arteriosclerotic old man, who was not ataxic, and whose vermis contained only a few such neural myxoelemma bodies, and they point out that the bodies have not been found in the cerebellar degeneration associated with chronic alcoholism nor in that due to nutritional deficiency. Consequently, though they may be altered corpora amylacea, or artifacts owing to the fact that the material had been fixed in one case for five years, they may be specifically related to the condition. The finding needs to be confirmed in other cases before its true significance can be assessed, and in the meantime an acceptable explanation of why some patients with hypothyroidism become ataxic remains wanting.

Dermal Ridges and Rubella

Disturbances in the foetus are often associated with distortions in the alignment of dermal ridges on hands and feet. The ridges are formed during the third month of foetal life, and it is at this time that abnormalities in the growth process may distort them. But there are regional differences in the time of ridge differentiation, so that the process is completed on the fingers first, while the sole comes last.

The foetus may deviate from the normal pattern of growth for various reasons—for example, by the action of abnormal genes, by chromosomal aberrations, or by poisoning. Sometimes the cause remains unknown. An example of a non-genetic factor causing congenital malformations of dermal ridges is thalidomide. Changes in form of the hands and feet, irrespective of origin, are accompanied by some distortion of the dermatoglyphics.

Study of dermatoglyphic patterns on hands and feet can throw light on developmental disturbances. For instance, in Down's syndrome (mongolism), due typically to trisomy (i.e., triplication) of one of the smaller chromosomes, the arrangement of dermal ridges on palms is characteristic. Other characteristic dermatoglyphic anomalies are found in cases of trisomy of chromosomes 13–15 and 17–18. But in some cases of chromosomal aberration, though a series of patients show significant differences from a control series from the same population, it is often difficult to identify the individual abnormal patient on dermatoglyphic data alone. Such is the case in Turner's and Klinefelter's syndromes, in which the sex chromosomes are aberrant.

Recently the dermatoglyphics of infants whose mothers were exposed to rubella virus during pregnancy have been studied. Milton Alter and Robert Schulenberg, of the University of Minnesota, examined 28 rubella-damaged white American children, 15 males and 13 females. These differed from a control series in having a higher frequency of whorls on fingers; a reduced ridge-count between the palmar triadius lying under the index and middle fingers respectively; a wider adt angle (denoting an axial triadius more distally placed on the palm); a tendency to more patterns on the palm; and a higher frequency of transitional and simian lines (that is, distal transverse flexure creases). In the high frequency of wide adt angles and of simian lines, the results agree with those of an earlier study by Ruth Achs and her colleagues, also on American patients. In other respects the findings differ. A wide adt angle is found in various pathological conditions (for example, mongolism) and is generally taken to indicate growth disturbance at the time of ridge formation. It is surprising to find peculiar dermatoglyphics in the rubella-damaged individuals when Alter and Schulenberg state emphatically that "limb development in rubella-damaged children is normal," for developmental involvement of hands and feet appears to be a basic requirement for the dermal ridge arrangement to be affected.

The authors rightly point out that "The time of infection with rubella virus is likely to play an important role in determining the kind of dermatoglyphic abnormality which is observed." Further, the dermatoglyphics of a foetus infected during the first month of gestation might not show anomalies. As the findings were so variable the authors conclude, "It is unlikely that the deviations from normal observed will aid in diagnosing the individual case of pre-natal rubella damage."

Since the publication of Alter and Schulenberg's results some interesting observations have been made on the so-called American cases of congenital rubella. Two of these had what is called an arch tibial pattern (but is really absence of pattern, there being no triadius) in the region of the sole under the hallux on both feet, while the third had this feature on one foot. An arch tibial occurs in the hallucal area on one foot or both feet in about 50% of mongols, but is rare in the general population. The absence of a triadius is due to absence of pressures during prenatal development. In each of the three cases under consideration Down's syndrome could be ruled out, as chromosomes were normal and there were no clinical manifestations.

To obtain useful information from dermatoglyphic studies on this condition an estimate of the age of each focus at the time of infection would be necessary.

Health of University Students

The practice of dealing with student health is a comparatively recent one in Britain. Indeed, up to the second world war the undergraduate was regarded as being of an age not to need much medical attention. He suffered from influenza, the occasional inflamed appendix, and athletic injuries; and the last, paradoxically, could be said to be a measure of his usual general fitness. No special arrangements were made for him and he took his turn with other patients in a doctor's surgery. The incidence of these physical maladies has altered little. But although 30 years ago the frequency of mental illness was probably much the same as it is today, the attention given to this other side of student health has lagged far behind.

The problems of a particular university are analysed and solutions are recommended in a recent report from Oxford. A student usually leaves home at 18 or 19 for three years of university life in a town he has never seen before. His medical troubles, physical and psychological, have been cared for from cradle to youth by his family doctor whom he knows, accepts, and more than likely also respects. He is healthy and would not register with a doctor in the university town for a mere three years unless told that he should. But he has been thrown into a new life of competitive academic intensity culminating in an important examination, at a fixed