The lymph glands of Varese strain, with compact structures, survive for an even shorter length of time; thereafter part of the cells undergo processes of turnig black, which are similar to those that transform haemolymph cells into pseudotumours.

In this respect, it has been seen that the large haemolymph cells (CASTIGLIONI[17]), which have already aggregated to form tumours (Aspra 52 strain) and are kept in a culture for 15 days, are subject to progressive melanization. Also other workers, who have tried to cultivate melanotic tumours, have observed a progressive expansion of melanization in cells near the tumour (KURODA and TAMURA[18–25]) or in cells which have migrated into other tissues from the tumour itself (FRIEDMAN and BURTON[26], FRIEDMAN et al.[27]) without this proving that there was any cellular multiplication. In our experiments, in one culture alone was a bridge formed of living cells (some probably in mitosis) between two fragments of tumours.

While admitting the preliminary nature of the present research, we believe we can point, as being of some interest, to the results obtained by us up to date, especially those on ganglia, both for the relatively long survival period and for the documented growth through mitotic divisions. This preliminary research will allow us next to try to obtain clone cultures on culture media kept under the strictest control.

Riassunto. Gli autori riescono ad ottenere la sopravvivenza in cultura di gangli cefalici larvali di *Drosophila melanogaster* per oltre un mese, con mitosi durante la 2ª e 3ª settimana, mentre le ghiandole della linfa si mantengono vive solo per 10–13 giorni.

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Stretching Activity in Dogs Intracisternally Injected with a Synthetic Melanocyte-Stimulating Hexapeptide

In dogs, intracisternal injections of highly purified ACTH preparations induce typical, prolonged, and repeated stretching crises[1,2]. Similar effects are caused by purified MSH preparations[3] and by solutions of ACTH made with NaOH $N/10$ treated at 100°C for 20 min[2]. These findings suggest that the chemical groups eliciting the stretching responses are related with those stimulating melanocytes. This correlation is supported by results obtained with dogs given intracisternally the acetate salt of the synthetic hexapeptide H Glu(NH_2)-His-Phe-Arg-Try-Gly-OH with MSH-like activity. 750 γ/kg or less of this peptide (given intracisternally) evoke stretching responses similar to those following injections of MSH or ACTH. 1.5 mg/kg of the peptide causes lasting depression and scialorrhea but not a stretching crisis.

The melanocyte stimulating effect of the peptide is 2×10^5 U/g[4]; that of a purified MSH preparation (732179 A by Armour Laboratories, Chicago, Ill.) 5×10^3 U/g. The threshold dose for the stretching response was respectively 500 and 5 γ/kg: indeed these two different pharmacological actions are strictly related. The hexapeptide, but not MSH, shows a paradoxycal behaviour and a pharmacological response evoked by the polypeptide may change qualitatively with respect to the dose given intracisternally.

The Figure illustrates a typical stretching crisis in a dog injected intracisternally with the hexapeptide.

A typical stretching crisis in a dog injected intracisternally with the melanocyte-stimulating hexapeptide

Riassunto. La iniezione endocisternale nel cane di dosi fino a 0.75 mg/kg del sale acetico dell'esapeptide H.Glu(NH_2)-Ist-Fen-Arg-Tript-Gli.OH, svolgente un'attività melanoforo-stimolante della intensità di 2×10^5 U/g, induce delle tipiche crisi di stiramento, del tutto simili a quelle che si ottengono iniettando per la stessa via dell'ACTH o dell'MSH. Dosi di 1.5 mg/kg invece non inducono più crisi di stiramento ma deprimono notevolmente gli animali e determinano una intensa scialorrea. Sembra di poter ammettere che la struttura chimica responsabile dell'effetto sui melanociti sia anche responsabile dell'induzione delle crisi di stiramento.

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The Effect of Parabiosis and Fluid Restriction on the Development of Azo Dye Induced Rat Liver Tumors[1]

CAMPBELL and STONE[2] have shown that slices of liver tumor synthesize 1/3 to 1/2 the amount of serum albumin produced by slices of normal liver. GLINOS[3] has provided evidence that depletion of the plasma protein level by plasmapheresis can accelerate liver regeneration in the rat and that fluid restriction retards liver regeneration by increasing the relative concentration of plasma proteins.

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The present experiments attempt to increase the plasma protein level in rats fed an azo dye and to determine the effect upon the incidence and rate of liver tumor for mation.

Materials and methods. Rats with developing liver tumors were united in parabiosis with normal rats, or they were united on each side to normal rats as parabiotic triplets. The normal rats might be expected to provide plasma proteins to the pre-tumorous rats by way of the common vascular connections. Fluid restriction, during and after feeding of the dye, was also employed with some of the rats. Serum density determinations were made according to the method of Van Slyke described in TÁRNOKY[4]. The rats were fed 3'-methyl-4-dimethylamino-azobenzene for three months at a 0.06% level in the synthetic diet developed by GELBOIN, MILLER and MILLER[5]. Control rats of the same weight were fed the synthetic diet without the carcinogenic azo dye. Parabiosis was carried out according to the method of HILL[6].

Results. Parabiosis. The average survival period of 21 dye-fed control rats was 5.5 weeks after the cessation of dye feeding. Twelve dye-fed rats were united in parabiosis with single control rats; the average survival time was 7 weeks after termination of feeding of the dye. Control rats which had been in parabiotic union with tumorous rats until their death were separated surgically and kept under observation. Laparotomies upon these rats did not reveal any sign of liver damage or tumor formation 2.5 months after separation from the tumorous rats. In eight cases dye-fed rats were united between two normal rats as parabiotic triplets. The average survival time of the tumorous rats was 10.8 weeks after dye feeding was discontinued.

Fluid restriction. Ten rats were subjected to five day periods of fluid restriction during the three months the dye was fed and for $1^1/_2$ months after dye feeding. Ten other rats of a similar age were given water *ad libitum* but the consumption of the synthetic diet containing the azo dye, and later the rat chow, of each of these rats was limited so that it was similar to that of the fluid restricted rats. Another group of ten rats had access to the diet and water at all times. $1^1/_2$ months after the dye feeding period the average weight of the fluid restricted rats was 184 g, that of the pair-fed controls was 178 g and the average weight of the rats with unlimited food and water supply was 340 g. All the rats were sacrificed at this time and it was found that none of the fluid restricted or pair fed rats showed any sign of liver damage or tumors while the group without fluid or food restriction all showed varying degrees of liver tumor development.

Before the above groups of rats were sacrificed serum density determinations[4] were performed on the rats of the fluid and food restricted groups, as well as upon five normal rats and five normal rats that had been subjected to two seven day periods of water restriction. The average serum density of both types of normal rats and the fluid restricted rats was 1.029 or 8% serum protein, whereas the average serum density of the food restricted rats was 1.027 or 7.5% serum protein.

Discussion. In the present experiments parabiosis (with one or two normal rats) slightly retards the average rate of tumor development in rats which had been fed the azo dye, but does not prevent their eventual death from liver tumors. Since the fluid restriction experiments demonstrated that tumor development could be inhibited by decreasing the food consumption after the period of dye feeding, it seems probable that the slight retardation in tumor development due to parabiosis is attributable to decreased food consumption by the dye-fed rats because of the difficulties of feeding while in the parabiotic association.

Prolonged periods of fluid restriction were found to inhibit liver tumor formation in rats fed the azo dye. However pair-feeding experiments indicated that tumor development was inhibited due to the decreased food consumption of these rats. This conclusion is further supported by the finding that fluid restriction did not increase the relative concentration of serum proteins. TANNENBAUM and SILVERSTONE[7] have previously found that the promotional, but not the initiation, of carcinogenesis can be inhibited by caloric restriction.

Résumé. Chez le rat, le développement des tumeurs du foie est ralenti lorsqu'on met les individus atteints en parabiose avec des individus normaux et arrêté si l'on réduit leur ration d'eau. Mais il semble que dans les deux cas, ces effets ont pour cause déterminante la diminution de la nourriture consommée.

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Human Vascular Antigen Complement Consumption Test of Hypertensive Patients (Preliminary Report)

Owing to its high incidence throughout the world, hypertensive vascular disease is constantly in the focus of interest. Recent research has greatly enhanced our knowledge of the condition, but the pathogenesis has still many obscure features.

We have undertaken to study vascular lesions in hypertensive patients, with special reference to the potential role of autoagressive processes. To elucidate the problem, complement consumption tests have been made with vascular antigens, thus modifying the 'leucocyte complement consumption test' of CHUDOMEL, JEZKOVA, and LIBÁNSKY[1] so that it became suitable for the demonstration of binding of vascular antigen-autoantibodies.

Methods. Specimens of arteries and aorta were taken from various parts of blood group '0' hypertensive cadavers, homogenized in 'Ultra-turax' and stored at $-10°C$. To titrated amounts of the homogenate, active test sera were added and the mixtures were incubated at 37°C. After 1 h of incubation and centrifugation, the sera were tested for complement content. A decrease of serum complement results (as compared with the serum complement level in the absence of vascular antigen) if a vascular antigen-autoantibody union has taken place. Corresponding to the measure of the fall in complement titre, we speak about a '+' reaction (3 tubes), '++' (5 tubes) and '+++' reaction (5–10 tubes). A difference of 0–2 tubes may be accepted as negative. According to CHUDOMEL, JEZKOVA, and LIBÁNSKY[1], the method is equally suitable for the demonstration of complete and incomplete antibodies.

Results. The complement consumption tests yielded positive results in 60 out of 122 cases of hypertension, equivalent to 49.1% of all cases. In 3 cases, the sera were

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