rhage, and the pain due to calculus or enteroptosis. He made no reference to the need for spinal manipulation.

Dr. SANTOZ referred mainly to sacro-iliac strains, pointing out how frequently trouble from this cause was attributed, especially in women, to "kidney disease." The one essential to cure was manipulation of the joints.

Dr. EARDLEY HOLLAND (London), speaking as a gynæcologist, referred to the loosening of the sacro-iliac joints during confinement, and of the pain and suffering which frequently follow.

Dr. VAN BREEMEN again drew attention to the value of skin treatment, and Dr. CYRIAX gave in considerable detail his experiences in treatment, which led him to divide the causes of backache into various headings, chief among which were minor displacements, synovitis of the vertebral joints, adhesions, exaggeration of normal curves, displacement of ribs, and strain of the costo-vertebral joints.

The PRESIDENT brought the discussion to an end by referring to the unhallowed soil on which the section had trespassed. He quoted various cases which tended to show that spinal manipulation was frequently the only means by which relief could be secured, and that it is the duty of the physiotherapist to investigate this avenue of research before condemning it.

Sir HUMPHRY ROLLESTON, as President of the Congress, then gave a short farewell address to the members of the section.

A few members on the invitation of Miss Stansfeld visited in the afternoon the annual demonstration given by her students at Bedford Physical Training College.

ADVANCED MEDICINE: INTERNATIONAL COÖPERATION.

Two further advanced lectures in medicine arranged by the University of London in connexion with foreign universities were delivered recently. On June 12th Dr. MURK JANSEN, of Leiden, lectured on Injurious Agents and Growth, Prof. G. ELLIOT SMITH presiding; and on June 21st Prof. A. A. HIJMAN VAN DEN BERGH, of Utrecht, gave an address on the Pathology of Hæmoglobin, under the presidency of Sir FREDERICK ANDREWES, which will be published in the next issue of THE LANCET.

INJURIOUS AGENTS AND GROWTHS.

By Dr. MURK JANSEN.

Dr. JANSEN said he wished to make clear the application of three principles which, in his view, underlay the phenomena observed with regard to growth. Briefly stated, these principles were: (1) injurious agents affecting growing cell groups would enfeeble their power of growth; (2) whether the resultant change was great or small did not depend upon the nature of the injurious agent so much as on its intensity—the change was proportional to the intensity of the agent; (3) the power of growth was enfeebled in proportion to the rapidity of the growth of the affected cells. A confirmation of the soundness of these principles had been supplied by the experiments of Dr. Stockard, of New York. Achondroplasia was a simple example of congenital malformation. The subject of this disease showed a shortening of the head and a flattening of its back; the hard palate was so tilted in its posterior angle that it approached the base of the skull, and the spine had a backward curve in its middle. These defects showed the operation of mechanical forces before birth. By assuming that the amniotic sac in the third to the fifth week of foetal life had lagged behind in growth, it could be understood how this pressure had been acting. From all sides the flexible foetus had been compressed, and the blood squeezed out of it; hence it really suffered from famine, and the parts which at that

stage grew most rapidly lagged behind in their growth as compared with the normal. In the fifth and sixth week the skeleton started the formation of cartilage. The cells quickly enlarged and deposited an intercellular substance, so as to extend the area of the skeleton.

With regard to the changes of growth which could be seen to take place after birth, in order to study this growth it was essential to compare children of the same parents. There would be found three types of children. First, there was the type which became too tall and outgrew its strength. The third type remained abnormally small, the rickety child; and between those two was the type, neither too tall nor stunted, which developed knock-knees and, like the other types, had a weak general musculature. The tall boy stooped; his back muscles lacked the strength to balance the respiratory and diaphragmatic muscles on the front of the body. He usually had a protruding abdomen, flat feet and blue hands. These features were always present, in varying degrees, in the knock-kneed child; also a retardation of growth on the lateral side of the growth discs above and below the knee-joint. The flat feet caused more weight to be borne on the outer side of the growth discs, and those discs responded with less growth nearer the discs. In the rickety child every one of the growth discs showed that symptom; in such children, wherever there was more pressure on the growth discs, there less growth took place. The rickety child also had curving of the shafts of the long bones. These enfeebling conditions could be caused by injurious agents of any kind. If the mother were asked why a particular child had outgrown its strength, she would reply either that the child had special diseases quite early in life, or that she herself during her pregnancy had many duties and was usually greatly fatigued. There were families in which the eldest boy outgrew his strength but had had no special disease, and the sixth or seventh, perhaps, would be rickety.

With regard to the changes seen being proportional to the rapidity of growth, it must be remembered that 43 per cent. of the normal body-weight in the adult was muscular tissue, and if the child was affected by an injurious agent, it was this tissue, the muscular, which suffered most. The skeleton formed 17 per cent. of the normal body-weight, and it was chiefly the growth discs near the knee which had to do with the increase of growth, as the legs grew faster than any other part. That the influence was of the same kind was proved by the fact that the boy who had rickets in his first years—i.e., when growing rapidly—would have a gradually diminishing intensity of the rickety process as growth became slower. In the first year of life the child increased its body-weight by 200 per cent., and this rate gradually diminished until in the sixteenth year the increase was only 2½ per cent. To some the irregularities in the growth discs formed a stumbling block to the acceptance of the view he was advancing. His reply was that if one examined the growth discs of children who had died young, one found that the pulp showed three zones: (1) where the cells divided; (2) where the cells did not divide but enlarged; (3) where the cells did not enlarge but underwent differentiation in preparation for the performance of their function later. In rickets it was found that whereas the whole of the growth was retarded—so that the child might be 18 per cent. smaller and 38 per cent. lighter than the normal child of that age—wherever growth was retarded, there was extra retardation of cell differentiation—i.e., the third category. In this condition it was found that though the loops of blood-vessels were near the cartilage cells, there was no transformation into bone cells. In some all three kinds of growth were stopped. When children developed straight legs later in life, it indicated reserve power of growth. The boy who outgrew his strength was found to have great sensitivity in his skeleton, and if he also had an excess of weight on the outer part of his growth

discs, he was sure soon to develop knock-knee. In the rickety child there was enhanced sensitivity and fatigability; and the person with the abnormally curved back and weak musculature was one less able to bear the stresses and responsibilities of life than normal persons. A study of these three types of condition should be a prelude to attempts to forestall them, and to ensure that future generations should be more robust and able to bear the strains of ordinary life. Every effort should be made to spare the pregnant mother fatigue, and to prevent the intrusion of substances which might act as stunting poisons. At present the populations of the world took many poisons, of which a good example was tobacco. In the smoker the germ cells were more rapidly split up than in others; certainly in the smoker the cells were more readily killed by X rays. A study of the laws of vulnerability in this relation must bring benefit. The best step towards a solution of this problem would be by comparing children begotten by parents while they freely indulged in tobacco, with those who were begotten by the same parents some time after smoking had been given up. Any sweeping conclusion would be premature until some such inquiry had been made.

CZECHO-SLOVAKIA.

(FROM OUR OWN CORRESPONDENT.)

Ruthenian Congress of Social Medicine.

A CONGRESS of social medicine was held in Ruthenia from June 4th to 7th. Under the Austrian empire Ruthenia belonged to the kingdom of Hungary; it is now an autonomous territory which has voluntarily united itself to Czecho-Slovakia. The inhabitants, who are called Russins, are Slavs of primitive type. The cities are in the hands of Jews, and the Russins live in the villages. Before the creation of the Czecho-Slovak Republic all the physicians in Ruthenia were Jews, who had no interest in the health of the Russins and used them only as a source of revenue. When the territory was incorporated into the Czecho-Slovak Republic, a group of selected Czecho-Slovak physicians was sent to Ruthenia to reorganise the medical and public health service of the country. This group, headed by Dr. E. Albert, has already done an enormous amount of work for the good of the country. Hospitals which resembled mediæval prisons rather than humanitarian institutions have been turned into modern establishments with up-to-date service and equipment. Medical officers of health who used their position only for the benefit of their private practices, and in most cases did not live in the districts assigned to them, have gradually been replaced by competent and enthusiastic workers. When the work was begun small-pox and typhus were epidemic throughout the whole territory; a number of young Czech physicians have sacrificed their lives in the two years' struggle which has eradicated these diseases. Widespread tuberculosis and endemic syphilis will next be attacked and the congress was organised largely for this reason.

In spite of many difficulties with which the organising committee had to contend, the congress was a marked success. More than 200 Czecho-Slovak physicians travelled to the eastern corner of the Republic to familiarise themselves with the work accomplished by their colleagues.

Work of the Congress.

The congress was held under the auspices of the Vice-Governor of Ruthenia, and many representatives of public authorities attended the sessions. The programme was divided into six sections, devoted to (1) child welfare; (2) the care of cripples; (3) chronic disablement; (4) problems of tuberculosis; (5) mental hygiene and the alcohol problem; and (6) general questions of public health. The sections dealing with child welfare, tuberculosis, and general public health attracted most attention. With regard

to the "point of crystallisation" for child welfare, the local workers favoured the concentration of work around institutions (children's hospitals, foundling asylums, &c.), whilst other members of the congress tried to convince them that the best unit would be a health centre for children, as developed by Dr. Eversole of the American Red Cross and others. The resolution finally adopted in this connexion recommends to every community the creation of a health centre as the most efficient means for the improvement of the public health, and refers to hospitals and similar institutions as indispensable but less important in child welfare. In the section dealing with tuberculosis, the medical officers of the State railways reported on their investigations into the prevalence of tuberculosis among the railway employees in Ruthenia. They have undertaken a thorough survey of all the personnel in order to obtain a scientific basis for an anti-tuberculosis programme among the railway employees. The section dealing with general problems of public health was largely concerned with the relation of the medical practitioner to the problems of social medicine; a resolution was unanimously adopted urging the medical profession to lead the movement and to preserve its idealistic attitude. The movement appears to be in the hands of the younger generation, represented by a special committee of social medicine. Most of the physicians in Ruthenia are also members of this committee, and it is due to their initiative that the congress has been organised.

This was the second congress of social medicine which has been organised in the independent Republic of Czecho-Slovakia. Those who attended the first congress in 1919, and have compared it with the recent one, are impressed with the enormous progress made in this direction.

June 12th.

THE SEVENTH CENTENARY OF THE UNIVERSITY OF PADUA.

(FROM OUR ROUMANIAN CORRESPONDENT.)

THE seventh centenary of the University of Padua was celebrated on June 1st, and a brief account of the proceedings may be of interest to readers of THE LANCET. The University was founded in 1222, and after 1405, when Padua came under Venetian rule, it rose to world-fame. Among the scientists who taught there were Vesalius, Fallopius, Fabricius (the teacher of Harvey), Galileo (who held the chair of mathematics from 1592 to 1610), Morgagni, and—coming to more recent times—Edoardo Bassini, inventor of the operation for the radical cure of inguinal hernia, who not long ago retired from the staff at the age of 80. Padua is considered to possess the most famous of the 24 Italian universities, and the celebrations were in accordance with the dignity and learning associated for seven centuries with the "Athenæum Patavinum." Signor Luigi Lucatello, Rector Magnificus of the University, directed the arrangements, which were carried out by the students.

The invitation to attend the ceremony, couched in Latin, was sent to all universities throughout the world, and among the delegates who took part were many from Great Britain and the United States. The universities of France, Germany, Poland, Czecho-Slovakia, Roumania, India, China, Japan, and many other countries sent representatives. Before the ceremony proper took place, a mounted procession passed along the streets of the city, the riders being dressed in costumes of the thirteenth century, with horses caparisoned to match.

The official opening took place in the presence of King Victor Emmanuel, who was accompanied by Cardinal Maffi and Senator Luzatti, Minister of Finance. The Rector formally opened the proceedings, speaking in Latin, after which the foreign delegates delivered their messages of greeting, and were presented to the King. The opening ceremony