action was noticed. Both relaxants and anaesthetics of all types were potentiated by MY 301; in this study its greatest utility was as an adjuvant to these drugs, and not as a muscle relaxant unaided by at least surgical anaesthesia. The use of MY 301 appeared particularly indicated in anaesthetic practice for toxic and hypovolaemic patients.

The MY 301 used in this study was kindly provided by Continental Ethicals (Pty.) Limited.

**ROVE BEETLE DERMATITIS IN SOUTH WEST AFRICA**

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During the month of December 1962, large numbers of people in Tsumeb were affected by dermatitis as a result of contact with a species of Rove beetle (Fig. 1), which was kindly identified by Mr. G. Favel, Brussels, as belonging to *Paederus sabaeus* Erichson (Fam: Staphylinidae). A large part of South West Africa, more especially the northern area, experienced the same phenomenon, and it was generally accepted that the unusual numbers of moths were responsible. This misleading idea is easily explained by the fact that the first skin reactions appear only one or two days after contact takes place with a crushed beetle, and a further one or two days pass before the typical blisters are formed. Furthermore, the beetles are small, measuring only about 1 cm. in length, and are not conspicuous.

Théodorides' (1950) divided the dermatitis caused by *Paederus* species in various parts of the world into three stages, the erythematous one, characterized by a red spot or red patches accompanied by a tickling sensation, the vesicular stage during which blisters appear, one or two days after the previous stage, and the squamous stage, in which skin reparation is achieved in 5-8 days. The vesicles become flattened and dry, and the skin of the affected area peels off gradually. A pigmented spot may stay for several months.

Patients who attended the Tsumeb Hospital showed areas of acute confluent dermatitis on exposed parts (face, neck, arm, leg, and often eye), varying in size from 1 cm. to 10 cm. in diameter, often with outlying smaller raised macules surrounding the main plaque. In many cases there was a linear dermatitis 5-10 cm. long, as though seared by a hot iron, apparently where the insect had been rubbed along the skin in the act of killing it. Another feature was the exact duplication of the lesion on contact with another area of skin.

Within two or three days the lesion vesiculated and the vesicles tended to umbilicate and contained seropurulent fluid. The vesiculated area then had the grey appearance of a diphtheritic membrane. Finally the lesions dried, exfoliated, and in some cases left a smooth scar, occasionally slightly pigmented.

In contrast with an East African species, namely *Paederus eximius* Reiche (=crebrapunctatus Eppelsheim), the skin lesions caused by *P. sabaeus* were essentially painless, though a slight burning sensation, and later itching, did occur. Cases of severe pain were probably due to a secondary infection. ‘Kissing’ lesions and spread of the irritant with the fingers were typical and were of special significance with respect to eye infections.

Dermatitis caused by *Paederus sabaeus* was first reported by Rodhain and Houssiau' (1915) and Bequaert (1921) from Leopoldville, then by Gordon' (1925) from Freetown, and a few years ago the South African Institute for Medical Research was informed of an outbreak in Nyasaland, which seriously handicapped the native labourers for several weeks. Lewis (1958) reported that in the Sudan, too, *P. sabaeus* is known as an occasional cause of dermatitis.

In Nairobi and other parts of Kenya, *Paederus eximius* caused dermatitis, and especially a severe conjunctivitis, which is known as 'Nairobi eye'. The irritant contained in the body-fluid is more efficient than that of *P. sabaeus*. Roberts and Tonking (1935) studied *P. eximius* experimentally with a European volunteer. The contact spot reddened the next day, and after another day inflammation set in. On the 3rd day the blistering stage was reached, accompanied by constitutional disturbance and slight headache. Another 24 hours later pains were experienced in most parts of the body, particularly in the joints and the back, the headache was severe, and the blisters had grown large and fierce and coalesced almost completely. On the 5th day after contact the blisters had further enlarged, and the reactions worsened, so that treatment with MgSO₄ compresses was commenced. The blisters and the constitutional disturbances then disap-
peared within the next 2 days, but scars persisted for 8 months.

In India Paederus fuscipes Curtis has been reported as causing a vesicular dermatitis, which is called 'spider-lick' (Isaac, 1933). This species is also found in some parts of Africa.

The genus Paederus has a world-wide distribution, and comprises several hundred species that are extremely difficult to diagnose. Identification should always be left to an expert. They are characterized by beautiful colouring, and in many species the head is black, the thorax red, and the elytra green or blue; the abdomen is red anteriorly and black posteriorly.

Isaac' (1934) studied the life-cycle of Paederus fuscipes in India. The beetles became active in spring and then multiplied rapidly, all stages being found simultaneously in abundance. Under favourable conditions several generations occurred, and the greatest density was found in May and June, when the vesicular dermatitis became most widespread. The beetles swarmed at night and were attracted by artificial light, entering dwellings in large numbers. They developed in the damp soil near the banks of water courses.

In Freetown, Sierra Leone, Paederus sabaeus is fairly common during June, July and August, disappears during the following 2 months, and reappears in the middle of November. This species is also nocturnal and attracted by artificial light. Like Paederus fuscipes and other species of the genus, P. sabaeus and P. eximius are always associated with swampy or riverine areas.

Roberts and Tonking* recommended treating the blisters with MgSO4 compresses, which are said to give immediate relief to the condition. In the Tsumeb Hospital cortisone or antihistamine preparations were found to have no beneficial effect, and by favouring secondary infection, appeared to be even harmful. Minor lesions benefited by the application of methylated spirits, whereas more severe lesions were treated by protection and the application of an antibiotic powder to prevent secondary infection.

**SUMMARY**

An outbreak of dermatitis caused by a beetle Paederus sabaeus in South West Africa is described, and reference is made to other species of Paederus that cause dermatitis. The beetles and their habits and treatment of the dermatitis are described.

**REFERENCES**


**THE HOST-RANGE OF PROTEUS MORGANII BACTERIOPHAGES**

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The host-ranges of 33 phages active on Proteus morganii were investigated. Sixteen of the phages were isolated from sewage and the remainder from lysogenic strains of P. morganii. The phages could be differentiated from one another by their host-ranges. Apart from isolated actions of some phages on strains of P. rettgeri and Providence, a number of temperate phages and all the phages derived from sewage caused productive lysis of one or more (usually many) strains of P. hauseri, Escherichia coli and Shigella spp. A few E. coli, P. hauseri and a single strain of Sh. flexneri were lysed by all 16 sewage phages. The efficiency of plating of the phages on heterologous hosts approached or was unity. It is concluded that P. morganii may be an intermediate group between the genera Escherichia and Shigella and the Proteus group of organisms.

LYSOGENY IN ALCALIGENES FAECALIS AND THE HOST-RANGE OF A. FAECALIS BACTERIOPHAGES

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Of 86 strains of A. faecalis investigated, thirty strains proved lysogenic for one or more of the 86 strains. Twenty-three phages active on A. faecalis strains were isolated from sewage.

The 53 phages were differentiated from one another through their host ranges on 86 strains of A. faecalis. When tested against 110 Providence and Proteus cultures, a large number of E. coli and Pseudomonas aeruginosa as well as Shigella and Salmonella spp, 5 of these phages productively lysed one or more of 4 Proteus vulgaris strains, 14 P. mirtabiliis, 2 P. rettgeri and 6 Providence strains.

These 5 A. faecalis phages attack members of 2 families and also indicate a relationship between members of the Proteus group and between the latter and Providence organisms.

**THE INHERITANCE OF SUSCEPTIBILITY OF CONGENITAL GOITRE IN AFRIKANDER CATTLE**

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In the Republic of South Africa and Southern Rhodesia congenital goitre is confined to the Afrikander breed and its crosses, with one exception only. It was brought to our notice, for the first time, during the calving season of 1934 on a farm in the Middle-East Cape Province, and subsequently again about 20 years later on a farm in the Lydenburg and the Rustenburg Districts, Transvaal. The affected calves, as in the first case, were the progeny of a particular bull or from others either closely or distantly related to it, and the condition was suspected to be hereditary.

It is of interest that the bulls incriminated on the last two farms and on that in Southern Rhodesia are fairly closely related to a sire used on the first-mentioned farm when congenital goitre was fairly prevalent.

The results of a breeding experiment carried out at Onderstepoort, a non-goitrous area, indicate that the condition is presumably hereditary and of a recessive nature. Details will be discussed later.