

## Letter to the Editor

Ten years ago I ventured to write a letter on reactions in leprosy in an effort to clarify a subject which at that time seemed very confused, and I suggested that we should refer to tuberculoid reaction, borderline reaction, and lepromatous reaction Type 1 and 2 (Jopling, 1959). Since then there have been many studies on this subject, the latest being that of Ridley (1969). His paper has served a useful purpose in differentiating "reversal reactions" and "downgrading reactions", but his classification consisting of 4 types of reaction is, I fear, too academic to be generally accepted by leprosy workers.

If I may be permitted to modify his classification for general use, I should like to suggest that the term "lepra reaction" be used to cover

all types of reaction, and that this be described under 2 headings since 2 fundamentally different pathological processes are at work. In one there is a rapid change in the host-parasite relation—in some cases for better, and in other cases for worse. The clinician sees a rapid development of erythema and swelling of one or more leprosy lesions, often associated with enlargement of the nerves, pain and there may be oedema of the extremities. This may occur in any of the determinate types of leprosy (tuberculoid, borderline, or lepromatous). The histologist can tell us if the reaction is a "reversal" ("upgrading") reaction with the defence mechanism gaining the upper hand, or a "downgrading" reaction with the invasive mechanism in the ascendant. I would call this "Type 1 reaction".

TABLE I  
Classification of lepra reaction (reaction in leprosy)

<i>Name of reaction</i>	<i>Type of leprosy involved</i>	<i>Main clinical features</i>	<i>Main histological features (in dermis)</i>	<i>Main haematological findings</i>
Type 1 reaction	Tuberculoid  Borderline Lepromatous	Erythema and swelling of some or all of the leprosy skin lesions Nerve swelling and pain Oedema of extremities	In "reversal reaction" there is oedema, diminution in number of acid-fast bacilli, and increase in defensive cells such as lymphocytes, epithelioid cells, and giant cells In "downgrading reaction" there is oedema, increase in acid-fast bacilli, and diminution in the number of defensive cells	Nil
Type 2 reaction	Lepromatous Some cases of borderline-lepromatous	Any of the following, singly or in combination: erythema nodosum leprosum, nerve pain, bone pain, joint pain, fever, malaise, lymphadenitis, rhinitis, epistaxis, iridocyclitis, epididymo-orchitis, proteinuria. In severe cases, erythema nodosum leprosum lesions may become vesicular or bulbous and break down	Oedema. Polymorphonuclear infiltration of dermis. Swelling of capillary endothelium. In necrotizing reactions there is capillary necrosis with fibrinoid patches in and around affected vessels	Polymorphonuclear leucocytosis. Raised erythrocyte sedimentation rate. Increased serum gamma globulin. Anaemia sometimes

On the other hand, those suffering from lepromatous leprosy, and some borderline-lepromatous (BL) patients, may undergo an antigen-antibody reaction with features similar to the Arthus phenomenon and/or to serum-sickness (Wemambu *et al.*, 1969). These include *erythema nodosum leprosum* (ENL), pain in nerves, bones and joints (with or without effusion), rhinitis, epistaxis, iridocyclitis, epididymo-orchitis, lymphadenitis, fever, malaise, and proteinuria. Here there is no question of upgrading or downgrading, nor of cell-mediated immunity, and to the clinician the leprosy lesions appear unaltered (although the histologist may note some oedema in them). The term ENL is widely used to describe this type of reaction, but is unsatisfactory since some of the above-mentioned manifestations may occur *without* ENL. In such cases the term ENL is

clearly a misnomer. I would call this "Type 2 reaction".

Table 1 is designed to clarify the above remarks.

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#### REFERENCES

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 RIDLEY, D. S. (1969). Reactions in leprosy. *Lepr. Rev.* **40**, 77.  
 WEMAMBU, S. N. C. *et al.* (1969). Nodosum leprosum: a clinical manifestation of the Arthus phenomenon. *Lancet* *ii*, 933.