UNIVERSITY OF THE ORANGE FREE STATE PHYSIOTHERAPY STUDENTS

Firstly a belated welcome to Mrs. Joan Withers, who joined the staff this year, and our thanks for all her help to us with our clinical work.

The 17th September this year, the occasion of our farewell to the final years, proved to be a memorable evening. It took the form of a cheese and wine dance which was thoroughly enjoyed by everyone. A big thank you to the first years for their organisation of the evening.

Our congratulations to Arlene Kruger, Toni Smit and Jane Vorster on their selection to play for the Varsity 1st Team Hockey at the Durban Intervarsity Tournament. Also to Arlene and Toni on being chosen for the Free State B Team.

Toni Smit has to be congratulated on being awarded the trophy for most improved hockey player in U.O.F.S.

Congratulations also to Marinda Lumley on her successful representation of the Free State at Badminton.

As we near the end of the year and examinations loom in sight we would like to take this opportunity to wish all students, especially Finalists, the very best of luck.

ABSTRACTS

SECOND AND THIRD QUARTERS 1971

Brain, 94, 2, 1971:

BELMONT, I., KARP, E., and BIRCH, H. G.: Hemispheric Inco-ordination in Hemiplegia.

Unilateral and bilateral movements were analysed in a group of 18 left-sided hemiplegic patients. All patients selected had sufficient residual voluntary movement in the affected foot to enable them to carry out the tests, and no patient had any intellectual, language or perceptual problems, although disturbances of sensation on the affected side were commonly found. The same tests were carried out in a control group of 21. All but two of the hemiplegic group showed inco-ordination in bilateral activities. This inco-ordination manifested itself in two distinct ways, half the patients demonstrating an asynchronous performance with the unaffected side moving consistently faster than the affected side, and the remaining patients alternating in speed between the affected and unaffected sides with a strong tendency for either foot to stop completely when the other foot was moving. The patients seemed unaware of this inco-ordination. In six of the eight patients with residual finger movements, bilateral hand activities were similarly affected. The authors put forward several hypotheses to account for this disco-ordination of bilateral activities after unilateral cerebral damage.

Acta Neurol. Scandinav. 47, 4, 426-438, 1971:

HORNABROOK, R. W.: The Prevalence of Multiple Sclerosis in New Zealand:

Summary: This article may be of interest to South Africans in that it studies the incidence of multiple sclerosis in relation to latitude. In 1967, Dean studied the incidence of multiple sclerosis in South Africa and concluded that it was almost unknown amongst the Bantu and rare in South African-born Europeans, but more common in immigrants from north and central Europe. In Europe the high risk zones are north of 60° latitude and in America north of 40° latitude. This study of the incidence in Wellington, New Zealand (a city which could be compared to Cape Town in climate and culture) seems to establish a similar trend in the southern hemisphere. Wellington lies just south of 41° latitude, at the southern extremity of the North Island, and shows a particularly high incidence of multiple sclerosis. Cape Town lies at a latitude of approximately 35° latitude, corresponding with the northern tip of New Zealand, and in New Zealand the incidence of multiple sclerosis has been found to diminish as one proceeds northwards.

Am. J. Physiol., 221, 2, August, 1971:

BROOKS, G. A., HITTELMAN, K. J., FAULKNER, J. A., and BEYER, R. E.: Tissue temperatures and whole-animal oxygen consumption after exercise:

Summary: In a study of rats after exhaustive treadmill exercise the authors found that muscle temperature in the thigh muscles increased by 8,1°C. After exercise the temperature decreased exponentially but did not reach control values after one hour. During this period of increased temperature the oxygen consumption was significantly raised and, although it decreased slightly over the first 20 minutes, it thereafter also remained at a plateau well above the resting level for the whole of the period of increased muscle temperature. Since the authors felt that this period was considerably longer than that required for recovery from anaerobic metabolism, they query the classical definition of oxygen debt.

J. Neurol. Neurosurg. Psychiat., 34, 3, June, 1971:

BURKE, D., GILLIES, J. D., and LANCE, J. W.: Hamstrings stretch reflex in human spasticity.

Summary: This is a similar study to one previously undertaken by the same authors. In the first study the authors investigated the results of stretching the spastic quadriceps muscle. They found that the stretch reflex decreased as the muscle was stretched, producing the so-called "clasp-knife" phenomenon, and explained this as being due to autogenic inhibition resulting from secondary stretch.

In this more recent study the results of stretching the spastic hamstrings muscles were investigated. In all patients the stretch reflex was found to increase in direct proportion to the velocity of stretch. The stretch reflex also only became apparent in the last third of the stretching movement (extension of the knee in prone) and was maximal at full extension. They ascribe this absence of the clasp-knife phenomenon in the spastic hamstrings to the differential effects of secondary stretch on flexors and extensors, activation of the flexor secondary endings producing autogenic facilitation in place of inhibition. They describe the effects of primary and secondary endings in extensor muscles as being antagonistic, whilst in flexor muscles they are synergistic.

J. Physiol., 217, 3, September, 1971 (709-721):

CAVAGNA, G. A., KOMAREK, L., and MAZZOLENI, S.: The Mechanics of sprint running.

Summary: The authors found that during sprinting the average power developed by the muscles during push-off increased with the velocity of running, and reached 3-4 h.p. at the maximum speed achieved (25-34 k.p.h.). At this high speed, however, part of the power output appeared to be due to elastic release (after stretch of the contracted muscles) and not only to the contractile component of the muscle.

Neurol., 21, 8, August, 1971:

SACHDER, K. K., TAORI, G. M., and PEREIRA, S. M.: Neuromuscular status in protein-calorie malnutrition.

Summary: Since South Africa has a high incidence of kwashiorkor amongst the Non-European population, this article may also be of interest. Thirty children with kwashiorkor were studied in southern India. Neuromuscular changes were invariably found and included muscle wasting, hypotonia, diminished reflexes, decreased peripheral nerve conduction and an abnormal E.M.G. The pelvic and shoulder-girdle muscles were most markedly affected, 17 children being unable to walk and four showing a waddling, myopathic-type gait. Many utilized Gowers' manoeuvre in order to stand up. Mental changes (apathy or irritability) were also common.