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<td>16. Abstract</td>
<td>An annotated bibliography of translations of foreign-language articles is presented. The 22 entries are concerned with studies in aviation medicine, vestibular function, body temperature, color vision, cholinesterase, nystagmus, alcohol, vestibulo-oculomotor function, anatomy, stress and air traffic control work, flight stress, anti-smoke hoods, histology, exercise, cardiology, histochemistry, air evacuation, respiration, and toxicology. Procedures for obtaining copies of the translations are included.</td>
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FOREWORD

This annotated bibliography of recently translated, selected research papers is presented as a scientific service of the Civil Aeromedical Institute and the FAA Medical Librarian. The aims of the publication are: (a) to provide interested researchers with information concerning translations of foreign-language articles as soon as the translations are available; and (b) to prevent duplication of translation costs and efforts.

In achieving these aims, bibliographic listing such as the present one are necessarily limited in number. They are also limited by the range of activities represented in the agency preparing the material. Thus, selective factors exist. Further, no attempt is made to evaluate the scientific worth of a given article. By providing a central repository from which such translated material can be obtained, however, it is hoped that interested scientists will derive otherwise unavailable benefits.

Copies of the translated material cited in this report may be obtained by writing to the address below. Please provide the librarian with the complete reference information.

Department of Transportation
Federal Aviation Administration
Civil Aeromedical Institute Library
AC-922
P.O. Box 92088
Oklahoma City, Oklahoma 73123
Back, P. and Hildebrandt, H. J. Zur Reaktivie-
run der Acetylcholinesterase: Titrimetrische
Untersuchungen an Hirnhomogenat und
Plasma nach Tabun-, Sarin- und Somanhem-
mung in vitro. (On the reaction of acetyl-
cholinesterase. Titrimetric studies on homoge-
uates of brain and on plasma after inhibition
in vitro with Tabun, Sarin, and Soman.)
Archiv der Pharmazie und Berichte der
deutschen pharmazeutischen Gesellschaft

Automatic electrometric titration was em-
ployed to determine the reactivating effect of
obidoxime on acetylcholinesterase from rat
brain homogenate and cholinesterase from
human blood plasma after inhibition with
Tabun, Sarin and Soman. Except for Tabun
and Soman-inhibited plasma cholinesterase,
obidoxime was found to have reactivating ef-
fects on the enzymes under specified conditions.

Besković, M. Morfologija, adresa i odnosi
petromastoidnog kanala kod lošalica. (Mor-
phology, content, and relationships of the
petromastoid canal in man.) Acta medica
Jugoslavica, 12:3–97, 1958 (Suppl. No. 1).

Eighteen hundred preparations were col-
clected consisting of pyramids of the temporal
bone. Of the preparations studied, 200 came
from fetuses, 389 from children, and 1,489 from
adults. By employing combined methods with
this large number of preparations, a compre-
hsive anatomical study of the origin and
morphology, content, topography, and devel-
opment of the petromastoid canal was ac-
complished.

Brunner, H. Zur klinischen Bedeutung der Inver-
sion des optokinatischen Nystagmus. (Clinical
significance of inversion of optokinetic nystag-
mus.) Archiv für Ophthalmologie, 129:30–36,
1932.

The significance of inversion of optokinetic
nystagmus as a diagnostic tool is illustrated
through the presentation of six case histories.
Central-labyrinthine nystagmus in its pure
form can be overcome by optokinetic nystag-
mus. Central-labyrinthine nystagmus may also
be inverted (1) if the central-labyrinthine
nystagmus is overcome by an ocular nystagmus;
(2) if the central-labyrinthine nystagmus is
combined with a lesion of the cortical vision
bundle; and (3) if the patient’s attentiveness is
disturbed.

D’Aguiara, E. and Raso, D. Rilevi nistagmo-
ografici post-rotatori in corso di intoxicazione
alcoolica acuta. (Post-rotatory nystagmo-
graphic findings during acute alcohol intoxica-
tion.) Clinica Oto-Rinolaryngiatria (Rome)

Vestibular responses were examined in five
male subjects both before and after ingestion
of 40-proof brandy. Blood alcohol levels
ranged from 80 to 95 mg%. Both motor re-
ponses and post-rotatory nystagmus were ex-
amined. The most consistent pre- to post-test
changes observed involved the form of the in-
duced nystagmic response. Qualitative altera-
tions (dysrythmia) were often in evidence
even when no quantitative changes appeared.

Grandjean, E., Wetzk, G. and Kretzschmar, H.
Psychophysiologische Untersuchungen über die
berufliche Belastung der Flugverkehrsführer der
Flughäfen Zürich-Kloten und Genf-Coëtairin.
(Psychophysiological investigations into profes-
sional stress on air traffic control officers at the
Zürich-Kloten and Geneva-Coëtairin airports.)

Occupational stress of ATC personnel was
studied using objective and subjective meas-
ures of fatigue, multiple moment observations,
and individual opinion questionnaires. Results
were compared with data from a comparison
group of telegraph operators. It was con-
cluded that the extreme occupational stress of
a mental and psychological nature (tension,
responsibility) which the controllers are sub-
dject to plus their tendency to show more signs
of fatigue necessitates a reduction in that stress
in order to maintain flight safety. The fol-
lowing recommendations for reducing occupa-
tional stress and fatigue were made: reasonable
shortening of work hours, favorable vacation
rules, improvements in working environment,
and organization of shift plans so that it would
be possible to limit hard day shifts to six hours.

Heller, A. "Über ein traumatisches Aortenan-
eurysma und traumatische Aneurysmen der
Aortenklappen. (Concerning traumatic aneu-
ysm of the aorta and traumatic failure of the
aortic valves.)" Deutsches Archiv für klinische
Medizin, 79:206-310, 1904.

An unusual case of aortic aneurysm, in which
there was a pathologically-anatomically proven
connection between the aneurysm and an acci-
dent which happened almost a year before
death, is reported. Based upon autopsy find-
ings and the case history, it was concluded
that a very strong muscle action resulted in the
stretching of the aorta entrance and the
breathing both of a piece of the aorta wall and
the beginnings of two aorta valves. Acute
failure of the aorta valve and a great widen-
ing of the left ventricle resulted. In the course
of the following months, hypertrophy, growing
of the aorta layer over the rig in the wall, and
development of the aneurism occurred.

Hildebrandt, H. J. Zur kombinierten Antidot-
therapie der tierexperimentellen Vergiftung
mit Tabun, Sarin, und Sonan. (Combined
antidote therapy in animals poisoned with
Tabun, Sarin, and Sonam.) Archiv der
Pharmazie und Berichte der deutschen
pharmazeutischen Gesellschaft (Weinheim),

The author presents results of experimental
antidote therapy on rats poisoned with certain
siliphosphates. For obidoxime, PPS, and
HS 6, the PR values did not exceed 1.5 in
Tabun, Sarin and Sonan poisoning. A com-
bination of obidoxime and atropine gives PR
values of 1.5 for Tabun, 6 for Sarin, and 1.2
for Sonam poisoning. Therapy with a com-
bination of G 306G, trilupromazine and
obidoxime gives PR values of 22 for Tabun, 30
for Sarin, and 1.7 for Sonam.

Houda, Y. and Colin, J. Échanges thermiques
et hydriques par les voies respiratoires de
l'homme. (Heat and water exchanges in the
human respiratory tract.) Pathologie-Biologie,

Within certain limits, a direct relationship
was found between the air temperature of in-
spired and expired air. For a given ambient
temperature, a rise in the water content of
inspired air is followed by a rise of expired air
temperature. The values of respiratory fre-
cuency and of tidal volume had little or no in-
fluence on expired air temperature for a given
environment. From the experimental data, a
chart was drawn predicting the relationship of
expired air temperature to the water vapor
content of ambient air. This chart also permits
permits rapid determination of the water con-
tent of expired air and the calculation of the
total heat exchange by the respiratory tract.

Iwane, M., Ono, M., and Sawada, M. Effects of
Coriolis stimulus during mild centrifugal G
load upon stick performance. (In Japanese)
Japan Air Self-Defense Force, (Tachikawa,
Japan), Aeromedical Laboratory Reports,

The effects upon stick performance (main-
taining a control stick in a neutral position) of
Coriolis stimulation in a centrifuge at low level
G was investigated in 30 subjects. Results in-
dicate that incorrect right forward movements
of the stick occurred frequently with head
movements to the left during clockwise rotation
of the centrifuge even at low levels of G.
Heart rate increased by more than 30 beats per
minute during stimulation and returned to the
pre-stimulation level immediately after rotation
ceased. No horizontal or vertical ENG was
observed. It was concluded that subjective
symptoms stem from one's predisposition to
motion sickness.

Kiting, J., Kutta, D. and Bleicher, A.
Temperaturregulation bei langdauernder
schwerer körperlicher Arbeit. (Thermoreg-
ulation during prolonged, strenuous exercise.)
Pfiffers Archiv für die gesamte Physiologie
des Menschen und der Tiere (Berlin), 301:241-
283, 1968.
During two hours of exercise on the bicycle ergometer in different environments (–4° to +32°C), the time course of body temperature (BT) was found to depend upon the climate with a higher rise in BT in the cold environment as opposed to the warm environment, followed by a slow increase of BT in the warm and a slow decrease in the cold. Oxygen consumption was, however, independent of environmental temperatures. Weight loss was proportional to the environmental temperature up to 25°C, at which point it increased more steeply. With rising room temperature (above 11°C), heart rate increased during work. It was concluded that a theory of thermal regulation by a resetting of the body thermostat during exercise could not be supported by this study.


Effects of various substances upon the cardiovascular and respiratory systems were considered. War gases produced pulmonary edema; chlorine gas produced mental stress; nitrogen gases produced pulmonary edema and acute cardiac insufficiency; various metals (phosphorous, lead, arsenic and mercury) produced anatomical changes in circulation; carbon monoxide produced tachycardias and cardiac dilatations; electrical trauma produced acute cardiac dilatation, ventricular fibrillation and cardiac arrest; lightning stroke affected the respiratory center and produced ventricular fibrillation; heat and sun stroke had an indirect effect on the cardio-vascular system; and blunt trauma to the thoracic wall produced hemorrhages, thromboses, and other disorders. Use of the electrocardiogram as an aid in detection of functional disturbances caused by toxic and traumatic injuries was suggested.


Color blindness was investigated in 32 patients with hepatic cirrhosis. The obtained incidence of 18.8% is clearly larger than that found in a comparison group. However, various facts suggest that in the cirrhosis patients the associated color perception is not of the conventional hereditary type. There was no evidence that the condition occurred more often in patients with Laennec's cirrhosis or in those with a history of severe alcoholism. (Modified translated summary.)


Rats were poisoned with 92 different phosphoric acid esters and, when the first manifestations of poisoning appeared, were treated with reactivators (2-PAM, Toxogeronin) alone and in combination with atropine. In no case did this therapy increase the toxicity. In the case of eight phosphoric acid esters (Assmotol, Baytex, Chlorthion, Dimethofos, Follithion, Metasystox (I), Mipafox, Paphtheon), no therapeutic effect or only a minor therapeutic effect (increase of DL₅₀<50%) was attained. The therapeutic effect was good (increase in DL₅₀, between 50 and 200 per cent in nine Phosphoric acid esters (DDVP, Dipterex, EPN, Folinat, Guathion M, Guathion A, Metasystox R, Methylparathion, Sulfotep), and it was very good (more than 300%) in five phosphoric acid esters (Diystox, Para- thion, Systox, TEPP, Terracor P). When rats poisoned with phosphoric acid esters are treated with reactivators, the therapeutic effect depends considerably on the phosphoric acid esters with which these animals were poisoned. Combinations of reactivators with atropine produced a clearly increased effect in some cases of poisoning (DDVP, Folinat, Guathion M, Guathion A, Metasystox R, Methylparathion, Parathion, Systox, TEPP, Terracor P).

It is also assumed that the reactivators will have a similar therapeutic effect in man. Since no additional damage is to be expected if the dosing is correct, we can say that reactivators should always be included in the therapy of phosphoric acid ester poisoning in man. (Entire article.)

A collection of critical summaries of 79 medical research articles related to physical exercise and sports is presented. Topics covered include: methodology of athletic-medical research; heart, circulation, respiration and metabolism; influence of climate; details of different types of sports; pharmacology; and sport pathology.

Morian, K. Beitrag zur klinischen Kenntnis der Neuritis acuta alcoholica. (Contribution to the clinical knowledge of neuritis acuta alcoholica.) *Deutsche ophthalmologische Gesellschaft* (Dresden), 8:278-281, 1910.

A general description of alcoholic neuritis of the eighth nerve is presented.

In the cases discussed, onset of the disease was usually sudden and usually affected both sides. Results of functional tests seem to indicate a genuine nerve deafness. In three cases, disturbances of hearing were combined with dysfunction of the vestibular apparatus.

Mouton, L. and Armand, G. Essai de cages aux anti-fumées. (Test of fireproof anti-smoke hoods.) *Paris Airport Authority. Internal Report, November 1968.*

The Paris Airport Authority tested smoke hoods developed by the Federal Aviation Administration, U.S.A. The smoke hoods consist of a semi-rigid plastic sack worn over the head which resists temperatures as high as 1,200°C and provides an air supply found to last from one minute and 15 seconds to two minutes and 30 seconds depending upon lung capacity and activity. Hearing was not impaired, but vision was hindered by moisture condensation after about one minute of wearing. The use of oxygen in conjunction with the hoods is discussed and modifications of the mask are suggested.


A specialized service in secondary medical transportation, intended to evacuate patients to a specialized center from a hospital in which treatment is insufficiently described. Twenty per cent of the transfers are made by air, using either turbo- or piston-engined helicopters, small turboprop, or medium or long-range aircraft equipped with standard medical units. The expense of the service is counterbalanced by the reduction in hospital stay and recovery time. However, it was concluded that some type of regulation was required to avoid abuses of patients.


In order to test the efficiency of Chrom-galloycinin dyeing for the quantitative histochemical determination of nucleic acid, the author wanted to establish the influence, on the dying capacity of histologic preparations, of a simultaneous preparation or an after-treatment for the destruction of nucleic acids.

Intensive examinations of the results indicate that Chrom-galloycinin is capable of dyeing the deoxyribonucleic acid at pH 0.9, and that treatments that made the ribonucleic acid undyeable with other reactions do not influence a dying with Chrom-galloycinin at pH 0.9 and 1.7. Moreover, it could be observed that the treatments made in order to remove the nucleic proteins intensify the dyeing as well as the purine bases and pyrimidine derivatives which were not removed during the fixation and the alcoholic dehydration. (Modified English summary.)


Investigations have been conducted into professional stress on air traffic control officers based on the determination of urinary cate-
cholamines. For this purpose, six persons performing different activities were examined for three days. The urine samples were analyzed fluorometrically, and the level of catecholamines (adrenaline and noradrenaline) was stated in micromoles per 100 mg of urinary creatine. Differences were found between three occupational groups. Radar control work involved significantly ($p < .05$) higher catecholamine excretion (77.9) than duty officer's or ground control work (52.5) and undemanding office work (45.5). (Translated summary.)


The hearing and balance systems of 21 subjects, some with normal hearing and others with a hearing disturbance, were tested prior to and following consumption of alcohol. No additional decrement in hearing was demonstrated under the influence of alcohol. The effect of alcohol upon the vestibular system was evidence by the appearance of a direction-changing positional nystagmus. This phenomenon was felt to be of central origin. Practical implications of the experimental results are discussed such as the proposed use of positional nystagmus with the blood alcohol test for the evaluation of the traffic safety of drivers.


This study was concerned with the importance of measurements of soft-part thicknesses for the determination of individual and racial resemblances in the method of plastic facial reconstruction on skulls. Fifteen reconstructions are discussed. It was concluded that in this method of facial reconstruction, individual resemblance will not be achieved by using only average measurements of the thicknesses of soft parts. Employing photographs and working within the most important of the average measurements, individual resemblances could be achieved. A greater degree of success was achieved, however, in producing racial resemblance by the use of average soft part measurements in the plastic reconstruction method.


Physiological effects of flight stress were studied in jet pilots who were training on the Starfighter F 104 G. Stress reactions to flying were evaluated by blood determinations including ATP, blood sugar (B2), ascorbic acid (ASC), the free 11-hydroxy-corticosteroids (11-OH-CS), and the activities of four cell enzymes (ALD, GOT, GPT, MDH). The results indicated that MDH, GTP and 11-OH-CS increase after difficult flights, ALD and B2 increase after easy flights, ASC increases after easy and night flights, ascorbic acid increases with all flights, and corticoid decreases during night flights. The changes in GOT and ATP were not significant.