Recurrences

Parents often state that "Johnny has had German measles three (or more) times." Up till now we have been sceptically unbelieving, telling the mother that this was quite impossible. In this epidemic we have seen three children who suffered what was clinically a second attack of rubella within a few weeks of the infection first being diagnosed. A number of affected adults also told us that they had had rubella as children. Our views on reinfection have been revised.

Rubella and Pregnancy

During the epidemic we had many requests for advice from pregnant women who had been in contact with cases of rubella, either their own or their friends' children, or during their occupation as school teachers. We reassured those who were more than 16 weeks pregnant that no further action was necessary, and we endeavoured to obtain gamma-globulin for those who were less than 16 weeks pregnant.

Since there was a great demand for gamma-globulin during the epidemic, supplies were short and there was sometimes delay of a day or two in obtaining supplies for cases fitting the criteria of close contact. We always obtained supplies without any trouble, and are grateful to the local public health laboratory for its co-operation. In all, seven women who were less than 16 weeks pregnant were injected with gamma-globulin (750 mg.). None of them developed clinical rubella.

The question of what to do with a pregnant woman who is actually infected with rubella arose in one case. This was a para-3 who was 10 weeks pregnant when she developed the rash and enlarged cervical glands, having been infected from her young son. Following discussions and consultations a therapeutic abortion was eventually carried out. Although this was the only case it caused us (and the gynaecologist) much distress and concern.

Summary

An epidemic of rubella occurred in a London suburban practice of 6,500 between March and July, 1962.

A total of 355 patients (6%) were seen with rubella, but it is probable that a further 200 were infected (9%).

Children between 5 and 10 years of age were most affected. There was a prevalence rate of 25% in those actually seen in this age group, but the true incidence was probably well over 50%.

Although the infection was quite benign in children, the 74 adults who were infected suffered unpleasant symptoms. Transient arthritis occurred in 11 adults (15%) and the carpal-tunnel syndrome was noted in another three.

Gamma-globulin was given to seven women who were less than 16 weeks pregnant. One woman who was 10 weeks pregnant and became infected with rubella had a therapeutic abortion.

The bi-monthly journal, *Revista Cubana de Cirugia*, is the official publication of the Cuban Ministry of Public Health. Details may be obtained from the publishers, Oficinas de Publicaciones Medicas, Consejo Cientifico, Ministerio de Salud Publica, Habana, Cuba. The subscription is \$6 a year.

Preliminary Communications

Sensitivity of Mouse Pneumonitis Organisms to Ampicillin

Sensitivity of psittacosis-lymphogranuloma organisms to relatively high doses of penicillin and tetracycline has been known for some years (see Florey, 1952; Hurst, 1953). Penicillin can be regarded as an analogue of the cell-wall component, muramic acid, and its antibacterial action seems to be due to interference with cell-wall synthesis (Rogers, 1962). It is therefore relevant that psittacosis-lymphogranuloma organisms have been shown to possess mucopeptide cell walls containing muramic acid (Allison and Perkins, 1960). Psittacosis-lymphogranuloma organisms can, in fact, be regarded as small rather specialized Gram-negative bacteria multiplying within cells.

Recently ampicillin (6-[D(-)- α -aminophenylacetamido] penicillanic acid; "penbritin"), an acid-stable penicillin with a broad antibacterial spectrum rather like that of tetracyclines, has become available (Rolinson and Stevens, 1961) and been shown to have therapeutic value against certain Gram-negative as well as Gram-positive bacteria (Stewart *et al.*, 1961). It therefore seemed of interest to test ampicillin for activity against psittacosis-lymphogranuloma organisms, and experiments have been carried out with a typical member of the group, the mouse pneumonitis organism.

MATERIALS AND METHODS

Mice.—White mice, strain VSBS/NIMR weighing 12–14 g., were used.

Mouse Pneumonitis (Nigg).—This was the highly virulent Hampstead strain isolated by Sir Christopher Andrewes (see Andrewes and Horstmann, 1949) and maintained by passage in mice.

Penicillins.—Ampicillin and benzylpenicillin ("crystapen") were administered three times daily by subcutaneous injection in saline. Doses are shown in the Table. Administration was begun on the day of

Mortality in Mice Given 100 LD₅₀ of Mouse Pneumonitis Virus and Treated Daily for 14 Days with Three Subcutaneous Doses of Stated Amounts of Ampicillin and Benzylpenicillin

Doses:	500 μ g.	50 μ g.	5 μ g.	0.5 μ g.
Ampicillin ..	0/10	0/10	1/9	8/10
Benzylpenicillin ..	0/10	8/10	8/10	

In untreated controls the mortality was 10/10.

inoculation with mouse pneumonitis and continued for 14 days.

RESULTS AND DISCUSSION

Two sets of experiments were carried out with similar results, summarized in the Table. Untreated mice died between 5 and 10 days after inoculation. Both ampicillin and benzylpenicillin protected the mice, the former in lower dosage than the latter (50 μ g. as compared with 500 μ g.). The difference in cumulative mortalities between ampicillin and benzylpenicillin at the 50 μ g. dose level is statistically significant at the 1% level, and at 5 μ g. is significant at the 5% level. These results show that ampicillin is more effective than benzylpenicillin against mouse

pneumonitis, although the data are inadequate for probit analysis of relative potencies.

In previous studies (see Florey, 1952), as also in this, penicillin seemed to limit the multiplication of the organisms rather than to destroy them. When the lungs of apparently healthy mice at the end of the period of treatment were examined no lesions could be seen, but when they were homogenized and passed undiluted to untreated mice, the latter died with typical signs of mouse pneumonitis. Only one mouse in the whole series died after cessation of treatment, however, so the mice had clearly developed resistance (presumably mediated by antibody) against the organisms harboured in their lungs.

CONCLUSION

Mouse pneumonitis, a typical organism of the psittacosis-lymphogranuloma group, was more sensitive to ampicillin than to benzylpenicillin. Since ampicillin is non-toxic, acid-stable, and suitable for oral administration, it may be of value in treatment of human infections with organisms of the same group.

We are indebted to Beecham Research Laboratories for a sample of ampicillin and to Miss M. Mussett for statistical advice.

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Phlebotomus martini—a Probable Vector of Kala-azar in Kenya

The finding of a sandfly, probably *Phlebotomus martini*, naturally infected with a leishmania was reported by Heisch, Wijers, and Minter (1962). The strain has now been proved pathogenic to man and is therefore considered to be *Leishmania donovani*.

Further evidence incriminating *P. martini* as a vector of kala-azar has been obtained recently. Batches of wild-caught *P. martini* were fed on three kala-azar patients with positive blood cultures. Of the 58 sandflies which survived 72 hours after the infective feed, 28 were found to have leptomons in the anterior part of the midgut. A hamster inoculated intrasplenically with leptomons from the positive sandflies subsequently developed visceral leishmaniasis. Seventeen *P. schwetzi*, which also fed on the patients, remained negative.

During these experiments other specimens of *P. martini* were collected in the same area and examined for leptomons; of these, 19 were nulliparous, 8 in an advanced stage of the gonotrophic cycle, and 26 parous. All were negative, indicating that the infections in the flies used in the feeding experiments were derived from the patients and not previously acquired in nature.

These results show that *P. martini* is an efficient host for *L. donovani*, and that *P. schwetzi*, one of the few other species in the area that bites man, is not.

There seems little doubt that *P. martini* is an important vector of kala-azar in Kenya; transmission experiments will be attempted in due course.

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Medical Memoranda

Association of Peripheral Neuritis with “Autoimmune” Disease

There is some evidence to suggest that acute peripheral neuritis is due to an antigen-antibody disorder, particularly from the experimental work of Waksman and Adams (1956), and there is also some support for this view from clinical observations—for example, the response of the condition to steroid treatment. In the case of chronic peripheral neuritis, however, when diabetes mellitus, chronic alcoholism, toxic causes, and malignant disease have been excluded there remain a large proportion of cases of chronic polyneuritis for which no adequate cause can be found. In view of this diagnostic difficulty a report of two cases of chronic peripheral neuritis associated with autoimmune disease might be of interest.

One of these cases was associated with Hashimoto's disease, the other with polyarteritis nodosa and acute haemolytic anaemia. Peripheral neuritis as a feature of polyarteritis nodosa is well known, but the present report is believed to be the first of an associated haemolytic anaemia. Although polyneuritis has recently been described in association with carcinoma of the thyroid (Beardwell, 1961) and occasionally occurs in myxoedema, I have not been able to find an account of it associated with Hashimoto's disease.

CASE 1

A widow of 70 and mother of nine children had never been ill until March, 1960, when she noticed weakness of the legs, followed by pins-and-needles in her hands, which was progressive.

Examination showed bilateral foot-drop with slight wasting of the anterior tibial muscles. The marked weakness of the legs and slight weakness of the arms were both more severe distally. The tendon reflexes in the upper limbs were present and equal. The knee- and ankle-jerks were absent; plantar responses could not be elicited. There was severe impairment to all forms of sensation up to the knees, and slight impairment in the hands up to the wrists. The thyroid gland was diffusely enlarged and firm. There were no palpable lymph nodes in her neck.

Investigations revealed a normal blood count and a sedimentation rate of 40 mm. in one hour. Liver-function tests, plasma proteins, and electrophoretic strip were normal.