor gave her an injection of A.C.T.H. and hyperdural adrenaline, the latter drug being injected into the right thigh. Apart from the urticaria the past history was non-contributory. On examination she looked ill and was in obvious pain. The pulse rate was 120 and the temperature 101°F . (38.2°C). In the right thigh and especially on the lateral aspect there was a large diffuse swelling which appeared to be fluctuant. There was a suggestion of underlying crepitus on palpation. An x-ray film of the thigh showed diffuse gas bubbles in the intermuscular tissue planes. A diagnosis of gas gangrene was made and 500,000 units of penicillin was given intravenously immediately.

She was taken to the operating-theatre, where under general anaesthesia a long vertical incision was made on the lateral aspect of the thigh, extending from the outer aspect of the knee joint to the anterior superior iliac spine. On incising the deep fascia the muscles bulged with considerable oozing of foul-smelling fluid and small gas bubbles. An extensive excision of necrotic muscle was done. The wound was irrigated with hydrogen peroxide and left unsutured. Liberal amounts of gauze dressings soaked in hydrogen peroxide were applied.

At the end of the operation cardiac arrest occurred. External cardiac massage failed to restore the heart beat. A left thoracotomy was made and the heart found to be fibrillating. After about two minutes of cardiac massage vigorous cardiac contractions returned and the left thoracic cavity was closed. After the operation spontaneous respirations returned but the patient did not recover consciousness.

Two hours later continuous oozing of fresh blood was noticed from the wound in the left thigh and the thoracotomy incision. She was given three units of blood, but because oozing continued she was taken back to the operating-theatre. Numerous bleeding points in the thigh wound and on the cut surface of the incised pericardium were found and controlled by diathermy and ligature. On return to the ward, although the bleeding had stopped, her blood pressure gradually fell. She died about 18 hours after admission in spite of the wound resuscitative measures.

Microscopic examination of a direct smear from the muscle tissue taken at the time of the operation showed large Gram-positive bacilli. Culture yielded a growth of anaerobic Gram-positive bacilli of the *Clostridium* group and a scanty growth of anaerobic haemolytic *Staphylococcus aureus*. Microscopical examination of sections of muscle removed at the operation showed an acute pyogenic infiltrate throughout the muscle and innumerable clostridia in all components of the tissue.