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AVIATION MEDICINE TRANSLATIONS: ANNOTATED BIBLIOGRAPHY OF RECENTLY TRANSLATED MATERIAL. II.

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FOREWORD

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AVIATION MEDICINE TRANSLATIONS: ANNOTATED BIBLIOGRAPHY OF RECENTLY TRANSLATED MATERIAL. II.

Prepared by

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Abderhalden, Emil, and Buadze, Severian. ***Über das Auftreten von Saccharase im Blutserum bzw. Harn nach parenteraler Zufuhr von Rohrzucker.*** (On the appearance of saccharase in blood serum or urine after parenteral administration of cane-sugar.) *Fermentforschung (Enzyme Research), 1931-1933,* **13**, *228-243.*

It was proved clearly by means of several series of experiments, using various methods — reduction and polarimentric method and by using acetone precipitates of urine, plain extracts and eluates —, that the action of saccharase can be established in urine after parenteral administration of cane-sugar. The decomposition of lactose in the presence of a cane-sugar fermenting enzyme could not be established with certainty. The parenteral administration of cane-sugar did not produce the appearance of proteolytic protective ferments.

Our experiments prove conclusively and clearly that the results obtained in his time by Weinland and later by one of us (Abderhalden) with collaborators, according to which parenteral administration of cane-sugar causes the appearance of saccharase in the blood and subsequently in the urine, are completely valid. It is of particular interest that after cessation of saccharase elimination in the urine a fresh parenteral administration of cane-sugar causes an earlier appearance of saccharase in the urine than is the case with the first cane-sugar injection. The negative results found in bibliography on the subject are based, on the one hand, on improperly performed experiments frequently for too short a period and, on the other hand, on inadequate methodology. (Translated summary.)

Arslan, M. ***Les accélérations de Coriolis dans la stimulation vestibulaire (recherches electronystagmographiques)*** (Coriolis accelerations in vestibular stimulation [Electronystagmic research].) *Confina Neurologica, 1961,* **21**, *403-411.*

The author has analysed the modification which appears in the nystagmus provoked by angular acceleration, when this angular acceleration is acting during the action of a linear acceleration.

This finding can be explained, in the author's opinion, by two hypotheses: (1) either the linear acceleration interferes as a decreasing action on that inhibition, which in normal conditions otoliths have upon ampullar reflexes; (2) or, the finding is the effect of a Coriolis acceleration deriving from the contemporaneous action of linear acceleration and angular acceleration (this second hypothesis is proposed on the basis of the analogy with the Coriolis nystagmus, discovered by Schubert and Bornschein, through the contemporaneous action of an angular speed and an angular acceleration.) (English summary.)

Berg, Steffen P. ***Das postmortale Verhalten des Blutes; Beiträge zur Pharmakologie und Fermentkinetik des Blutes bei verschiedenen Todesursachen, insbesondere der Erstickung.*** (The post-mortem behavior of the blood.) *Deutsche Zeitschrift für gerichtliche Medizin, 1950,* **40**, *175.*

The varying post-mortem state of coagulation of the blood in connection with various causes of death had already been the subject of numerous attempts at interpretation and experimental studies. In this article an attempt has been made to show that the morphological findings are to be regarded as a partial product of fermentative processes, which vary with the time of the autopsy and the course of which is causally related to the functional effects of the final circulatory reactions.

In agreement with the decoagulation theory the view is supported that even in cases where at a later autopsy liquid blood is found there is a primary coagulation. The liquid state of the blood in suffocations is explained by a rapid post-mortem decoagulation which is to be attributed to enzymic fibrinolysis.

The increase in post-mortem fibrinolysis may be set off by a reaction chain which has its starting point in a great outpouring of adrenaline. This possesses the necessary intensity primarily:

1. In suffocation, understood as comprising all those conditions in which circulation occurs without oxygenation.

2. In bleeding to death.

A similar effect can be obtained by administration before death of large doses of sympathicomimetic drugs. – As a physiological consequence of the outpouring of adrenaline an emptying out of the blood storage organs of the splanchnic region comes about, particularly of the spleen, which results in a striking rise in the phosphatide level in the blood. The insurge of phospholipoids in turn finally leads, probably by way of an adsorptive union with substances which inhibit fibrinolysis (antifibrinolysin), to the dissolution of the coagulates.

Apart from the secretion of adrenaline, an increase in serum phosphatides can come about as part of an acute lipemia under the effects of gross violence and in phosphorus poisoning. The height of the phosphatide level in itself is of no importance to fibrinolysis.

Another mechanism of increase in fibrinolysis seems to be present in uremia, inasmuch as here the presence of urea catalyzes the fibrinolytic process. A similar process may also play a part in alcoholic poisonings.

All in all the agonal processes with their effects on the phosphatide-fibrinolysis system are to be considered primarily responsible for the occurrence of post-mortem decoagulation. Hyperinosis due to inflammatory processes is not significant with reference to the post-mortem condition of the blood. The view is therefore supported that suffocations with coagulated blood do not occur.

As compared to the causes of post-mortem decoagulation mentioned the chronological relationships in the death events are of only subordinate importance.

In particular the following findings are emphasized:

1. Pharmacologically active substances are to be found in cadaveric blood in varying quantities, and pressor and vasodilating substances can be differentiated, as well as substances that excite and substances that relax smooth muscular organs. It has been possible to show that this is principally a matter of the simultaneous or separate occurrence of adrenaline and/or arterenol, histamine, adenylic acid, and substance P (von Euler) in variable proportions, and definite relationships with the causes of death, especially suffocation, have been shown. Post-mortem conditions were also not without influence.

2. The isolated smooth muscular organs of the Syrian golden hamster behave pharmacologically similarly to the corresponding organs of the rat.

3. The pressor effect of serum specimens is increased by brief treatment with ultrasonic vibrations, but reduced by ultrasonic irradiation of longer duration.

4. Besides the previously known conditions that are accompanied by an increase in the serum phosphatides, a rise in the phosphatide level in cadaveric blood is found with atherosclerosis of the vascular system.

5. The phosphatide content of the blood of the portal and splenic veins is higher than that of the other venous blood.

6. After electric shock there is an increase in serum phosphatides.

7. Extirpation of the spleen in animal experiments seems to effect a lowering of the phosphatide level.

8. Treatment of serum specimens with ultrasonic vibration lowers the phosphatide figure.

9. The phosphatide level in cadaveric serum undergoes only trifling changes during the first 48 hours after death.

10. A new procedure is given for determining the fibrinolytic activity of cadaveric serum and its effectiveness checked in detail by experimental methods.

11. Serum specimens from the portal and lienal veins show more intense fibrinolysis on the average than those from the vena cava. The figures for the portal vein, however, are evidently raised only when a digestive state is present.

12. In vitro a heightening of fibrinolysis can be induced by the addition of urea; adenosintriphosphoric acid leaves the fibrin dissolution unaffected.

13. Brief treatment of serum specimens with ultrasonic vibration leads to considerable activation of fibrinolysis; longer ultrasonic irradiation to reduction of it.

14. The fibrinolytic activity of cadaveric blood after a slight initial increase slowly declines within one or two days to zero. (Translated summary.)

Borghesan, E. ***Altérations du "planum semilunatum" dans la labyrinthite séreuse expérimentale.*** (Alterations of the "planum semilunatum" in serouse experimental labyrinthitis.) *Rev. Laryngol. (Bordeaux), 1963,* 85, *13-20.*

In the serouse experimental labyrinthitis the author observed that each zone constituting the planum semilunatum of rabbits reacts in a different way; the reaction of the glands is characterized by the increasing of a fluid deficient in osmio-reducing substance, which, on the contrary, is abundant in the crista and in the reticular zone. Such substance is variously distributed in the above said zones and the author attributes a functional significance to this fact. The anatomical formations implied in the ampullar humoral system, consequently, show an organization similar to the one which, according to the author, secretes and absorbs the cochlear endolymph.

The author, besides, suggests that certain vestibular syndromes, due to vasomotorious troubles, may be provoked by alterations, reversible or not, of the ampullar glands. (English summary.)

Borghesan, E. ***Modifications des glandes ampoullaires dans la labyrinthite séreuse expérimentale.*** (Modifications of ampullar glands in experimental serous labyrinthitis.) *Acta Otolaryngol., 1963,* **56**, *176-180.*

In experimental labyrinthitis, the glands of the crista ampullaris, after an early hyperactivity, show the secreting duct larger and many degenerating cells; these cells, therefore, assume a cystic aspect. The substance enclosed there may be the interstitial fluid of the crista, which in the ampulla mixes with the endolymph, altering its physico-chemical composition. (English summary.)

Brandt, U. ***Une épreuve sélective da la fonction utriculaire.*** (A selective examination of the utricular function.) *Acta Otolaryngol., 1958,* **140**, *101-110.*

The study of the utricular function in man is rendered singularly difficult for anatomic, physiologic, psychological, and functional reasons. The author describes a method, founded on an experiment of van Egmond, Groen and Jongkees, using the apparent inclination which a subject feels when subjected to a centrifugal force. The experiments were conducted in a human centrifuge. A special gadget permitted the measurement of the oculogravic illusion. The results of the set for a group of ten normal subjects is a conformation of Mach's hypothesis, according as the degree of apparent inclination corresponds perceptibly to the deviation of the resultant of the forces. The absence of the oculogravic illusion in two deaf-mutes showing all the signs of vestibular non-functioning seems

to prove that the illusion is intimately bound to the otolithic mechanism. The individual variations in the normal group, occasionally very important and consistent in underestimation and more often in the overestimation of the angle of the resultant, seems to give a measure of static sensitivity. The results obtained are most often reproducible. There is not any adaptation. (Translated summary.)

Buchborn, Eberhard. ***Ein quantitativer biologischer Adiuretin- (Vasopressin-) Nachweis an der Kröte.*** (A quantitative biological adiuretin [Vasopressin] test with the toad.) *Zeitschrift für die gesamte experimentelle Medizin, 1955,* **125**, *614-625.*

Attention is called to the possibility of a very sensitive biological method of determination for the posterior pituitary lobe hormone with the toad on the basis of the so-called Brunn reaction of the amphibia. The results of studies for the development of a toad test for ADH are reported. Under suitable experimental conditions a regular relationship can be demonstrated between ADH dose and diuresis inhibition in the hydrated toad, resulting in a characteristic dose-effect curve with constant direction coefficients. The sensitivity of the method is higher by a factor of ten than that of previous methods and embraces the range from 0.01 to 1.0 mU of the international ADH standard. Its accuracy corresponds to the precision of the rat and dog tests. (Translated summary.)

Caporale, R. ***Comportamento del nistagmo oculare d' origine labirintica nell'uomo e nel conniglio sottoposti ad accelerazione radiale.*** (The behavior of ocular nystagmus of labyrinthine origin in men and rabbits subjected to radial acceleration.) *Rivista di Medicina Aeronautica, 1962,* **2** *(4), 653-666.*

A series of investigations has been carried out in men and rabbits, with the aim of ascertaining the possible effects of hypergravity on vestibular reflectiveness.

Three different kinds of tests were conducted, i.e.: a) analysis of the behavior of the ocular nystagmus in recently hemilabyrinthectomized rabbits, during centrifuge runs at 1 - 2 - 3 G; b) rotatory stimulation and simultaneous centrifugation of another group of rabbits; c) film recording of the nystagmus, provoked by caloric stimulation, in men submitted to positive g in the human centrifuge. The results show that the ocular nystagmus, whichever may be the mean of eliciting it, decreases in frequency and duration when acceleration values in the centrifuge surpass 1 g.

Although one cannot establish the mechanism through which hypergravity acts as an inhibitor of the nystagmus, it is possible to make the hypothesis that the augmentation of gravity produces its effects either peripherally through a retarding action at eyeball level, or on the complex corticalvestibular-cerebellar system, or even at the level of the otoliths.

The hypothesis is made that, if the inhibitory effect is due to the action of hypergravity on the labyrinth, one could inversely assume that the threshold of vestibular reflectiveness is enhanced in zerogravity conditions. (English summary.)

Causse, R. and Chavasse, P. ***Études sur la fatigue auditive.*** (Studies in auditory fatigue.) *Année Psychol., 1947,* **42-43**, *265-298.*

I. — Fatigue is a normal physiological property of the aural apparatus. It must not be confused with the symptoms which follow on from an acoustic trauma. Would it perhaps be more accurate to speak of aural adaptation?

II. — Auditory fatigue appears even as a result of feeble stimuli of short duration.

III. — The action of low frequencies is different from that of high frequencies. Under 40 decibels and 40 secondes sounds under 600 c.p.s. cause no fatigue. This fact supports those theories according to which the mechanism by which low frequencies are perceived is different from that of high frequencies.

IV. — Auditory fatigue is a peripheral phenomenon but it is impossible to locate more precisely the structure in which it arises.

V. — Auditory fatigue makes it possible to define a frequency band corresponding to an area of resonance and it is equally possible to objectivate to some extent a differential threshold of frequencies.

VI. – The differential threshold of frequencies obtained by means of auditory fatigue differs little from one subject to another. On the contrary this same threshold subjectively determined is highly variable. Differences of musical aptitude as judged according to tonal discrimination are not due to differences in the structure of the ear. It is personal judgment which is here concerned. (English summary).

Cenacchi, V., & Fenu, G. ***Problemi relativi al nistagmo da stimolazione dei canali semicircolari verticali.*** (Problems concerning nystagmus caused by stimulation of the vertical semicircular canals.) *Clin. Otorinolaring., 1961,* **13**, *445-466.*

Problems concerning the clinical investigation of the function of vertical semicircular canal and corresponding neural pathways, as well as technical problems in connection with electrographic recording and quantitative evaluation of nystagmic response following rotacceleratory stimulation performed on the sagittall plane, are discussed.

Investigation carried out on 11 normal subjects showed, as the most important finding, that vertical nystagmus directed upwards is consistently stronger in its quantitative characters (duration, number of beats, amplitude and angular velocity) than nystagmus directed downwards, for stimulations of equal intensity.

On the basis of present knowledge on this subject, the asymmetry of anatomical and physiological nature in the muscles responsible for the performance of eye movements upwards and downwards seems to be the most significant factor, in the search for a satisfactory explanation of the observed phenomenon.

The possibility that other factors, more closely linked to the anatomical and physiological characteristics of the receptors and of vestibulo-ocular neural structures, may play a role is also considered. (English summary.)

Cerri, O., and Spialtini, A. ***Determinazions Anslitiche Quali e Quantitative Del Meprobamato.*** (Qualitative and quantitative analytical determinations of meprobamate.) *Bollettino Chemico-Farmaceutico, 1958,* **97**, *259-261.*

New, accurate, specific analytical methods are given for the determination of meprobamate.

These new methods of determination of the well-known tranquillizer offer several advantages over the recently published American method (Drug Standards, Vol. 25, 1957, p. 88).

Quantitative determination is made more accurately and in less time and is more specific; in fact, any impurities which may be present in the product, for example, 2-methyl-2n-propyl-1,3 propanediol and biuret, will not interfere with the determination. (Translated summary.)

Colquhoun, W. P. ***Effets d'une faible dose d' alcool et de certains autres facteurs sur la performance dans une tâche de vigilance.*** (Effects of a weak dose of alcohol and of certain other factors on performance in a task of vigilance.) *Bull. du C.E.R.P., 1962,* **11**, *27-44.*

In a prelininary study of the effects of a small dose of alcohol on proficiency at signal detection in a task of visual vigilance, it was found that the time of day at which the test session was held, and the temperamental characteristics of individual subjects, were of at least equal, if not greater importance in determining the average level of detection efficiency achieved as the alcohol dose investigated. A further series of experiments explored the action of these other factors under various task conditions. The effects of time of day on detection efficiency persisted when task speed was varied under paced conditions of work, but appeared as a difference in speed when the task was unpaced. The relationship between temperament and efficiency was undisturbed by a change in the difficulty of the discrimination required to detect a signal, or by an alteration in the speed of pacing (it was obscured, however, when the task was unpaced), but its direction was found to depend on whether the test session was held in the forenoon or afternoon. The practical importance of the findings for the organization of monitoring work is discussed. (English summary.)

Desmedt, J. E., and Delwaide, P. J. ***Particularités fonctionnelles de l'inhibition efférente cochléaire chez le pigeon.*** (Functional

characteristics of the efferent cochlear inhibition in the pigeon.) *Archives Internationales de Physiologie et de Biochimie, 1964,* **72**, *1-8.*

The activation of the efferent cochlear bundle in the high spinal pigeon, immobilized by Flaxedil, produces simultaneously two effects at the level of the inner ear: a potentiation of the microphonic receptor potential produced by the cilliated cells and a depression of the potential of the auditory nerve (Fig. 1, C). When one increases the interval between the end of the faradization of the efferent bundle and the application of the testing sound click, the microphonic potentiation persists up until around 400 msec. (Fig. 1, D) while neural inhibition disappears for intervals around 50 msec. at a normal central temperature of 42° C. This remarkable difference persists when these dissipations are reduced by artificially bringing the temperature of the animal down.

Such a dissociation between the two effects produced by the efferent bundle at the level of the inner ear is characteristic of the pigeon, and is not observed in the cat. The possible significance of this phenomenon as concerning synaptic organizations at the level of the organ of Corti is discussed. (Translated summary.)

Desnuelle, P. ***Quelques exemples d'adaptation enzymatique chez les mammifères.*** (Several examples of enzyme adaptation in mammals.) *Rev. Franc. Études Clin. et Biol., 1963, No. 8, 494-506.*

This paper contains a discussion of a series of experiments suggesting that the enzyme levels in mammals may be changed by a modification of the diet or the injection of various metabolites.

The first part is devoted to general considerations on the way enzymatic activities should be measured. Some examples are given which show that large errors may be made by selecting wrongly the experimental conditions of the measurement, the chemical or physical nature of the substrate and finally by activating the proteolytic precursors under unsuitable conditions.

The still dubious case of hepatic tryptophan pyrrolase is discussed in the second part. The available information suggests that the raise of the enzyme level in liver after injection of tryptophan into rats is due, at least partly, to a tighter binding of a cytoplasmic apoprotein and a microsomal coenzyme.

In the third part, the interesting case of pancreas exocrine enzymes is studied. It is shown that the levels of these enzymes in rat pancreatic tissue and rat pancreatic juice are modified by the composition of the diet. On a starch-rich diet, amylase is high and the proteolytic enzymes are low. On a casein-rich diet, amylase is low and the proteolytic enzymes are high. In contrast, a lipid-rich diet induces no significant changes of the lipase level. The adaptation of amylase and of the proteolytic enzymes to the main component of the diet starts at once and lasts about 3-5 days. The new levels attained at the end of the adaptation period are stable and reproducible.

Similar experiments performed on the ureogenetic enzymes in liver are described in the fourth part. Protein-rich diet, associated with high urea outputs, raise the levels of all liver enzymes involved in urea formation. By using tissue cultures, it can further be shown that high concentrations of arginine repress arginine-forming enzymes and, in contrast, enhance arginase. Therefore, the possibility exists that at least one of the mechanisms of enzyme regulation in mammals is similar to, if not identical with, the one already found in microorganisms. (English summary.)

Fabry, P., Petrasek, R., Kujalova, V., and Holeckova, E. ***Adaptace na zmeny privodu potravy.*** (Adaptation to changes in food ingestion.) *Ceskoslovenska gastroenterologie, 1962,* **16**, *246-251.*

It is common knowledge that the mammalian organism is able, within a relatively wide range, to adapt to changes in the intake of the most important nutriments and of calories. Very little attention, however, has been given to questions of adaptation and changes in the time distribution of food intake. The significance of this factor is pointed up by experiments with intermittently fasting rats who are alternated between periods of fasting and feeding. While there is hyperphagia in these animals on feed-

ing days the total caloric intake is substantially lowered. Despite this we find in these animals that there is a number of adaptive changes which are basically different from described results of chronic malnutrition.

As a result of an intermittent increase in food ingestion there are many morphological and functional adaptations of the digestive system, a strengthening of anabolic processes (increased glycogen synthesis and lipogenesis). The energy metabolism is also significantly modified; we find increased oxygen consumption *in vivo* and in individual tissues *in vitro*. Similarly the activity of many tissue enzymes is accelerated markedly.

Our findings show, in agreement with the results of Tepperman and Tepperman (1958) and Cohn and Joseph (1959, 1960), that not only the total volume and composition of nourishment but also the time distribution of its intake are important factors influencing metabolic processes. (Translated summary.)

Greiner, G. F., Conraux, C., and Picart, P. ***Principles physiques, expérimentaux et cliniques des stimulations pendulaires dans l'examen vestibulaire.*** (Physical principles, experimental and clinical of pendular stimulations in vestibular examination.) *Acta Otolaryngol., 1963,* **56**, *338-351.*

The method of vestibular stimulation by sinusoidal rotatory movements rests on clinical, experimental, and theoretic foundations already old since the beginning of labyrinthology. It has benefited from recent clarifications. Necessitating only relatively simple equipment, it can bring us incontestable information on the function of the vestibular apparatus.

The study of vertical movements will follow, because it will probably permit the completion of the examination of the otolithic function. (Translated conclusion.)

Gugenheim, C. ***L'aspect affectif des phénomènes de fatigue.*** (The affective aspect of fatigue phenomena.) *Travail hum., 1953,* **16**, *98-102.*

One French, one German and 8 English articles are reviewed. By comparing physiological studies with psychological observations made in industry, the author differentiates between objective and subjective fatigue.

Gugenheim, C. ***Étude expérimentale des aspects objectifs et subjectifs de la fatigue pendent un travail monotone. 1. Recherche effectuée sur un groupe d'étudiants.*** (An experimental study of objective and subjective aspects of fatigue during monotonous work. 1. A study on a group of students.) *Travail hum., 1953,* **16**, *219-240.*

Twenty students, taking voluntary part in this experiment, carried out a monotonous, free rhythm work, requiring a rather small muscular effort but constant attention (adaptation of "punching machine test" by J. M. Lahy). These test-subjects were asked to report fatigue experienced during the test. Performance and accuracy of work were recorded every minute.

The test-subjects reported a temporary "muscular" fatigue and a "nervous" fatigue which caused the interruption of the work. The examination of the experimental results led to classify the test-subjects into four groups. First group: the quantitative and qualitative work of the subjects belonging to this group was not changed in spite of fatigue experienced. Second group: the performance increases and the deviation from accuracy is greatly increased while fatigue is being experienced. Third group: deviation from precision, but mainly performance increase when the subject reports fatigue. Fourth group: adaptation to monotonous work is very unsatisfactory, the results become irregular early in the test, and the work is discontinued at an early stage of the test.

It is therefore possible to state:

1 – that subjective and objective characteristics of fatigue may not be concomitant;

2 – that sometimes, increased performance together with an increasing deviation from precision, accompany fatigue sensation;

3 – that deviation (from precision or performance, or both) is a behavior characteristic of a fatigued subject carrying out a monotonous, free rhythm work requiring continuous attention.

The experimental conditions are discussed and the influence of previous work for the adaptation to a monotonous work is mentioned as a hypothesis. (Translated summary.)

Koch, C. ***Risposte elettroencefalografiche dopo stimolazione vestibolare.*** (Electro-encephalographic reactions after vestibular stimulation.) *Riv. Med. Aero., 1963,* **26**, *263-272.*

Having acquired the possibility of simultaneously executing on the same individual the electro-encephalographic and the electro-nystagmographic examinations, the author examines the advantages deriving from the comparative examination of the two diagrams.

First of all, it is possible to observe comparatively the bioelectrical manifestations which are joined to the activity of the central nerve cells and of the cells reproducing the vestibular function through the nystagmic reflex. Moreover, a lot of time can be spared when these researches have to be made on a great number of individuals whose future activity requests special requirements, such as airplane pilots, drivers, railway men, etc.

The study of diagrams concerning a first contingent of individuals has re-confirmed the discussed existence of vestibular cortical areas, where it is probably realized the sensorial perception of the effect of angular speeds and thus the sensation of the movements of our body in space.

As to the EEG modifications after vestibular stimulation in individuals with clear cerebral pathologic signs, after these first observations it can be said that in most cases vestibular stimulation (by the rotation method) probably determines a lowering of the cortical bioelectrical activity, due to the inhibitive action from the nystagmogenous and oculomotor areas. (English summary.)

Ledoux, A. ***L'adaptation du système vestibulaire périphérique.*** (Adaptation of the peripheral vestibular system.) *Acta Otolaryngol., 1961,* **53**, *307-315.*

The inverse effects observed in the nystagmic responses to the rotatory test and to the caloric test may not be the manifestation of an adaptation of the sensory organ during a displacement of the cupula for a prolonged duration.

As a matter of fact, the modification of the electrical activity by prolonged stimulation of the cupula, shows a tendency to return to the level of spontaneous activity in spite of all the stimulating forces persisting in their action on the cupula. (Translated summary.)

Ledoux, A. ***Réponses électriques de l'ampoule du canal semi-circulaire à l'épreuve calorique.*** (Electrical responses of the semi-circular canal to the caloric test.) *Acta Otolaryngol., 1956,* **46**, *290-299.*

The experimental test of the electrical responses of the ampulla of the semi-circular canal at the time of the caloric test show that:

1. The optimal position of the head is that one which puts the semi-circular canal ampulla-up.

2. The most constant measure of the caloric effects, warm and cold, is the duration of the reactions (excitation or inhibition of the spontaneous activity) which seems independent, within certain limits, of the temperature of the water.

3. Within very strict experimental conditions, the intensity of the response is proportional to the temperature of the irrigating water.

4. For a given temperature, this intensity remains identical whatever is the duration of the irrigation or the strength (of flow) of the water. The latency and the duration of the response, for these experimental conditions, are factors dependent on the conditions of transmission of the calorics, or on circumstances opposing the temperature modification of the labyrinth (circulation, etc.)

5. The action of heat or cold upon the semi-circular canals gives responses which are in perfect concordance with the hypothesis of Barany. Nevertheless, other phenomena (cupular or liquid) intervene, which modify, for example, the rotatory response, if this test is given too soon after the caloric tests.

6. The caloric excitation is clearly distinguished from the rotatory excitation. The

liquid movement caused by the first is influenced by numerous factors (transmission of heat, thermal regulation, influence of the temperature upon the physical chemistry of the liquid and of the cupula) which makes an exact quantitative measure difficult. The liquid movement provoked by the second, acts upon a cupula with immutable characteristics which give responses of intensity and duration proportional to the intensity of the excitation.

7. In the practical irrigations, the canal is placed horizontally, then tipping the ampulla up gives responses quantitatively identical to those of the test done with the canal first placed with the ampulla up. But this first method introduces a disturbing factor in the response due to the action of gravity upon the cupula, at the moment of changing head position. (Translated summary.)

Maggiorelli, E. ***Determinazions Spattrophotometrica Del Meprobamato.*** (Spectrophotometric determination of meprobamate.) *Farmaco; Edizions Pratica (Pavia), 1958,* **13** *(12), 656-661.*

Describes a spectrophotometric method for determination of meprobamate based on its reaction with pdimethylaminobenzaldehyde. (Translated summary.)

Nato, A. ***Studies on the second phase of nystagmus.*** *Nippon jibiinkoka gakkai kaiho, 1960,* **63**, *40-53.*

Experiments were carried out on the secondary phase of nystagmus using healthy persons and rabbits. The following conclusions were obtained.

1. The secondary phase of nystagmus is a basic pattern of the nystagmus reaction common to rotatory, caloric, and optokinetic nystagmus.

2. The second phase of nystagmus is a function of the basic reflex arc of nystagmus reaction and is regulated by the higher control pathways involving the cerebrum and cerebellum. (English summary.)

Obersteg, J. I. ***Tod und Blutgerinnung; Experimentelle Untersuchungen über das postmorale Verhalten des Blutes in der 2. Phase der Blutgerinnung.*** (Death and blood clotting; experimental research on the postmortal behavior of blood in the second phase of blood clotting.) *Deutsche Zeitschrift für gerichtliche Medizin, 1954,* **43**, *177-216.*

The blood of healthy cats and dogs remains fluid in the vascular system after sudden death. This fluidity did not depend on a continuation of circulation after cessation of breathing; thus hypercapnia could not be excluded as a possible factor. Clot formation with subsequent fibrinolysis was not detected.

The fluid cadaver blood retained its coagulability *in vitro* until about three hours after death and coagulability was not lost during *in vitro* storage for several days. The author concludes that this blood did not contain a fibrinogen-destroying activity.

Fibrinogen was measured by an electrophoretic technique; using this criterion the author concludes that the loss of coagulability at about three hours after death is a result of fibrinogen destruction.

Stenger, E. ***Simulation und Dissimulation von Ohrenkrankheiten und deren Feststellung.*** (Detection of malingering.) *Deutsche Medizinisches Wochenschrift, 1907,* **33**, *970-973.*

Several methods of detecting auditory malingering must be used since it is only the consistency of the results that determines the validity of diagnosis. Repeated observations are required. A number of methods of misdirecting the patient by incompletely closing his good ear are described in detail. Other, related tests are also surveyed. In addition, the author describes his own observation that a sound presented to both ears, but louder in one, will be perceived only on the louder side.

From this observation, he suggests a malingering test.

Vidic, E. ***Papierchromatographische und spektralphotometrische Identifizierung barbitursäurefreier Sedativa, insbesondere von Meprobamat.*** (Paper-chromatographic and spectrophotometric identification of nonbarbituric sedatives and specifically mepro-

bamate.) *Archiv für Toxikologie, 1959,* **17**, *379-386.*

For the group of sedatives consisting of ureides, carbamates, and derivatives of pyridine and piperidine, the conditions of their separation from barbituric-acid derivatives were investigated.

For the separation and identification of the individual nonbarbituric sedatives, a paper-chromatographic procedure was developed. The mobile phase of this procedure is benzine with the addition of 3-7.5% of butanol. The visible demonstration of all substances, especially of meprobamate and of the ureides, can be accomplished through their transfer to chloramine and conversion of the reaction products with a solution of benzidine and potassium iodide in diluted acetic acid.

The solution of the sedatives in chloroform and aqueous alkaline media were investigated spectrophotometrically.

Through distillation in water vapor and boiling in acid solution, meprobamate furnishes a conversion product with the grouping -CO-NH-CO- which shows ultraviolet absorption maxima in chloroform and in alkaline buffer solution. The maximum in alkaline solution corresponds to the maxima of the ureides. In a strongly alkaline environment, the ureides show, in contrast to meprobamate, a time-dependent change of the spectrum which is based on the formation of hydantoins by ring closure.

Within the group investigated, meprobamate produces a specific color reaction with p-dimethylamino-benzaldehyde which is suitable for quantitative determination. The reaction product shows a characteristic absorption curve in the visible and ultraviolet light. (Translated summary.)

Weinland, Ernst. ***Über das Auftreten von Invertin im Blut.*** (The appearance of invertin in the blood.) *Zeitschrift für Biologie, 1906,* **47**, *279-288.*

The young dog can produce invertin in the blood serum when injected for long periods of time with subcutaneous sucrose, while under normal circumstances the invertin is found only in the small intestine. With inulin (a polysaccharide for which the body normally does not possess an enzyme) this behavior could not be demonstrated until now. (Translated summary.)