ized maculo-papular rash appeared, which was partly petechial on her legs. There was no lymphadenopathy and the spleen was not palpable. The results of blood counts are shown below.

Day of Illness	W.B.C. /cu. mm.	Neutrophils /cu. mm.	Eosinophils /cu. mm.	Lymphocytes /cu. mm.
1	11,000	4,400 (40%)	1,210 (11%)	4,950 (45%)
3	17,000	5,780 (34%)	1,050 (5%)	10,030 (59%)
11	12,000	4,440 (37%)	3,480 (29%)	3,360 (28%)
24	9,000	6,390 (71%)	270 (3%)	1,890 (21%)

On days 1 and 3 nearly all the lymphocytes were atypical, and about half of these resembled glandular-fever cells. By day 11 the latter had disappeared and only an occasional lymphocyte was atypical. On day 24 the leucocyte picture was normal. The haemoglobin level and platelet count were constantly normal. Paul–Bunnell tests were repeatedly negative, and toxoplasma dye tests gave titres of 256 during and for three months after the illness.

It seems most unlikely that glandular-fever or toxoplasma infection was the cause of the illness in either case. Both infections are rare over the age of 50.[2,3] Lymphadenopathy was not present, as it is invariably at some time in glandular fever[2] and in cases of toxoplasmosis with glandular-fever cells in the blood.[3] A toxoplasma dye titre of 256, as in Case 2, is found in 1% of adults, and the titre in the second case did not rise during or after the illness. On the other hand, the skin rashes and the marked eosinophilia, and the agranulocytosis in the first case, strongly suggest that both patients suffered a reaction to the drug phenylbutazone, and that the glandular-fever cells in the blood were part of this reaction. This was the conclusion of Dr. Lawrence as regards his case, which showed an even greater lymphocytosis of 17,820/cu. mm. with many glandular-fever cells present and an eosinophilia of 1,080/cu. mm.

I wish to thank Drs. J. Laurie, E. A. Murray, and I. D. S. Cowie for the clinical details and permission to publish these cases, and Miss J. Hutchinson for assistance.

—I am, etc.,

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Elastic Band Injuries

SIR,—Deliberate production of artifact ulcers by elastic bands around the lower third of the leg is described in the paper by Mr. I. D. Kitchin and others (22 April, p. 218) and in the letter of Dr. K. Dawson-Butterworth (20 May, p. 510). Accidental production of artifact ulcers by elastic bands around the fingers and around the arm is described by Dr. J. G. B. Thurston (6 May, p. 376) and Mr. J. P. Turney (13 May, p. 445), respectively.

A widow aged 77 presented in September 1967 with a deep circumferential ulcer of the lower third of the right leg and a chronic varicose ulcer distal to this. She reported that a tight bandage had been applied to the varicose ulcer; this was postulated as the cause of the circumferential ulcer. The day after admission to hospital an elastic band

was removed from the depths of the ulcer. On further questioning she admitted having used an elastic band to hold a dressing on the varicose ulcer some weeks before admission, and had been perplexed at its disappearance.

The photograph was taken by Mr. A. D. Ring 24 hours after removal of the band.

—I am, etc.,

GEOFFREY GLEW.

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Christchurch, New Zealand.

Nalidixic Acid and Intracranial Hypertension

SIR,—There have been letters in the *B.M.J.* this year describing intracranial hypertension in children treated with nalidixic acid (29 April, p. 310; 5 August, p. 370; and 9 September, p. 679).

We therefore think it of interest to report the case of a middle-aged woman, who in the third week of acute glomerulonephritis, while yet still febrile and slightly oedematous, but with good urine output and blood urea of 24 mg./100 ml., was given nalidixic acid in a dose of 1 g. four times a day for a superimposed coliform infection of the urine. At the time she was normotensive and had no papilloedema. Within 24 hours of commencement of the nalidixic acid she developed, in the night, a toxic confusional state of schizoid type with paranoid ideas and depersonalization. A day later the nalidixic acid was stopped and there was thereafter considerable improvement, although another week passed before she was completely normal. An E.E.G. at this time was essentially normal, but during the record the patient had a hallucinatory episode during which there was demonstrated an increase of theta activity, abolished by opening the eyes. A repeat E.E.G. at a later date was entirely normal, though it is probably significant that the frequency of the alpha rhythm showed an increase of one cycle per second.

It would seem possible that the administration of nalidixic acid during the oedematous phase of acute nephritis precipitated this psychosis. Such an occurrence bears a relation to the previous reports of intracranial hypertension, although in this case there was no direct evidence.—We are, etc.,

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M. WALTON.
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Newcastle upon Tyne.

Goodpasture's Syndrome and Dialysis

SIR,—The following case history supports the use of peritoneal dialysis in Goodpasture's syndrome, as mentioned by Dr. J. F. Munro and others (14 October, p. 95).

A 36-year-old woman was admitted in August 1966 with pyrexia. She had previously enjoyed good health and had borne five children with no apparent medical complication. She had noticed haemoptysis for the previous two weeks.

A postero-anterior chest x-ray showed bilateral diffuse mottling in the mid and lower zones. Haemoglobin was 6 g./100 ml. and the R.B.C.s showed the features of an iron deficiency anaemia. There was no other site of blood loss. The W.B.C. was 9,600/cu. mm.; the E.S.R. 125 mm. in one hour, and the blood urea 175 mg./100 ml.; serum proteins were 4.6 g./100 ml. with an albumin of 2.9 and a globulin of 1.7. Lupus erythematosus and rheumatoid arthritis screening tests were negative. Her sputum contained many macrophages laden with haemosiderin but no mycobacterium. The urine contained a moderate amount of protein. R.B.C.s and casts could be seen on microscopy.

Despite her sex, these features are in keeping with Goodpasture's syndrome. She was started on prednisone. Over the ensuing days haemoptysis continued and she complained of increasing dyspnoea. Her urine output fell. The blood urea slowly rose to 390 mg./100 ml., by which time she had become semi-conscious. Peritoneal dialysis was performed with dramatic subjective improvement and her urea fell to 222 mg./100 ml.

During the next two weeks she ate a low protein diet and her blood urea fell still further to 42 mg./100 ml. Haemoptysis ceased.

She then started to develop considerable oedema despite a reasonable fluid output and was prescribed frusemide. She commenced a normal diet. Average proteinuria was 1 g. per day, using Esbach's method at the time of discharge. Since that time she has remained in reasonable health up to August of this year, although her blood urea has slowly risen to 100 mg./100 ml. Episodes of haemoptysis have been infrequent.

The original peritoneal dialysis was lifesaving during a critical part of her illness. She has recently been readmitted complaining of dyspnoea. Her haemoglobin is 10 g./100 ml. The blood urea has risen to 300 mg./100 ml.—I am, etc.,

DEREK BAINBRIDGE.

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Burton-on-Trent.

Cowpox and Paravaccinia

SIR,—I read your leading article "Cowpox and Paravaccinia" (November 11, p. 308) with great interest. How does the cow's udder become infected? What is the direct source of infection? Many country folk, and others, have quaint notions about this.

I quote from a rare copy of *Practical Observations on the Inoculation of Cowpox* by James Bryce, "one of the surgeons to the Institutions for the Gratuitous Inoculation of Cowpox, Edinburgh, 1801."

"Some have asserted that the cowpox is not generated in the constitution of the cow, but produced on her by inoculation with certain diseased fluids of the horse; while others are of opinion that this ailment is truly vaccine, being generated solely in the constitution of the cow. . . .

"The horse, it is well known, is subject to an inflammation and swelling in the heels, which is called the grease, from which, at a certain period of the affection, there issues a very acrid thin matter; and this applied to the udder or teats of the cows . . . gives rise to a postular [*sic*] affection on those parts, which is the cowpox."

For all I know, Jenner himself may have proved this theory to be a scientific truth.—I am, etc.,

W. A. BRYCE.

Streetly,
Sutton Coldfield.

Percentages

SIR,—A minor annoyance in the reading of tabulated data is the habit of some authors of reporting the percentage of both positive and negative, leading the reader to check whether the figures do indeed add up to 100. This might be "planned redundancy," a common computer method of confirmation of a result or a method of emphasizing the figure.

But when a pair of figures put out by a computer do not add up to 100, as recently in the *B.M.J.* (2 September, p. 613), one wonders who or what has slipped.—I am, etc.,

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Durban, South Africa.

*** We apologize for the error in Table I in the article referred to.—ED., *B.M.J.*

Measurement of Blood Loss

SIR,—We were very interested in the paper by Dr. J. M. Holt and others (14 October, p. 86) regarding the measurement of blood loss using a whole body counter. Although this method is very convenient for the patient and the doctor, the considerable discrepancy between calculated blood loss and actual blood loss shown by the authors is alarming, and may limit the clinical usefulness of whole body counters in studying blood loss.

We have found that the method of detection of blood loss using radio-chromium-labelled red cells and faecal collections is a highly accurate way of detecting intestinal blood loss over a period of weeks. The method is sufficient to detect less than 0.5 ml. of blood and is equally applicable to menstrual blood loss.

The simplicity of this technique of faecal collection may well recommend itself for more routine clinical use, and in appropriate patients can be used as an outpatient procedure. The whole body counter is the ideal tool for iron absorption studies, but in view of the serious disadvantage in accurate detection of blood loss from our own experience we would recommend faecal collection whenever possible using radio-chromium.—We are, etc.,

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S. NASSER.

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Thiothixene in Schizophrenia

SIR,—Thiothixene (Navane, Pfizer) is a new addition to the group of tricyclic major tranquillizing and antipsychotic drugs. A number of controlled trials[1,2] in other countries on acute and chronic schizophrenic patients have indicated a beneficial effect, principally on excitement and suspiciousness, and, in apathetic chronic schizophrenics, an activating effect. Dosages employed range from 5 to 60 mg. daily, with a mean of 30 mg. daily. Comparative studies have demonstrated a therapeutic range equivalent to thioridazine and trifluoperazine. The only consistent side-effects appear to be extrapyramidal, which respond to anti-Parkinson drugs.

We should like to report briefly an uncontrolled pilot study in 16 chronic schizophrenic patients consisting of nine females aged from 36 to 73 years, mean 55 years, and seven males aged from 25 to 48 years, mean 35 years. The duration of illness ranged from 3 to 40 years with a mean of 16 years. The psychosis took a paranoid form in six patients and a hebephrenic form in 10.

Thiothixene was given by mouth in an initial dose of 5 mg. daily, increasing gradually to a maximum of 40 mg. daily for a total period of 12 weeks. A number of target symptoms and the overall response were rated weekly and the occurrence of side-effects was noted. Weekly blood counts, liver-function tests, blood urea, and urinalysis were performed.

Overall improvement was observed in eight patients. In two patients, with duration of illness of 22 and 7 years, the response was quite dramatic, the former being able to return home and the latter being allowed into the hospital grounds without supervision for the first time. The target symptoms which showed the greatest response were excitement (six patients), suspicion (seven patients), depression (four patients), anxiety (six patients), and social inadequacy (eight patients). Extrapyramidal side-effects were observed in 11 cases, but in only two were they severe enough to warrant the use of anti-Parkinson drugs. Four patients were withdrawn from the trial before the end of the 12-week period; two because of poor clinical response, one because of uncontrolled extrapyramidal effects, and one because of a raised serum glutamic pyruvate transaminase (110 S.F. units/ml.) after three weeks.

Much of the response could be a placebo effect, but in view of the failure of these patients to respond to previous drug therapy, and the dramatic response in two patients, we think it is worth proceeding to a properly controlled trial.—We are, etc.,

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Therapeutic Effects of a Thunderstorm

SIR,—In Zurich, in 1732, a report was published on an unusually violent thunderstorm which had arisen in the night between 30 June and 1 July of the previous year. The report was the work of Johann Jakob Scheuchzer (1672–1733), the Swiss scientist known in the history of palaeontology as discoverer of the fossilized remains of a giant salamander. Early in the century he published accounts of his travels in the Alps, with detailed notes on the life and occupations of the people (including an illustrated description of the process of cheese-making), on flora and fauna, the movements of glaciers, and barometrical determination of altitude. Scheuchzer has been called the founder of the physical geography of the Alps. By profession a medical practitioner, he became physician in ordinary to his native city Zurich.

After a description of the storm and some theological observations characteristic of the period, Scheuchzer's report makes the following comment*:

"And how, if I were to assert that the very Thunder-storm must serve to sustain and promote our Health, inasmuch as in such mighty Perturbances not only the Mountains, Valleys, Forests, and Rocks, but also our Bodies do quake, and that the Circulation of the Blood and of all the radical Moistures is promoted and that all the Discharges are more readily effected. Moreover, the Terrour itself which seizeth Men may make some Contribution, for that by its Agency the Influence of the sensitive Faculties upon the Upper Skin gains ascendency and the littlemost Vessels are comprest. To the which Cause I ascribe that various Persons of both Sexes, upon Inducement of this violent Storm, were some Days thereafter taken with a profuse Bleeding at Nose, as Instance a Widow of seventy Years, and *plethorick*, to whom I was summoned in the Night betwixt the third and fourth of July, and the same was freed by violent Bleeding at Nose from Giddiness and Head-akes, from the which she had suffer'd some Weeks before the Storm, and likewise eas'd of a Pursiness [or *Asthma*]."

Among conditions to which response may be expected Scheuchzer mentions pleurisy, running sores, rashes, "sickness of the limbs" (the term appears to have included "joynt-gout," "the palsy," in general "sickness wherein there is resolution of the sinews and limbs"),† and all kinds of fever.

Beyond such details as are given in the quotation no attempt appears to be made to postulate the mechanism of the process by which the alleged cure is brought about. It may or may not be relevant to point out that Scheuchzer died some four years before the birth of Galvani and 12 years before the birth of Volta. Whether the question of electric discharge comes into the picture or not, it would perhaps seem that the Swiss physician had some inkling of the nature of shock-therapy.—I am, etc.,

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* There appears to be a Latin version of the report, which I have as yet been unable to consult. The present excerpt is my own translation from the German into English as nearly equivalent as possible to the vocabulary and style of Scheuchzer.

† See Christian Ludwig, *Teutsch-Englisches Lexicon*, 3rd ed., Leipzig, 1765.