Finally, we have still got to say, "There is no cure for psoriasis"; but there is some hope that within the lifetime of many of us the aetiology will be discovered and either a cure or else adequate preventive measures may become available.

I have to thank my colleagues, Dr. E. Lipman Cohen, Dr. A. Scott, and Sister O. M. Lowe, for data which I have employed in the preparation of this paper, and record my indebtedness to the late Mr. J. R. Elliott, Pharmacist to St. Bartholomew's Hospital, for his advice.

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NOISE AND THE PATIENT IN HOSPITAL

A PERSONAL INVESTIGATION

BY

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The study and control of noise in the modern world have received much attention, varying from attempts at suppression of the tremendous noise of jet planes to that of noise in hospitals.

The following report is of a personal study carried out in the Royal Northern Hospital, London, of the views of adult patients on noise, correlated with their home background and tenor of their work. Each patient was asked verbally what noise, if any, disturbed, worried, irritated, or kept him or her awake while in hospital; whether their home and work lay in a quiet or noisy neighbourhood; the number of young children living with them; the type of housing (flat, council house, or own home); and, lastly, the relation of their home and place of work to railways, main roads, etc.

The subjects interviewed were mostly in-patients during the period of investigation, but some had been discharged and were attending out-patient clinics.

The hospital buildings stand in a non-industrial but very busy traffic region in London, and face the main road carrying heavy lorries continually.

Of the 114 patients questioned, many were in large wards (25–30 beds), some were in small wards (up to six beds), and a smaller number were in single rooms. More than half those in single rooms were private patients. The patients questioned came from all walks of life and occupations: professional men and women, housewives, clerks, bus-drivers, labourers; in fact, their work varied from that of a busy mayor of a large provincial city to a mortuary attendant; the latter had perhaps the quietest occupation of them all, and a blacksmith one of the noisiest. The most tranquil home belonged to a solicitor living in an isolated part of North Wales. At the other extreme, a wife with three

energetic young children lived over the incessant clatter of a large dairy factory in central London.

The length of stay of these patients in hospital ranged from a few days up to about four months. Their ages fell between 17 and 82 years. All had normal hearing and none were under prolonged or heavy sedation. About 63% were in surgical wards and the remainder in medical wards.

On analysis of answers given at the personal interviews on direct questioning, the outstanding findings were as follows: 50% of patients had no complaints of noise at all; and 50% complained of noises which disturbed or worried them. This figure is in complete accordance with that given by King Edward's Hospital Fund for London (1958) in its report on the number of complaints of noise in eleven London hospitals.

Of the total number studied 50% of males and 50% of females made complaints of noise. Fewer single than married patients complained; patients with noisy surroundings, either in the home or at work, made fewer complaints than those with quiet backgrounds. Patients with quiet homes and quiet occupations thus complained much more than those with a noisy environment.

Patients under 21 years of age and over 65 complained much less than those in the middle group—that is, from 21 to 65.

Patients admitted to single rooms complained much more than those admitted into wards. Of these patients 63% complained, but only 44% of those in wards. This difference is, I think, explained by the fact that patients in a general ward are interested in ward activities. The patient in a single room usually has no such distractions, and thus his reaction to noise is accentuated. Slightly more patients in medical wards complained than did those in surgical wards.

Patients interviewed after their discharge from hospital, and subsequently attending as out-patients, gave a similar story. 50% also complained of noise while in hospital.

Noises in Hospital

The noises which disturbed patients were predominantly those made by other people, especially by patients talking, snoring, calling out, etc., particularly at night and early morning, and to a slightly less extent by the voices of the nursing staff. Almost 50% of the noises complained of were therefore made by the human voice.

Of the "internal" hospital noises (those occurring within the building from any source) the following were the most disturbing, apart from voices, and constitute approximately 25% of the noises complained of: doors banging; bedpans clanking; articles dropped in wards or corridors; squeaking trolley-wheels; bells and buzzers; the scraping sound of moved bedside tables and chairs, and finally the crashing of lift gates. The hospital plumbing system—for example, dripping taps, etc.—caused very few complaints.

"External" noises (those from courtyards, grounds, or roads) caused about 25% of the complaints, especially of traffic—in particular, the sudden explosive acceleration of motor-cycles and, to a less extent, the noise and movement of ambulances and staff cars in the hospital car park.

Only one woman (a private patient accustomed to very quiet surroundings) interviewed in a single room had come into hospital armed with special ear-plugs to deaden the noise at night. Two patients in a general ward informed me that they wore the wireless headphones (switched off) to minimize the noise about them at night.

Recommendations arising out of the Inquiry

1. When possible, patients who are very restless, talkative, senile, or disturbing to others in any way should be placed in a single room or small ward.
2. Single rooms should also be used for patients with conditions such as headache, sinusitis, etc., which make them especially liable to be distressed by noise of any kind.
3. All doors should be checked routinely to ensure that they shut quietly and efficiently.
4. Appliances to prevent the banging of doors and lift gates should be used.
5. All movable furniture should be supplied with buffers.
6. Trolleys should be particularly checked for squeaky wheels.
7. In special cases simple ear-plugs should be issued at night.
8. The practice of bringing bed-pans to patients very early in the morning should be reviewed.
9. In the building of future hospitals the increasing noise of traffic should be borne in mind, and hospitals sited some distance from main roads.

Finally, apart from elaborate and expensive methods of reducing noise in hospitals, a practical, simple, and immediate solution seems to lie in the use of waxed ear-plugs (obtainable at chemists') at night for patients in noisy wards or in rooms near traffic routes. Perhaps then the routine use of nightly sedatives to ensure patients' sleep could be reduced.

Summary

From a personal survey of the views of 114 adult patients on noise in hospital, correlated with a detailed picture of the background noise or quietness of their home and work, the fact emerged that one out of every two patients complained of noise, the chief noise being made by the voices of fellow patients or staff, particularly at night and early morning.

Some suggestions are made regarding the lessening of noise in hospitals.

I am grateful to the consultant staff of the Royal Northern Hospital, who kindly allowed me to interview their patients. I am also indebted to Dr. A. Wheildon, senior assistant medical officer of health, Area 3, Middlesex County Council, and to Mr. Anthony Green, consultant radiotherapist, Royal Northern Hospital, for their helpful advice in this investigation.

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SYMPOSIUM ON HUMAN GROWTH

[FROM A SPECIAL CORRESPONDENT]

The annual symposium of the Society for the Study of Human Biology bids fair to become an established event in the scientific calendar. Certainly the programme of this year's symposium, the second, held on November 28 at University College, London, equalled its predecessor in interest and quality. Yet the themes could hardly have differed more; last year the topic was "Natural Selection in Man,"* this year "Human Growth." As so often happens with small societies, there was a strong touch of informality in the proceedings; the meeting forgot to record its indebtedness to the organizer of the programme, Dr. G. A. HARRISON, of Liverpool; and of course there were the flashes of occasional gems, as when Professor J. Z. YOUNG, F.R.S., introducing the elder statesman of primatologists, Professor A. H. Schultz, of Zurich, as one who not only dissected and prepared his own specimens but also shot them, remarked that this example could profitably be followed by many human biologists.

Patterns of Primate Growth

Professor SCHULTZ opened the symposium with a contribution on "Age Changes in Primates and Their Human Modifications." Whereas the changes with age in the human body had been intensively studied, it was not yet possible to state, he said, in what ways and how far these ontogenetic processes followed patterns that occurred generally in primates or had become specialized in man. The effects of phylogenetic change observable in adults of different species were essentially due to changes in the inherited patterns of growth. These Professor Schultz set out to examine, with reference to a wealth of examples. The adult location of the occipital condyles, for instance, resulted from the differential rates of growth of the parts of the skull in front of and behind them. There was a clear increase in the duration of the prenatal, infant, juvenile, and adult periods of life as the primate scale was ascended. There was also a large increase in growth in weight in the latter part of pregnancy particularly marked in man, yet, in the ratio of the weight of the newborn to that of the mother, man remained within the range of the lower primates. In difficulty of labour humans resembled monkeys such as the macaque and the proboscis monkey, while the apes tended to experience easier births. This was clearly related to the differing degrees to which the foetal dimensions approached those of the birth canal; hence the rate of terminal prenatal growth was in some way linked with the size of that canal. In some features man fitted into the simian range, as in the degree of ossification at birth or of post-infantile skull change; in others he merely exhibited an extension of a trend that was observable as one ascended the primate scale, as in the time of appearance of skin colour, the time of fusion of the sternal segments, or the shift in the sequence of dental eruption.

In Professor Schultz's view, the most consequential single modification of man's individual development had been the extreme increase in his total period of growth, which was the culmination of a general trend affecting also the non-human primates in widely differing degrees. While the causes of all such modified age changes were still unknown, more and more of their manifold effects could be recognized. The features which distinguished man were largely due to differences in timing during development. There was a remarkable orderliness in the progress of maturation and a surprisingly uniform sequence of closure of epiphyses. Of equal significance was the conclusion that these orderly patterns could vary extensively in their correlations with chronological age—they could be individually retarded or accelerated in regard to the entire skeleton or only to parts of it. Closely corresponding to this intraspecific constancy in general sequence but individual variability in detailed

*See *Journal*, November 22, 1958, p. 1288.

The Joseph P. Kennedy, Jr., Memorial Foundation has given \$1m. to establish the Joseph P. Kennedy, Jr., Laboratories for Research on Mental Retardation at the Massachusetts General Hospital. This is the first of the endowed scientific projects planned under the anniversary programme to celebrate the 150th birthday of the Massachusetts General Hospital in 1961.