processing system. In the subsequent discussion, it was suggested that hiring computer time by means of an ordinary telephone link is probably the cheapest way of processing results.

After a brisk discussion, it was decided to form a pyrolysis subsection of the discussion group under the chairmanship of C. R. Jones (Vinyl Products Ltd, Carshalton).

ANTHROPOLOGY

Unity and Fragmentation

from a Correspondent

THE Japanese satisfied the rival claims of two university cities to be host to the eighth International Congress of Anthropological and Ethnological Sciences (September 3–10) by transporting it from one to the other half way through. The congress, meeting for the first time in Asia, spent its first five days in Tokyo when administrative facilities and participants alike were whisked off to Kyoto. Western participants preferred the magnificent Kyoto International Conference Hall to the modernity of Tokyo, though the pace of the meetings was such that there was little time for the appreciation of either during the sessions.

The international situation caused gaps in the planned programme, and the economic situation diminished the size of the delegations from several countries, but there were nevertheless more than 1,000 participants, some 120 invited presentations and more than 500 offered papers. But these numbers are not as impressive as they may seem. As Professor Oka stressed in the opening address, the congress embraced the concept of the unity of anthropology. Its aim, the closer integration of the cultural and biological facets, was in that respect backward looking. For the days are gone when anthropology was a single discipline and when workers in one branch understood what those in others were doing. This was particularly clear at the congress, for in the biological sessions social and cultural anthropologists were conspicuously absent, and there were few linguists to be seen in the archaeological sessions. Yet perhaps it was this fragmentation which, in retrospect, was responsible for the success of many of the sessions. In intimate gatherings of a few authorities, where most knew each other, discussion, if not furious, was fast, provocative and stimulating. Outstanding in this respect among the biological sessions were the symposia on growth, selection and differential fertility and some of the sessions on human genetics and on primate studies.

The presentations on topics which the Japanese have made peculiarly their own were especially interesting. Biological anthropology in Japan stems, of course, from European interest at a time when the Dutch were the only people from the west allowed to trade there. The earliest compilations of Japanese physical measurements were by Mohnike (1852), by van Siebold a little later and by Wood (1864). Similar measurements of the Ainu were made by Baelz (1883). But with the foundation of the Anthropological Society by Shogoro Tsuboi in 1884 and of the journal *Zinruigaku Zasshi* in 1886, and with the establishment of the Department of Anthropology in the University of Tokyo in 1892, the subject began to develop a number of characteristic specialities often antedating European

interest. Thus at the beginning of the century, Professor Adachi was among the earliest proponents of studies of variation in the soft tissues and Kikuchi was among the first in the world to advocate body measurements of children in Japan. The result of this tendency to evolve in a direction rather different from that in Europe was conspicuous at the symposium. Of particular interest were the Japanese contributions on physiological variations, variations in work capacity, fatigue, muscle action and posture, biochemical variations during growth and body composition. In a rather different and relatively new field, the Japanese have also carried out interesting sociological studies of non-human primates in the wild.

If the western participants gained much professionally, so did all those who attended, particularly those from poorer territories. Indeed, the benefit which these workers derive from large congresses is often overlooked by those who recommend their abolition. At the congress, the barrier between east and west in Europe assumed its true perspective, and Russians, Rumanians and Czechs were freely accessible to the British, French and Americans. The impressions left by these encounters may well last longer than those of the formal resolutions at the end of the congress, amalgamating the International Union of Anthropological and Ethnological Sciences with the International Congress and appointing an international standing committee to inquire into forced acculturation of indigenous peoples.

ELECTRON MICROSCOPES

Towards Higher Voltage

from a Correspondent

AT the fourth European Regional Conference on Electron Microscopy there was a strong biological bias, but significant advances were also reported in other fields, particularly metallurgy and metal physics, where the few existing high voltage microscopes are proving extremely valuable. In an opening lecture, Dr H. E. Huxley emphasized the great advantages of combining electron microscopy with X-ray diffraction and the newer optical diffraction method. Diffraction studies often show regularities not detected by electron microscopy while the latter may show different structural components within such regular arrays. Thus the existence of both thick and thin muscle filaments and of cross bridges was not predicted by the X-ray method.

Dr R. C. Valentine described how, in enzymes studied by electron microscopy, it is apparent that the first step in reassociation is the formation of a subunit dimer; the dimers then associate to form the active molecule. It is somewhat disappointing that the very successful negative stain technique that has permitted such effective visualization of macromolecular structure limits resolution to about 20 Å, some five times poorer than the resolution of the microscope.

Recent developments in high voltage electron microscopy have stimulated much interest. Such microscopes are now being used in France, Britain, Japan and the United States. With increased electron penetration, metallurgists can study thicker specimens thought to be more representative of bulk material. Although chromatic aberration, which is an important