and of the Dakin and West type, and, in contrast, the immediate response to folic acid. This feature distinguishes the case from the previously reported cases of nutritional megalocytic anaemia occurring in temperate zones.

The rapid response to folic acid has been stressed recently by Kemp (1947), and the maximal reticulocyte response of 28% on the fifth day is in agreement with his findings.

It is debatable whether or not our patient would have responded to anahaemin or plexan if these drugs had been continued for longer periods. In Kemp's cases, though the response to "hepatex" was slower than to folic acid, all had shown some improvement within 18 days, whereas in our case after intense therapy not only was there shown a reticulocyte count of less than 1% but the red cell count was falling and giving rise to serious anxiety.

Oral preparations of proteolysed liver were not tried, and hence it is hypothetical whether response would have been obtained. Watson and Castle (1946) recorded a case in Boston, U.S.A., of nutritional macrocytic anaemia in a woman aged 76 who responded to intravenous injections of 20 ml. daily of the supernatant from the suspension solution of liver extract (Lilly) after failure with the usual liver extract, and also *Lactobacillus casei* factor, but the amount of the latter was only 1.3 mg. daily. Davis and Davidson (1944) have successfully treated several cases of otherwise refractory macrocytic anaemia, but none of them showed such a prominent nutritional aetiological basis as in our case.

The precise role of folic acid cannot be stated with certainty, and the mechanism of liberation from its conjugate by a liberating factor, as postulated by Davidson and Girdwood (1947), has not been widely accepted. Our patient was apparently deficient in folic acid but not in Castle's haemopoietic factor.

Summary

Nutritional macrocytic anaemia may occur, though rarely, in temperate climates, and is associated with a deficiency of protein. Previously recorded cases are reviewed and a new case is reported.

There was an immediate response to folic acid after the failure of intensive liver therapy.

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Workers at the National Institute for Research in Dairying and at the Courtauld Institute of Biochemistry have investigated the widely recognized fact that cows, on "going out to grass" in the spring, often give an increase in milk greater than the amount ascribable to the extra nutrients ingested. From their preliminary results, which were published in *Nature* (1948, **162**, 845), they concluded that the galactopoietic effects of spring grass in lactating cows may be due to the presence in the grass of oestrogen.

STREPTOMYCIN IN FINGER INFECTIONS

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The use of penicillin in infections of the hand has been shown to reduce sepsis, pain, and time of healing (Florey and Williams, 1944; Grossmark and Plewes, 1945).

Streptomycin is as yet little known as a local therapeutic agent, and we have attempted to compare the results of treatment with this newer agent with those of penicillin. Two types of infection—pulp whitlows and paronychias—are used for comparison because these infections were more true to type than others and because the more serious types, such as deep palm infections, were admitted to hospital and given systemic penicillin. No case which required systemic chemotherapy of any kind has been included.

Principles of Technique.—All cases presented were incised by standard procedures under general anaesthesia and with the use of a tourniquet. Streptomycin (5,000 µg. per g.) or penicillin (1,000 units per g.) was applied as a cream. This was smeared on a vaselined gauze wick which remained *in situ* for two days. Dressings were carried out in a special "perspex" dressing-box under continuous ultra-violet irradiation—all the dressings of each day being done by the same dresser with "no touch" technique. They were changed at intervals of two days, the discharge being cultured each time. Streptomycin or penicillin was applied until culture revealed "no growth."

Bacteriology

The frequency with which various organisms are isolated from a wound depends to some extent on the bacteriological technique employed (Williams and Miles, 1945). In our cases it consisted in swabbing the affected site and seeding on blood-agar plates; these were incubated aerobically and examined the following day. A very small quantity of the cream used in treatment was included on the plate in the penicillin series, and a hole containing streptomycin, 500 µg. per ml., in the streptomycin series; in practice this gave a good indication of the sensitivity of the organism grown.

The term "coliform organism" is used to include all Gram-negative bacilli having the cultural appearances of *Bacterium coli*, *Pseudomonas pyocyanea*, or *Proteus*; the streptococci isolated were all reported as "haemolytic streptococci," but grouping was not carried out as a rule; a coagulase test was done on all the staphylococci isolated, and was positive in all cases on first culture (coagulase-

TABLE I

Organism	Pulp Infections		Paronychia	
	Penicillin Series (60 Cases)	Streptomycin Series (66 Cases)	Penicillin Series (49 Cases)	Streptomycin Series (74 Cases)
		Primary	Infection	
Staphylococci	58	64	42	64
Staphylococci and streptococci	1	1	2	5
Staphylococci and coliform	1	1	3	3
Streptococci	—	—	—	—
Coliform	—	—	2	2
		Secondary Infection		
Streptococci	—	2	—	—
Coliform	12	—	11	2

negative staphylococci and atypical Gram-positive cocci were isolated from a few cases later during treatment, but are not included in the tables).

Primary infection refers to the organism isolated on first culture; secondary infection to those isolated from a second or later sample, if different from the first.

The striking fall in incidence of secondary coliform infection following the use of streptomycin is shown in two unselected series of 500 consecutive swabs received from the hand-dressing unit (Table II); one was taken during the penicillin period and one during the streptomycin period.

TABLE II

	No. of Swabs	Coliform Organism Isolated	% Coliform Infection
Penicillin period	500	193	38.6
Streptomycin period	500	37	7.4

Observations

In Table III the results of treatment and secondary infection rate are tabulated. The secondary infection rate is greatly reduced in the streptomycin group, and the number of days to "no growth" is considerably lower, while the average number of days off work is lower for the streptomycin cases.

TABLE III

	% Secondary Infection	No. of Days to "No Growth"	No. of Days off Work
Pulp Infection:			
Penicillin (60 cases)	20	9.0	9.4
Streptomycin (66 cases)	3	7.4	5.4
Paronychia:			
Penicillin (49 cases)	22	6.7	5.2
Streptomycin (74 cases)	2.7	4.8	2.3

Streptomycin was not used for acute suppurative tenosynovitis, because of lack of knowledge of the behaviour of this antibiotic within endothelial-lined cavities. In addition to the nine cases reported in 1945 eight cases have been treated by repeated aspiration of the tendon sheath and replacement with penicillin, with excellent results.

Conclusions

Streptomycin is a better local agent in the treatment of pulp infections and paronychias than penicillin.

Its use has resulted in a decrease in the secondary infection rate—more rapid healing with consequent decrease in the time lost from work.

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The Ministry of Health states that patients attending out-patient departments are often referred back to their general practitioners for the issue of certificates of incapacity for work required by the Ministry of National Insurance. This procedure, which accords with the notes appearing on the covers of pads of certificates provided by the Ministry of National Insurance, is an unnecessary burden on both the patient and the general practitioner, and also puts the latter in a difficult position, since the hospital, not himself, is responsible for the treatment. The Minister is therefore asking management committees and boards of governors to make available certificates of incapacity in the out-patient departments and in clinics. While the first (Med. 1) and final (Med. 2B) certificates must be signed by the doctor in attendance and must show the cause of incapacity, intermediate certificates may be signed by the authorized lay officers. A special certificate will not be provided, and Forms Med. 7 and 8 can be adapted from "in-patient" to "out-patient." Although these certificates contain neither the diagnosis nor the usual certification of incapacity for work, the doctor should be satisfied that the patient is in fact incapable of work. The hospital stamp should include the words "out-patient department."

Medical Memoranda

Perforated Gastric Ulcer Associated with Subcapsular Haemorrhage of Spleen

An unusual complication of a common acute surgical condition is recorded. No report of an analogous occurrence has been traced in the literature.

CASE HISTORY

A woman of 69 was admitted to hospital on April 16, 1947. Eleven hours previously she had been awakened by the sudden onset of severe abdominal pain which continued up to the time of admission as an agonizing upper abdominal ache. No vomiting had occurred, her bowels had opened the previous evening, and there was no disturbance of micturition. For forty years she had suffered from intermittent attacks of "indigestion" in the form of upper abdominal pain coming on two hours after food and relieved by alkalis and dieting. She had had no recent abdominal injury.

She was a fragile, anaemic-looking woman in obvious distress. Her temperature was 98° F. (36.7° C.), pulse 82, and respirations 28. The abdomen was rigid, moderately distended, and generally tender. Liver dullness was diminished; the epigastrium was the most painful area; and there was no radiation of pain to the shoulders or elsewhere. A diagnosis of perforated peptic ulcer was made.

At operation gas and yellowish effusion escaped through a midline epigastric incision. On the anterior surface of the stomach, midway between the lesser and the greater curvatures and one inch below the oesophageal level, was a large ulcer, which had perforated. The spleen was found to be friable and surrounded by blood and clot. The perforation was repaired with interrupted Lembert sutures and an omental patch. A transverse incision was made into the left rectus abdominis. The anterior splenic surface was friable and presented a raw appearance, as if the capsule had been destroyed, and it was bleeding profusely. The splenic pedicle felt normal and there was no thrombosis of its vessels. Splenectomy was performed, and after draining the splenic bed through a counter-incision in the flank the abdomen was closed in layers.

Continuous gastric suction and intravenous fluids were instituted post-operatively for thirty-six hours. She thereafter had a smooth convalescence. Three months later she wrote to say that she was well and free from "indigestion."

The spleen measured 10 × 6 × 2.5 cm. There was no macroscopic evidence of infarction. There was a diffuse subcapsular haemorrhage. Microscopically, extravasation of blood was seen beneath a necrotic capsule. The splenic vessels were sclerotic.

COMMENT

It is tempting to ascribe the capsular necrosis of the spleen to peptic digestion. But Price and Lee (1947) report that the spleen with its capsule intact is more resistant to peptic digestion than the seromuscular coat of the stomach, intestine, or gall-bladder. Accepting such experimental observations, one might postulate a subcapsular haemorrhage of the spleen before perforation of the gastric ulcer. In a frail person with some degenerative vascular changes a minor abdominal injury might well have escaped notice and caused such an "idiopathic" or "spontaneous" haemorrhage. In this connexion one of two cases of "spontaneous rupture of the apparently healthy spleen" described by Babson and Morgan (1946) is interesting. A man of 49 had a severe subcapsular haemorrhage and splenic rupture following operation for a perforated duodenal ulcer. The ulcer was sutured in the usual way, and five days later there was a sudden collapse and abdominal pain. After two days' conservative treatment the clinical signs suggested splenic rupture, and this diagnosis was confirmed at operation. A severe cough following the first