HEALTH

Why Do Backs Ache?

KNOWLEDGE of the causes of backache is so rudimentary that one of the principal treatments, that of attaching weights to the spine, goes back to Hippocrates. The Institute of Directors has now launched an appeal for £100,000 to investigate the origin and treatment of backache. Within a week of opening, some £10,000 has already been collected.

Britain loses an annual ten million man-hours, as far as can be estimated, from backache, about half of which occurs in industry. This statistic, though a potent stimulus to the Institute of Directors, was not the origin of its interest in backache. One of its members, Mr Ernest Grundy, who is chairman of the Grundy engineering group, refused to take no for an answer when told by the medical profession that little could be done to cure his own backache or to cut down the time lost by his employees with similar problems. Mr Grundy presented the institute with a cheque for £1,000 as the basis for a fund to open a back research centre.

Plans for tackling research on backache will depend partly on the sum of money received, but if the full target is achieved, about £50,000 will go to the Welsh National School of Medicine where Dr John Glover is already conducting research on back pain. Dr Glover, the senior lecturer in occupational health, has been interested in this field for some time. In 1953 he discovered that most commonly occurring back pains are associated with an area of hyperaesthesia, or heightened sensitivity on the skin. Although back pain and the areas of hyperaesthesia always occur in the same segmental area of the spinal cord, the relation between them is at present obscure. The hyperaesthesia provides an objective sign for assessing back pain, since it is also associated with areas of altered electrical resistance on the skin, which is probably caused by slight sweating.

Until the end of last year this research was supported by a grant of £18,000 from the Nuffield Foundation. Dr Glover intends to make two uses of any funds that may be supplied by the Institute of Directors. The first is to continue research into the causes of back pain, the second is to conduct statistically controlled clinical trials of the various methods at present used to treat patients. So far, there has been no comparative evaluation of such methods, which include heating or manipulating the spine, attaching weights to it or simply sending the patient home to bed for six weeks.

The medical centre of the Institute of Directors plans to conduct similar trials in London. Two centres will probably be opened, one for private and one for National Health Service patients. Another project, which would depend on the fruits of future research, is to instruct medical staff at factories or docks on the best ways of lifting weights and of treating back pains when they occur.

CONSTRUCTION

Building Blocks

BUILDING components that are freely interchangeable are still a pipe-dream in Britain, but one step further towards this goal has been made by a new publication on educational building from the Department of Education and Science (*The Coordination of Components for Educational Building*, Building Bulletin, No. 42, 1968; HMSO, 5*s*. 9*d*.). Interchangeability of components used for school buildings and for a wide range of other building types, a national "pool" of dimensionally related components, would reduce the variety of components which industry has to produce and would lead to economies in production. At the same time the effective range of choice open to individual designers of buildings would be increased.

The local authority building consortia, for example CLASP (Consortium of Local Authorities Special Programme) and CLAW (Consortium of Local Authorities in Wales), have been outstanding in recent years in coordinating building programmes resulting in the reduction of managerial and professional work, faster building, and a high level of design and detailing of the buildings. Some privately sponsored school building programmes have also been successful. But it is recognized that there is more improvement needed both in terms of cost and in the choice of components offered to the systems. Although an enormous quantity of components is produced by industry for the school building systems, it is divided among a number of systems whose detailed requirements differ. Consequently the demand for some components is relatively small and factory production less economic than it might be.

Building Bulletin, No. 24, published by the department in 1964 (*Controlling Dimensions for Educational Building*) was the first stage in establishing a framework for the development of a common pool of shared components. The broad framework of dimensions set out in this bulletin as being acceptable for school buildings has now been adopted by all consortia and by many privately sponsored systems. A Technical Coordination Working Party with representatives from all the consortia and the Building Research Station was then established to give more extensive recommendations on the performance of components. The latest bulletin, No. 42, was produced by the department in cooperation with this working party. In essence it tries to identify those characteristics which must be standardized if components are to be shared by many users. It also goes some way to establish these standards in terms of the desired performance of components and suggests conventions of component assembly.

The coordinated production and use of building components require an overall agreed framework covering the whole building process. The bulletin is therefore arranged so as to follow the general sequence of this process. The four main stages are: *a*, division of the building into suitable "packages"; *b*, specification of performance standards for these "packages"; *c*, design and manufacture of components on the basis of these standards; and *d*, selection of components and their assembly into a building.

Many of the proposals put forward in the bulletin (for example, those dealing with jointing, tolerance and ability to accept fixings) are in fact suggestions, not recommendations. These are questions that will have to be settled in time for them to affect the design of metric components. A further bulletin will be published with more detailed aspects of the framework.