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MEDICAL NEWS LETTER

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Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be, nor are they, susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

Change of Address

Please forward changes of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda, Maryland 20014, giving full name, rank, corps, and old and new addresses.

The issuance of this publication approved by the Secretary of the Navy on 28 June 1961.

CONTACT LENSES

LCDR William P. Mulligan MC USN, Chief of EEN&T Service, U. S. Naval Hospital, Bremerton, Washington.

The increasingly widespread use of corneal contact lenses among U. S. Navy personnel has created a number of problems and raised a number of questions. Medical officers are frequently confronted with the problem of whether or not to recommend the use of contact lenses to patients, as well as the medical problem of treating complications.

Whether or not personnel on active duty in the Navy who can expect duty aboard ships and in isolated areas should be allowed to wear contact lenses at all is a reasonable question. Certainly their indiscriminate use and fitting by non-medical personnel should be condemned. There are certain individuals who need to wear contact lenses for either medical or optical reasons, such as aphakia, keratoconus, high myopia, and anisometropia. Many of these individuals could not be retained on active duty and be expected to perform their duties without the use of contact lenses. However, most individuals, in the Navy as elsewhere, wear contact lenses almost exclusively for cosmetic reasons. Since there are literally thousands of man-hours lost to the Navy each year due to complications among this group, is the cosmetic advantage to the individual in the best interests of the Service? Probably no hard and fast answer can be given to this question.

The number of patients seen in eye clinics with contact lens difficulties has sharply increased in recent years. The most common and least serious complication among contact lens wearers is superficial erosion of the corneal epithelium due to overwear or improper fit. This syndrome is familiar in every ophthalmology clinic—the sailor with binocular eye patches being led into the clinic by two of his shipmates. Removal of the patches reveals severe blepharospasm, tearing, and ocular pain, and the patient is unable to open his eyes for a visual acuity test. The symptoms are promptly relieved by one drop of a topical anesthetic. Examination of the eyes then reveals severe conjunctival injection and punctate staining of the cornea with fluorescein. Treatment consists of dilating the eyes with a cycloplegic such as Cyclopentolate, instilling topical antibiotic drops, and firm pressure dressings over both eyes. Topical anesthetic drops should only be used once for examination, and no ointments should be used as both of these tend to retard healing of the corneal epithelium. This necessarily removes the patient from duty and places him either on the binnacle or sick list. Healing is frequently complete in twenty-four hours, but sometimes may require three to four days. The patient can then be returned to duty, but frequently he has no spectacles, and therefore his usefulness is somewhat limited. He should be admonished not to wear his contact lenses for at least two weeks, and then only after being examined by an ophthalmologist. It should be pointed out that the typical onset of this

syndrome occurs two to eight hours after removing the contact lenses, hence frequently in the early morning hours, awakening the patient from a sound sleep.

More serious complications due to contact lens wear can and do occur. Two cases of corneal opacification of a permanent variety occurred recently. Both of the individuals obtained their lenses from native practitioners in Japan. The first case was initially seen with bilateral acute corneal abrasions as described previously. Although the corneal epithelium healed within forty-eight hours, superficial opacities involving the epithelium and superficial stroma persisted, and were still present after six weeks. This patient's best corrected visual acuity has been reduced to 20/30 in each eye, and is not expected to improve.

The second patient was seen on a routine examination and superficial punctate staining of both corneas was noted. Although the staining cleared twenty-four hours after discontinuing contact lens wear, hazy superficial opacification of the central corneas persisted and the patient's best vision is 20/25 in each eye. This case points out one of the serious problems in the wearing of contact lens. The cornea becomes hypesthetic as tolerance to the lenses develops, and serious damage, which would cause severe symptoms in other people, remain undetected in these individuals.

The most serious complication of contact lens wear is the development of a corneal ulcer. This is most likely to occur when the corneal epithelium has become eroded, when an acute conjunctivitis or blepharitis is present, or where there is gross contamination of the lenses. Although such an incident is rare, its possibility cannot be disregarded, as such an incident almost always leads to blindness if not to loss of the eye.

It should not be concluded from the foregoing that contact lenses are extremely dangerous or that people should not wear them. These devices are probably safer than ordinary spectacles providing the patient is properly instructed in their use, cares for them properly with meticulous attention to hygiene, is examined periodically by an ophthalmologist, and has proper care immediately available should symptoms of a complication develop. It is frequently difficult to fulfill all of these qualifications among Navy personnel. Large numbers of personnel have purchased contact lenses abroad, especially in Japan. Although these lenses are inexpensive and usually fit well, they are frequently of inferior quality and tend to warp with age. Proper instruction of the patient is often neglected, and follow-up is inadequate. Once at sea again, such patients are at the mercy of nature. Fortunately it is most often benign.

In view of these conditions, it is recommended that:

1. All contact lenses for personnel on active duty in the U. S. Navy be fitted only under the supervision of an ophthalmologist or other medical officer competent in this field.

2. Contact lenses for personnel on sea duty be recommended only for those with special medical and optical problems, and not for those who seek only cosmetic gain.
3. All contact lens wearers have an adequate pair of spectacles in their possession at all times.
4. Any person wearing contact lenses who develops persistent blurred vision, abnormal lacrimation, eye pain, or red eyes be referred for ophthalmological consultation at once.
5. All persons wearing contact lenses be examined by an ophthalmologist at least once a year.

A recommended routine for contact lens wearers is as follows:

1. Wash the lenses thoroughly at least once daily with a detergent such as phisohex®. Also wash the case.
2. Store the lenses dry.
3. Use wetting solution, not saliva, for moistening the lenses prior to insertion.
4. Remove the lenses and rinse them at least once during the wearing period.
5. If symptoms of blurred vision, eye pain, or increased tearing develop, immediately remove the lenses and do not wear them again until examined by an ophthalmologist.

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Nutritional Disease and The Eye*

Donald S. McLaren MD, PhD**, Borden's "Review of Nutrition Research," 25(1): 1-11, January-March 1964.

Ocular manifestations of nutritional deficiency are among the oldest signs and symptoms of disease known to man. Night blindness and its cure by liver is mentioned in the Ebers papyrus (circa 1600 B.C), in Chinese writings of the same period and later by Hippocrates and Roman writers. Celsus (25 B.C - 50 A.D) is believed to have been the first to use the term "xerophthalmia."

In medieval Europe night blindness was widespread and liver and certain herbs were known to be curative. The French physician, Jacques Guillemeau (1585) gave an accurate description of xerophthalmia; it is only within the last century that this condition emerged as a disease of high incidence among young children, in some countries, caused by dietary deficiencies and precipitated by certain infections. With the dawn of the vitamin era the role of vitamin A deficiency in animals and man became clear.

Of shorter history and less well-defined etiology is nutritional amblyopia, or nutritional retrobulbar neuropathy. The first description is probably that of Bontius in 1645 from the East Indies, but early accounts of pellagra and beriberi frequently included optic nerve involvement. These, together with more recent evidence from prisoner-of-war camps in World War II and certain

endemic foci and deficiency secondary to chronic alcoholism, suggest deficiency of one or more of the B complex vitamins.

The evidence from animal experiments, summarized in this article, indicates that many other factors may possibly be involved in human eye disease; the two ancient disease complexes, xerophthalmia and nutritional amblyopia, have remained until the present time the most clearly characterized and the most important from a public health aspect in many countries.

General Inanition and Starvation

Limited observations in man and extensive studies in animals show the eye to be one of the organs best protected under adverse conditions of inanition and starvation. This appears to occur because of the relatively advanced degree of development reached by the eye at the time of birth and to the great functional significance of this organ. The numerous isolated reports of the development of cataract in patients with profound nutritional disturbance lack convincing evidence of a true causal relationship. The many thorough studies carried out on starved individuals at the end of World War II produced little evidence of serious eye involvement. Exceptions to the findings in general are provided by the condition termed "superficial polymorphous keratopathy" in patients with nutritional edema in Athens, and narrowing of the retinal arteries, edema of the optic disc and white or yellowish spots on the retina reported from Germany and Russia.

Vitamin A

Hypovitaminosis A

The ocular manifestations, night blindness, xerophthalmia and keratomalacia, are the most characteristic evidences of vitamin A deficiency. In our present state of knowledge, they are the only proved clinical signs of deficiency of this vitamin in man. They also occur readily in most animal species that have been studied. In cattle, blindness frequently results from constriction of the optic nerve, probably due to disordered bone growth, a lesion not known to develop in man. In pigs and rats maternal deprivation of vitamin A causes numerous congenital malformations in the offspring, among which anophthalmos, microphthalmos, folding of the retina and cataract prominently figure. Although a definitive study has not yet been carried out in an area where vitamin A deficiency is endemic, there is no evidence to suggest that congenital malformations of the eye or other organs are due to human maternal nutritional deprivation.

Night Blindness

Impairment of scotopic vision, that is, vision under conditions of poor illumination, can be demonstrated by dark adaptometry or rod scotometry before

the subject actually complains of night blindness. The electroretinogram in experimental animals and in man also shows characteristic changes at this stage. Before these tests become positive, the liver, which normally contains about 95% of the body's vitamin A stores, has been depleted and the plasma vitamin A levels, circulating as the alcohol, have fallen below the lower normal limit, usually taken as being in the region of 20 micrograms/per cent. However, lower plasma levels frequently are found in individuals having no impairment of dark adaptation and appearing to be healthy. A significant proportion of a population having subnormal plasma vitamin A levels suggests a poor intake of pre-formed vitamin A or its precursor, carotene.

Presently available vitamin A night vision tests for use in epidemiological studies require expensive and complicated equipment and fully cooperative subjects. Thus, this most sensitive means of revealing early deficiency of vitamin A is not applicable to the most susceptible age group, the pre-school child. Night blindness, as an isolated symptom of vitamin A deficiency or accompanied by early xerosis of the conjunctiva, often occurs seasonally where people rely on locally grown foodstuffs. Special groups such as troops in the field, prisoners, those undergoing prolonged fasts and famine victims have been particularly prone to suffer. Night blindness per se is not pathognomonic of vitamin A deficiency; it also may be part of the symptomatology of several non-nutritional eye conditions.

Animal experiments have demonstrated that prolonged deficiency of vitamin A can lead to structural as well as functional changes in the retina. These changes consist first of degeneration of the rods, the outer nuclear and molecular layers, and finally the inner nuclear layer. A surprising degree of regeneration may take place with vitamin A therapy. Unlike all the other changes due to vitamin A deficiency, those affecting the retina are not influenced by vitamin A acid. Several Asian ophthalmologists have reported a speckled appearance of the fundus oculi in man, often in association with night blindness and Bitot's spots, which they claim clears up with vitamin A treatment. This condition requires further study before it can be accepted as a sign of hypovitaminosis A.

Xerophthalmia and Keratomalacia

Xerophthalmia literally means "dry eye" and refers to the characteristic xerosis of the conjunctiva and cornea. By the time the patient, usually a child between the ages of 9 months and 4 years, shows these advanced signs of vitamin A deficiency not only is there imminent danger of irreversible blindness but the general condition is serious. This is characterized by severe nutritional marasmus or kwashiorkor and the mortality, even with prompt and adequate therapy is high. In the absence of a better term, xerophthalmia is in general use to signify the whole syndrome of advanced hypovitaminosis A with ocular involvement; "xerosis conjunctivae" and "xerosis corneae" are used to describe the specific changes in the anterior segment of the eye.

Keratomalacia implies actual softening and destruction of the cornea leading inevitably to some degree of blindness, usually complete, in addition to keratinization. This liquefaction of the cornea, sometimes called "colliquative necrosis," characteristically is unaccompanied by reaction or inflammation in the uncomplicated case. The end result is always some degree of corneal scarring. It may range from a fine nebula and dense leucoma, involving a greater or lesser extent of the cornea, but most commonly the lower central part and often with iris inclusion, to extreme distortion of the globe as in phthisis bulbi or anterior staphyloma.

The early stages of xerosis are characterized by dryness, thickening, wrinkling, "unwetability," loss of transparency, and increased pigmentation of the bulbar conjunctiva, usually most pronounced in the exposed interpalpebral fissure. A lesion long associated with night blindness and vitamin A deficiency is Bitot's spot. It consists of a grayish or whitish superficial plaque of desquamated epithelial cells, generally with an oval or triangular outline and foamy surface. It usually is situated close to the limbus on the exposed part of the bulbar conjunctiva, more commonly temporally than nasally. If the Bitot's spot is accompanied by the other changes of xerosis conjunctivae and corneae, as it usually is when found in the young child, then both the spot and the other changes respond to vitamin A therapy. On the other hand, isolated Bitot's spots, often minimal in size, commonly reported from some parts of the world in older children and adults, usually do not clear up with vitamin A therapy; as a rule these subjects have vitamin A plasma levels within the normal range and no dark adaptation impairment. It is not known if such Bitot's spots are sequelae of a former vitamin A deficiency. Exposure and local irritation undoubtedly play a part.

Epidemiology. Evidence indicates the male is more susceptible to night blindness, Bitot's spots, and xerophthalmia than the female. Keratomalacia seems to affect the sexes equally.

Xerophthalmia, despite knowledge of its causation and the general availability of concentrated forms of vitamin A, continues to be a serious public health problem in many parts of the world. The geographic areas chiefly affected are nearly all the countries of South and East Asia, and certain parts of the Near East, Africa and Latin America. While xerophthalmia is especially a disease of poverty, its chief cause is failure to incorporate rich sources of vitamin A at hand into the diet of the young child, rather than unavailability of such foodstuffs. Even so, the importance of precipitating factors, such as infectious diseases, must not be overlooked. Among these diseases, measles, gastro-enteritis, and tuberculosis are of particular importance. Furthermore, the frequent association of vitamin A deficiency with protein malnutrition, with possible impaired mobilization of liver vitamin A reserves due to hypoalbuminemia, and the importance of dietary fat in the absorption of carotene, need to be borne in mind.

In North America and Western Europe xerophthalmia was not uncommon in the pre-vitamin era. Sporadic cases still occur as a result of vitamin A deficiency secondary to disease of the intestinal tract and the glands, affecting

absorption or storage. Occasional cases are reported arising through the mismanagement of an infant feeding problem, and should be carefully guarded against.

Treatment. Night blindness and the milder conjunctival changes respond well to 30,000 I. U. of vitamin A daily for a few days, given orally as cod or halibut liver oil. Corneal damage must be treated as an emergency; recommended doses are in the region of 100,000 I. U., daily for the first three days. It is preferable to give half the dose by mouth as absorption is best by this route, and half in a water or saline-dispersion by intramuscular injection as intestinal absorption is probably impaired in these ill children.

Prevention. In areas where it has been estimated that about 1 in every 100 children go blind from xerophthalmia, the treatment of all infants with large doses of vitamin A during their critical period is fully justified. Elsewhere, the most practical prophylactic measure would seem to be a program of general nutrition education for the mother and young child. Special emphasis should be on prevention of xerophthalmia by incorporation of local leafy vegetables and milk into the diet, and the prolongation of breast feeding into the first part of the second year of life.

Hypervitaminosis A

Symptoms of toxicity to large doses of vitamin A may arise after acute or chronic poisoning. Cases of acute toxicity have usually occurred in adults as a result of the consumption of polar bear or bearded seal liver by artic explorers and in infants not deficient in vitamin A being given large therapeutic doses. Toxic ocular manifestations have commonly been the complaint of diplopia and lights before the eyes in adults, and papilledema accompanying a rise of intracranial pressure in children and adults. There is a rapid return to normal on withholding the vitamin, thus the fear of inducing the condition should not prevent vigorous treatment of xerophthalmia.

Several scores of chronic hypervitaminosis A cases have been reported mostly in infants and young children following the daily ingestion of 100,000 I. U. or more of vitamin A over many months. The ocular features include papilledema, extra-ocular muscle paralyses, diplopia, and occasionally exophthalmos. A case of a 17 year-old boy who had been taking 20,000 I. U. daily for 18 months for acne is reported as producing discrete superficial hemorrhages throughout the retinae of both eyes.

Physicians and public alike, in this vitamin-conscious era, need to be made aware of the dangers of excessive dosage of vitamin A. (To be cont'd)

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** See next page.

** Dr. Donald Stewart McLaren has been Research Professor of Clinical Nutrition and Director of the Nutrition Program at the American University of Beirut, Lebanon since May, 1962. This Program of Research and Training on Nutritional Problems in the Middle East has been established by a grant (AM 05285) from the National Institutes of Health to the Institute of Nutrition Sciences, Columbia University, N. Y.

Dr. McLaren has served as a consultant in nutritional eye disease to the World Health Organization in Indonesia (1957), Central America (1960), and the Near East and North Africa (1962-1963). At present he is the World Health Organization consultant for Jordan. He has also served as a consultant in Nutrition Surveys in Ethiopia (1958, 1959) and Jordan (1962) to the Interdepartmental Committee on Nutrition for National Defense, NIH, U. S. Department of Health, Education and Welfare.

Dr. McLaren has been awarded prizes for published work in the field of nutritional eye disease by the British Medical Association, the Ciba Foundation, and the Barraquer Institute of Barcelona. He has published more than 50 scientific papers on this subject as senior author, including a textbook entitled "Malnutrition and the Eye."

He is a fellow of the Royal Society of Tropical Medicine and Hygiene, member and Middle East correspondent of the Nutrition Society (United Kingdom), member of the British Medical Association, and Fellow and past-president of the Royal Medical Society, Edinburgh.

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The Feasibility of Surgery of the Brain in the Anticoagulated Animal

Robert J. White MD, Research Associate, Collin S. MacCarty MD, Section of Neurologic Surgery, and John H. Grindlay MD, Section of Surgical Research. Proceedings of the Staff Meetings of the Mayo Clinic 36(24): 633-636, November 22, 1961.

Although controlled anticoagulation is a well-recognized therapeutic adjunct in the treatment of certain syndromes of intracranial ischemia,[1] little information is yet available regarding its effect on the actual vasculature of the brain and particularly its influence on the specific clotting mechanisms operative during surgical manipulation of that organ. The presumption has been that cerebral operations in the state of anticoagulation would be risky, if not impossible, because of hemorrhage.[2]

Since extended periods of total arrest of circulation to the brain during or following cerebral cooling have become feasible, anticoagulation would appear to be necessary as an adjunct to prevent intravascular thrombosis during such stasis. Further, if extracorporeal cooling of the blood stream is the preferred method for reducing cerebral temperature—and its practicality has been

demonstrated[3] then the preferred method, as it is presently conceived, requires anticoagulation.

These problems pose the important question: Can the brain be operated on successfully during anticoagulation? This article is concerned with an attempt to determine an answer from the experimental animal at normothermic temperatures.

Methods and Materials. Twenty mongrel dogs weighing 10 to 12 kg and eight female Rhesus monkeys weighing 3 to 5 kg were used for the experiments. Neurosurgical operations, which included cortical resections, lobectomy, and resection of the sagittal sinus, were performed under light intravenous pentobarbital (nembutal) anesthesia and sterile conditions. Except for resection of the sagittal sinus, in which a transfrontal incision was made, the cerebral operations utilized a standard horseshoe incision placed anatomically in the scalp overlying the desired cerebral region. In all cases free bone flaps were fashioned.

The table shows the distribution of procedures among the series. Five dogs and three monkeys served as operative controls without anticoagulation.

A vascular route for intravenous use was obtained by placing a catheter in the inferior vena cava via a posterior leg vein. Following reflection of the scalp and temporal muscle and removal of a free bone flap, the animals were heparinized (3 mg/kg body weight) via the catheter. Coagulation studies were performed during operation in eight of the dogs and three of the monkeys. After hemostasis was obtained at the operative site and before the dura was closed, dilute hexadimethrine bromide (polybrene) solution (3 mg/kg body weight) was administered via the same catheter. Thus the animal was actively anticoagulated only during the intracranial operation. The amount of residual hemorrhage was studied at necropsy performed 24 to 72 hours postoperatively on three monkeys and five dogs, one from each operative anticoagulated group, and on all control animals. The remaining animals were observed daily for 2 weeks and periodically for 2 months.

Results. Every animal in both the anticoagulated and control series survived the operative procedures. No extensive neurologic examination was conducted, but each animal appeared to be in excellent condition within 24 hrs after operation, having no overt alteration in motor activity or behavioral response. This status continued in all cases until necropsy or the end of the period of observation.

During operation, bleeding within the brain tissue itself was easily controlled with judicious use of cautery or absorbable gelatin foam (gelfoam®). Cortical resection and lobectomy presented no more difficulty of surgical execution in the anticoagulated animals than in the control animals.

Distribution of Neurosurgical Procedures Among Anticoagulated and Control Animals

Operations		Animals			
		Anticoagulated		Control	
Procedure	Location	Dogs	Monkeys	Dogs	Monkeys
Cortical resection	Frontal Parietal	2 3		1 1	
Lobectomy	Frontal Occipital	2 4	1 2	1 1	1 1
Sagittal-sinus resection	Anterior	4	2	1	1
Total operative series		15	5	5	3

Somewhat greater care was needed in controlling oozing from raw pial surfaces, particularly at the edges of the cerebral resections and at the basal and medial cerebral surfaces if these were inadvertently injured in any way.

The only region where a greater effort was necessary to control bleeding in the anticoagulated animals was extradural. Frequently more time and effort were necessary to stop hemorrhage at the dural-bone interface in the anticoagulated preparations than in the control animals. Nevertheless, use of cautery, gelfoam®, and tacking sutures always brought this troublesome oozing under control.

The operative region was considered dry prior to the injection of polybrene. On two occasions during this infusion minimal hemorrhaging developed, but it was controlled easily with cautery.

All clotting times determined for the dogs and monkeys during operation were in excess of 45 minutes. No difficulty was encountered in scalp closure, but administration of polybrene had been completed before this was begun. There were no instances of wound hemorrhage.

At necropsy in every case (anticoagulated and control groups), examination of the sites of cerebral operation demonstrated little or no hemorrhage. The amount of hemorrhage seen was considered typical for the particular stage of the cerebral wound, and it was similar in the two groups. Only in one case was bleeding excessive, and this presented in the form of an extradural hematoma in an anticoagulated canine preparation.

The muscles were grossly infiltrated with more blood in the anticoagulated animals than in the controls. No unusual bleeding was encountered in the anterior sagittal sinus resections. Indeed, on several occasions hemorrhage from openings made deliberately in the sinus was controlled with gelfoam® and pressure.

Although Meyer[4] has studied the effects of systemically administering anticoagulants on pial circulation during periods of cerebral ischemia, the authors were unable to find any definite investigations relating to the possibility of surgically manipulating brain tissue in the anticoagulated animal.

Repeatedly they were impressed by the ease of working with cerebral tissue in the anticoagulated state at normal temperatures. While the larger cerebral vessels presented no difficulty in hemostatic control, the pial vessels, both along the cut surfaces (where they appear to draw back from the incision) and after accidental trauma (as by retraction) in regions difficult to visualize, presented a slightly greater problem in hemorrhage control in the anticoagulated conditions.

In the authors' experience the region where bleeding was found, on occasion, to be most troublesome was at the bone-dural interface. With care and persistence, however, it was controllable in every instance. A similar situation occurs in the human following anticoagulation in the profound hypothermic state.

On the basis of these experiments it is suggested that operations on the brain can be accomplished successfully in the anticoagulated animal

at normal body temperatures without more than ordinary fear of hemorrhage.

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A New Look At Tranquilizers

USDHEW, PHS, NIH, National Institute of Mental Health, May 21, 1964.

"Tranquilizing" drugs are misnamed and show broader effects than previously suspected, according to a recent report by scientists at the National Institute of Mental Health, Public Health Service, U. S. Department of Health, Education, and Welfare.

New evidence indicates that the phenothiazines, the most widely used of the "tranquilizers," improve the passive, withdrawn, apathetic patient even more than the agitated, abusive one. The drugs' action, therefore, is broader and more versatile than is presently outlined in standard medical texts.

Dr. Jonathan C. Cole, Director of the Institute's Psychopharmacology Service Center, reported that the following symptoms which are considered fundamental to schizophrenia are the most improved by the phenothiazines; poor social participation, poor self care, confusion, indifference to environment, and hebephrenic gestures (grimacing and giggling).

After six weeks of drug therapy, these symptoms were markedly improved. "In contrast," Dr. Cole added, "hostility, agitation, anxiety, and ideas of persecution—symptoms which are usually regarded as "target symptoms" for tranquilizing therapy—although influenced by the drug treatment, were not affected to as great a degree."

"During the past dozen years, the phenothiazines have been stereotyped as "ataractics" or "tranquilizers," the implication being that their dominant action is to calm excited patients by relieving the patient's anxiety."

The drugs were shown to act in two ways. They alleviated the patient's pretreatment symptoms, and prevented the development of other schizophrenic symptoms the patient did not have before treatment. The authors conclude that the drugs seem to have a general alleviating and preventive anti-schizophrenic action, and can be used appropriately for a wide variety of schizophrenic patients.

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MISCELLANY

Chemical, Biological, and Radiological Weapons Orientation Course

Twenty-five classes in the Chemical, Biological, and Radiological Weapons Orientation Course will be conducted at the U. S. Army Chemical Corps Proving Ground, Dugway Proving Ground, Dugway, Utah, by the Department of the Army during the Fall and Winter 1964 and Spring 1965. The duration of the course is three and one-half days.

Officers of Lieutenant Commander through Flag rank are eligible to attend. Civilians in the grade of GS-12 or higher must be in a key position where need-to-know is mandatory. Persons who have received complete CBR briefings during the past year should consider delaying their attendance. TOP SECRET security clearance is required. Limited quotas will be provided the Bureau of Medicine and Surgery by the Chief of Naval Personnel on a "first come first served" basis.

The course provides a high level orientation on Chemical, Biological Warfare, and Radiological Implications of Nuclear Warfare, and is designed to acquaint senior military and civilian personnel of the Armed Forces with United States doctrine, policy, techniques and capabilities in CBR Warfare.

The scope of this course relates to national policy concerning CBR Warfare;United States present and potential capabilities for waging CBR Warfare; foreign capabilities; concepts, techniques, target analysis, systems of employment, integrated weapons systems, operational applications, comparative logistics, strategic appraisal, joint aspects, convert activities, and future developments in Chemical and Biological Warfare; live firing demonstrations employing chemical agents against typical tactical target;staff responsibilities in radiological fallout prediction, monitoring, survey, and radiological recovery; student-faculty panel.

Requests should be forwarded in accordance with BUMED INST. 1520. 8. Courses are scheduled for August, September, October, November and December 1964, and March, April, May and June 1965. Requests must be received in the Bureau of Medicine and Surgery by the following dates:

Convening Dates of Courses	Deadline For Request to Reach BuMed
31 August 1964	6 July 1964
14, 21, 28 September 1964	20 July 1964

Convening Dates of Courses		Deadline For Request to Reach BuMed	
5, 12, 26 October	1964	10 August	1964
9, 16, 30 November	1964	14 September	1964
7, 14 December	1964	12 October	1964
1, 8, 15, 22, 29 March	1965	4 January	1965
5, 26 April	1965	8 February	1965
3, 10, 17, 24 May	1965	8 March	1965
7, 14 June	1965	12 April	1965

—Training Branch, Professional Division, BuMed.

* * * * * *

Nominations Desired for Awards to be Presented at the 71st Annual Meeting of the Association of Military Surgeons of the United States

Each year an Awards Board, with a membership from the Medical Services of the Army, Navy, Air Force, Veterans Administration, and Public Health Service, is formed by the Association of Military Surgeons of the United States for the purpose of choosing those persons to whom awards may be given at the annual meeting of the Association. This year, the 71st Annual Meeting of the Association, will be held at the Sheraton-Park Hotel, Washington, D. C., 20-22 October 1964.

The following medals may be awarded for outstanding contributions in the fields indicated:

The Gorgas Medal (Preventive Medicine)

The Gorgas Medal was established in 1942 by Wyeth Laboratories of Philadelphia in memory of Major General William Crawford Gorgas whose work in preventive medicine made possible the construction of the Panama Canal. General Gorgas became Surgeon General of the Army. The Gorgas Medal is presented annually by the Association of Military Surgeons of the United States for distinguished work in preventive medicine for the Armed Forces. The Award consists of a Silver Medal, a scroll, and an honorarium of $500.00.

The Stitt Award (Notable Work in Medicine)

The Stitt Award was established in 1954 by the Pfizer Laboratories Division, Charles Pfizer and Company, Inc., Brooklyn, New York. This Award honors the memory of Rear Admiral Edward Rhodes Stitt, a Surgeon General of the Navy who made outstanding contributions to tropical medicine. The Award is made to the member of the Association who has done some meritorious work in the field of antibiotics. The Award consists of life membership in the Association, a bronze plaque, and an honorarium of $500.00.

The Stitt Award (cont'd)

Since the field of antibiotics has imposed some limitations on the selection of the person for this award, the Pfizer Laboratories recently suggested that the criteria for selection be broadened to the field of medical research in general.

The McLester Award (Nutrition and Dietetics)

The McLester Award was established in 1954 by the J. B. Roerig Company Division, Charles Pfizer and Company, Inc., Brooklyn, New York, to honor the memory of Colonel James Somerville McLester MC USAR, of Birmingham, Alabama. Colonel McLester was a consultant to the Surgeon of the American Expeditionary Forces in World War I. He was recognized for his outstanding achievements in the field of nutrition. This annual award is presented to the person who is, or has been, at any time a commissioned officer, or of relative status in the Federal Medical Services, and who has done outstanding work in the field of Nutrition and Dietetics. The Award consists of a bronze plaque and an honorarium of $500.00.

The Andrew Craigie Award (Pharmacy)

The Andrew Craigie Award was established in 1959 by the Lederle Laboratories, Division of American Cyanamid Company, Pearl River, New York. This award honors the memory of Andrew Craigie, first Apothecary General of the military forces of this country, who served under General George Washington during the Revolutionary War. The award is made for outstanding accomplishments in the advancement of professional pharmacy in the Federal government. The award consists of a Silver Plaque and an honorarium of $500.00, furnished through the courtesy of the Lederle Laboratories.

The Sustaining Membership Award (Medical Research)

The Sustaining Membership Award was established in 1958 by action of the Sustaining Members of the Association. The award is presented annually to an individual in one of the Federal Medical Services who has made some outstanding contribution in the field of medical research. The award consists of a scroll and an honorarium of $500.00.

The John Shaw Billings Award (Executive Medicine)

The John Shaw Billings Award was established in 1962 by Eaton Laboratories, Division of the Norwich Pharmacal Company, in memory of Lieutenant Colonel John Shaw Billings whose contributions to Executive Medicine and to medical literature, culminating in the founding of Army Medical Library and development of the Index Catalogue, has provided a lasting monument to his industry and genius. The Award is given annually to an individual, under 41 years of age, who possesses outstanding potential in the field of Executive Medicine, and consists of a scroll and an honorarium of $500.00

The Major Louis Livingston Seaman Prize (Notable Article Published in Military Medicine)

In 1900, Major Louis Livingston Seaman, Surgeon of the First U. S. Volunteers, Spanish-American War, offered a prize of $100 for the best essay on an approved subject. Originally this award was made by the Military Service Institution of the United States, but is now given annually by the Association of Military Surgeons of the United States for some notable article published in MILITARY MEDICINE during the past year. The award is made possible by funds left to the Association by Major Seaman. The prize consists of a scroll and an honorarium of $160.00.

Suggestions for persons to be considered for this award are made by the Editor of MILITARY MEDICINE. Any person, however, may make suggestions to the Board.

Other Awards

The Founder's Medal, the Sir Henry Wellcome Award and the Federal Nursing Service Award are also made annually by the Association independdently of nominations from the various services. (See Military Medicine 129 (2): 178, February 1964)

The Association requests that nominations, with justification (biographical data, appropriate reprints of work published, and citation) be submitted in six (6) copies, double-spaced typing, not later than 30 June 1964, to:

Association of Military Surgons of the United States
1500 Massachusetts Avenue, N. W.
Washington, D. C. 20005

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Dr. Schaefer To Assist National Research Council

The National Research Council has asked Dr. Herman J. Schaefer, head of the biophysics branch at the Naval School of Aviation Medicine, to participate as a member of a group working on space radiation problems.

A leading authority on the subject of cosmic radiation, Dr. Schaefer recently presented a paper at the annual meeting of the Radiation Research Society which was held at Miami Beach. His paper was on radiation measurements of Project Mercury.

While at this meeting he also participated in a committee session of the International Commission on Radiological Protection from Radiation Hazards in Supersonic Transports. —P. I. O., NAVAVNMEDCEN, Pensacola, Fla.

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Project SEALAB 1

Four Navy divers will live and work 192 feet under the sea for a three-week period this summer in a project called SEALAB 1 to test man's ability to work for extended periods of time underwater. The team will include one Navy doctor and three enlisted men.

The test will take place near the Navy oceanographic research tower ARGUS ISLAND, 30 miles southwest of Bermuda. The site was chosen because the ocean bottom there is flat and affords excellent visibility. The weather off Bermuda is at its best during June and July when this test is scheduled.

In the course of the test continuous marine observation and underwater light and sound surveys will be made. SEALAB 1 is sponsored by the Office of Naval Research in collaboration with the Bureau of Ships and the Naval Medical Research Laboratory, New London, Connecticut.

The divers' 40-foot long laboratory and quarters will receive electrical power, emergency gas, communications and fresh water from the large covered lighter YFNB-12 on the surface. Except for these services, the SEALAB's crew, breathing a helium, oxygen and nitrogen mixture, will maintain an autonomous existence under a pressure of 86 pounds per square inch. This is the same pressure as the water outside, thus providing for access between the chamber and the water.

The SEALAB will be equipped with electric lights, bunks, lavatory facilities, work bench, heaters, dehumidifiers, emergency water tanks, a fresh water shower, and cooking facilities. "Semi-closed" system underwater breathing apparatus and conventional SCUBA apparatus will both be used by the SEALAB divers. They may use a two-man underwater vehicle for transportation.

Personnel on the large covered lighter, the project's surface support ship, will continuously monitor SEALAB operations via closed circuit television.

Communications will be maintained with the underseas laboratory around the clock. In addition, the YFNB-12 has a submersible decompression chamber which can be used to evacuate the SEALAB's crew if the necessity should arise. Provisions have also been made for the autonomous survival of the capsule inhabitants in the event of loss of support from the surface.

In 1962, the French undersea explorer, Captain Jacques-Yves Costeau established a shallow underwater manned station off Marseilles, France, for feasibility studies. A year later, two men from Costeau's research group occupied a helium-atmosphere station 90 feet under the surface of the Red Sea for a week.

In the United States, personnel of the United States Naval Medical Research Laboratory, under the direction of CAPT George F. Bond, Medical Corps, USN, have been conducting a research program entitled "GENESIS 1." Since 20 May 1960, a long series of laboratory experiments with animals, which observed all the principles of laboratory animal care, and pressure chamber

tests with humans proved that man can safely perform useful functions for long periods of time under pressures up to 100 pounds per square inch. SEALAB is designed to provide further evidence of this concept.

—NAVNEWS, Washington, D. C., 1 May 1964.

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Naval Medical Officer Receives Honorary Degree

The honorary degree of Doctor of Humane Letters was conferred on RADM Martin T. Macklin MC USN, by Villanova University on 1 June 1964, at the 122nd Commencement Exercises held at the University.

ADM Macklin is a native of Philadelphia and completed his pre-medical studies at Villanova in 1930. He was appointed to his present flag rank in April 1963, and is now Commanding Officer, U. S. Naval Hospital, Portsmouth, Va., and District Medical Officer of the FIFTH Naval District.

In attendance at the awarding of this distinct honor were the Admiral's wife, Helen, and his three children, Marie, Margaret and Gilbert, in addition to former professors, classmates, civilian and military friends and associates. He has had a distinguished career of approximately twenty-nine years service in the Medical Corps of the Navy and is held in high esteem and respect by his myriad of friends, colleagues and shipmates.

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Medical Doctor Wins Gold Medal Award at the U. S. Naval Radiological Defense Laboratory

Dr. Marvin Lee Tyan, who gave up a successful medical practice in internal medicine and hematology three years ago in order to devote his entire time to research, recently received a Gold Medal for Scientific Achievement at the U. S. Naval Radiological Defense Laboratory's third annual presentation ceremony. A Silver Medal was presented to a physicist, Dr. William C. Schieve.

The Scientific Director, Dr. Eugene P. Cooper, made the presentations. The award was made for Dr. Tyan's "original observations, development of experimental techniques, and formulation of hypotheses concerning the immunological mechanism and process by which the living animal rejects genetically foreign tissues or cell transplants." Dr. Tyan has shown that the mammalian immune system is heterogeneous in function, i. e., that the cell system or "line" of cells in mice which responds to xenogeneic (i. e., rat) skin grafts is qualitatively distinct from the cell population which responds to an allogeneic (i. e., from another strain of mouse) skin graft. Furthermore, these cell "lines" appear to possess dissimilar biological properties, as seen by their responses to X-radiation, to passively transferred specific antisera, and to their relative dependence on the thymus.

—From Public Info. Office, 12th Naval District.

From the Note Book

Officer Selection Battery Test Score Obtainable. Hospital Corpsmen who took the Officer Selection Battery Tests in January 1964 for the Medical Service Corps in-service procurement program for FY 1965 may obtain their score on this test by directing an inquiry to the Chief of Naval Personnel (Attn:Pers B-623). —Medical Service Corps Division, BUMED.

Barbiturates and Alcohol. Research by personnel of the Aerospace Medical Division at Brooks AFB, Texas, on ordinary barbiturates used to aid in sleep suggests that these barbiturates combined with an ordinary intoxicating amount of liquor leaves behind a lethal dose of nerve-depressant alcohol.

This research seems to explain the mechanism of cases in which a man who has had a few drinks and a moderate dose of barbiturates before going to bed is found seriously ill or dead the next morning. Up to now, doctors have had a hard time explaining what the trouble was. In cases where the victim died, coroners have had difficulty deciding between accident and suicide.

—U. S. Air Force Medical Service Digest XV(V): 9, May 1964.

Moon Environment Experiment Completed. Six volunteer research subjects, from the Naval School of Aviation Medicine, recently completed a four-week moon environment study at the Naval Ordnance Laboratory, White Oak, Md. This laboratory was chosen because it has equipment to provide low magnetic fields.

Four of the men lived in a magnetic environment, like that of the moon, with a thousand times less magnetism than that of the earth. The other two lived nearby in an enclosure of normal environment—serving as control subjects for comparison purposes.

The men were not allowed to have any magnetic material. They cut their food with plastic knives; ate with plastic forks; did not shave; sponged-bathed during the week; and on Saturday nights bathed in 30-gallon plastic cans. Their beds were moved in for sleep from 10 p. m. to 6 a. m.

Leisure time was spent with conversation, comparing beards, watching television, which was located outside of the enclosure, and reading. They even held a private hootenanny. Psychological and physiological tests were held daily. Exercise consisted of step tests and weight lifting.

The two control subjects were Ronald W. Whitling and Kenneth W. Porter. Men in the moon environment were two brothers, Dwight D. and Ronald W. Thompson; Darryl C. Albert; Richard M. Overall.

—P. I. O., NAVAVNMEDCEN, Pensacola, Fla.

A proposal by several governments for the establishment of a World Research Agency for Cancer was favorably received by the Seventeenth World Health Assembly. The possibility of setting up such an agency is now being discussed by the Director-General of WHO with the governments concerned.

—WHO Chronicle 18(4): 116, April 1964.

FROM THE SECRETARY OF THE NAVY

The problems of race relations which Americans must face today are both urgent and complex; they demand creative attention and they involve many of the democratic principles which we respect and defend. It is the practical applications of these principles which give rise to the sharp divergencies of opinions being expressed today all over America.

The public policy concerning full equality of opportunity for Federal employees has been forcefully and succinctly enunciated by the President of the United States. While all Federal personnel are obligated to support this policy, we in the Defense Department must be doubly vigilant, for discrimination here is a tragedy and a travesty.

Within the Naval Establishment misunderstanding of the policy and uncertainty about individual responsibility must not exist. No official or employee, military or civilian, may discriminate against another because of race, religion, ancestry, or any other irrelevant reason. Every official and employee, military and civilian, must to his best ability participate positively and creatively in the equal opportunity program.

I have pledged my personal commitment to this program. I am confident that each of you will do the same.

Paul H. Nitze

PAUL H. NITZE
Secretary of the Navy

—From Office of Industrial Relations, Navy Department, Washington, D. C. OIR Newsletter XV(5), May 1964.

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DENTAL SECTION

Professional Judgement

A large proportion of the difficulties which we encounter in Navy dental circles arises from lack of communications. This was brought to mind by a letter recently received from Great Lakes. The writer described various techniques used to salvage teeth with deep carious penetrations. One school of thought concerning exposure of the pulp holds that radical removal of carious dentin should be avoided and that cariostatic temporary restorations should be placed over remaining carious dentin to stimulate development of sclerotic dentin and secondary dentin (Kronfeld, R.—Histopathology of the Teeth and Their Surrounding Structures. Lea & Febiger. Phila. 1939. Oral Histology and Embryology. C.V. Mosby Co., St. Louis. 1944.) This long recognized conservative procedure is taught at some dental schools and currently is called an "indirect pulp capping." Recent research reports have indicated a higher percent of success from indirect pulp capping than from direct pulp capping (IADR 1961, Abstract 320, 1963 Abstracts 22 and 23). When this technique is used at Great Lakes, the procedure is entered on the 603 as an "indirect pulp capping." This conservative technique lends itself well to the cement alloy program. Both methods contribute to protection of the pulp. By combining the two in properly selected cases, we provide our patients excellent preventive dentistry service.

Frequently in discussions over the value of the cement alloy program, critics have been particularly outspoken about discovering carious dentin under restorations; hence the need for better communications. In the first place, when decayed tooth structure is purposely left under a permanent or temporary restoration, a 603 entry to that effect should be made. This will complete the record and protect the professional reputation of the operator treating the patient. Secondly, dental officers in the field should acquaint themselves with all techniques and be willing to honor another man's careful diagnosis and treatment plan. One feature worth remembering is that an indirect pulp capping may represent just as careful dental treatment as complete removal of all carious dentin, and in some cases, possibly better. The moral is that different ships have different long splices.

—RADM F.M. Kyes DC USN

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Technique of Application of Stannous Fluoride in a Compatible Prophylactic Paste and as a Topical Agent*

Nancy J. Dudding and Joseph C. Muhler. J Den Child 29(4):219-224, 1962.

To obtain the maximum effectiveness from stannous fluoride (SnF_2), a prophylactic paste containing SnF_2 should be used preceding topical application of an SnF_2 solution, both of which are followed by daily use of the stannous fluoride dentifrice. Since the clinical effectiveness of both the topical and prophylaxis is dependent upon the thoroughness of clinical application, the authors present a step-by-step procedure for the clinical application.

SnF_2 Prophylaxis. Step I.--Scale teeth to remove calculus and soft debris. Inflammatory conditions of gingiva should be resolved before SnF_2 application. Step II.--Mix SnF_2 prophylactic paste, fresh for each patient, after the scaling. In a dappen dish, stir 0.3 gm crystalline SnF_2 and 1.0 ml distilled water until completely dissolved. Add 2.0 gm of special pumice and stir thoroughly. Step III.--Polish teeth. Only one quadrant is polished at a time, with a soft rubber cap. Each surface is polished for ten seconds. Unwaxed dental floss is used to carry the SnF_2 paste into each interproximal area. The patient is allowed to rinse thoroughly at completion of each quadrant. Operator is cautioned not to use spray-rinse as this causes the mixture to be more easily swallowed.

SnF_2 Topical Application. Step I.--Preparation of materials. Cotton rolls should be cut to size. Cotton roll holder should be loaded. Cotton applicators should be made. The size of applicators is important. If too small they will not hold enough solution; if too large they will touch cotton rolls, and saturate them instead of teeth. Step II.--Preparation of patient. Adjust the patient in chair. Place the back of chair as far forward as possible and adjust the headrest, positioning the head with the chin slightly down to keep excess amounts of saliva and SnF_2 from passing into the throat and nasopharynx. Step III.--Preparation of SnF_2 solution. To 10 ml distilled water in a beaker, add crystalline SnF_2 and stir to dissolve, using 0.8 gm for children or 1.0 gm for adults. Do not add flavoring or coloring agents. They reduce the effectiveness of the SnF_2. Step IV.--Topical Application. The operator should treat no more teeth at any one time than he can keep free of saliva. Isolate the teeth with cotton rolls and thoroughly dry teeth with compressed air before solution is applied. The freshly mixed solution is applied to the isolated dried teeth. The teeth must be saturated with the solution for four minutes. If at any time during the treatment the teeth become contaminated with saliva or allowed to dry, the treatment should be repeated. The patient is allowed to expectorate at the end of treatment but is cautioned not to rinse, drink or eat for 30 minutes.

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* Abstracted by CAPT Frank D. Grossman, DC USN

Editors Note: Although specifics, e.g. concentrations and exposure times abstracted in the preceding article, vary from the recommended Navy procedure (U.S. Navy Medical News Letter 42(7):22-24, 4 Oct 1963), the clinical procedures are appropriate.

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Discoloration of the Teeth Associated with Oxytetracycline Administration to Premature Birth Children

Zegarelli E.V., Rosenstein S.N., Kutscher A.H., Fahn B., Botwick J., and Silverman W. J Den Child 30(2):69-70, 1963.

Prolonged high dosages of broad spectrum antibiotics, especially tetracyclines, have been suspected of being a causative factor of discoloration of teeth because of studies reporting discoloration of teeth of cystic fibrosis patients under treatment with tetracyclines. In order to evaluate the role of tetracyclines, this study was set up.

Forty-six children, ages 4-8, who were prematurely born and had received intravenous oxytetracycline hydrochloride .005 gm/Kg/12 hours from birth to the age of 120 hours were examined for discoloration of teeth. The discoloration was measured by using a standard tooth shade guide with 30 different colors under daylight conditions. These results were tabulated and compared to similar data obtained from a control group of 48 essentially normal children, ages 2-12.

Seventy percent of the children who received tetracyclines exhibited darker than normal shades of two or more teeth whereas only twenty-nine percent of the control group of children exhibited such conditions.

——Abstracted by CAPT Gordon H. Rovelstad DC USN

Effect of Microconcentrations of Stannous Fluoride Solutions on Dental X-Ray Films

Lillian O. Dahl and Joseph H. Muhler JADA 58(2):24, 1959.

Dental roentgenograms can be contaminated by being touched with fingers previously used to administer stannous fluoride in paste or topical form or by the solution that remains in the patient's mouth. Microconcentrations remain on the hands of the dentist or dental technician even after they have been thoroughly washed. Similarly, concentrations sufficient to alter the roentgenogram remain after the patient's mouth has been thoroughly rinsed. It is suggested that roentgenograms be taken before stannous fluoride treatments.

——Abstracted by CAPT F.D. Grossman DC USN

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Phosphates and Experimental Caries*

Nutrition Foundation, Inc., 99 Park Avenue, New York 16, N.Y. Phosphates and experimental dental caries. Nutrit Rev 21:315-317, Oct. 1963. From Dental Abstracts 9(4):218-219, April 1964.

Various phosphorous compounds have been found effective in reducing the incidence of caries in the rat. Unfortunately, data on the effect of phosphates on caries in human subjects are practically nonexistent. Much needs to be done to find an explanation for the effect of phosphates in preventing caries in the rat, and whether this benefit can be obtained in man.

McClure (1963) reported that addition of 1.75 percent diammonium orthophosphate, 1.75 percent monocalcium orthophosphate, 2.07 percent tricalcium orthophosphate, 1.58 and 1.75 percent sodium metaphosphate, or 1.58 percent sodium hexametaphosphate to the diets of rats all caused major, significant reductions in the incidence and severity of caries.

C.A. Ostrom and R. Van Reen (1963) reported that whereas intubated phosphate had no demonstrable influence on the incidence of caries, 3.0 percent dietary disodium orthophosphate had a significant influence in reducing early Type I carious lesions, and a slight growth-depressing effect. A report by Harris, Baker and Nizel (1962) indicated that when monopotassium orthophosphate is added to the diet it is relatively unavailable in the oral cavity but has a systemic influence.

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Impression Accuracy of Reversible and Irreversible Hydrocolloids*

Hollenback, G. M. 17000 Ventura Boulevard, Encino, Calif. A study of the physical properties of elastic impression materials. The linear and over-all accuracy of reversible and irreversible hydrocolloids. J South California D.A. 31:403-408, Dec. 1963. From Dental Abstracts 9(4):229-230, April 1964.

Impressions made with five reversible hydrocolloids and five irreversible hydrocolloids, tested for overall accuracy by procedures designed to simulate conditions encountered in clinical use, proved to be highly accurate. The hydrocolloids can be used for taking full mouth impressions for the production of casts. Working qualities of all materials are good. They are free from disagreeable odor, are pleasant in appearance and should satisfy both the operator and the patient.

Although the hydrocolloids generally are satisfactory for all full mouth impressions, specially made trays using a small bulk of material always should be used in taking impressions which require a high degree of accuracy. In making orthodontic models and study casts, the operator can use stock trays with the hydrocolloids.

Impressions made with reversible hydrocolloids are less accurate than those made with polysulfide and silicone materials. Irreversible hydrocolloids are slightly less accurate than the reversible type, but these inaccuracies are so small that they have little clinical significance.

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Personnel and Professional Notes

Navy Commendation Medal Awarded

CAPT Charles E. Meyers DC USN, was awarded the Navy Commendation Medal by the Secretary of the Navy. The citation reads: "For meritorious service from September 1953 to August 1963 as Chief of a Research Division in the combined laboratories of the Naval Medical Research Unit Number ONE - University of California - Naval Biological Laboratory. Exercising outstanding professional competence and resourcefulness, Capt Meyers designed and personally conducted field and fleet studies concerning specific health problems under circumstances not heretofore investigated in modern weapons systems. At the same time, he directed a team of naval and civilian scientists and technicians in the associated back-up laboratory research studies. Aside from the useful new knowledge gained, this research will contribute directly to the maintenance of health of naval personnel in regard to respiratory infection and closed environments. Capt Meyers' outstanding achievements reflect great credit upon himself and were in keeping with the highest traditions of the United States Naval Service."

CAPT Meyers' unique background, PhD in Bacteriology, combined with his DDS enabled him to carry out this unusual assignment in an outstanding manner. During this tour of duty, he conducted significant research under various conditions, including the Antarctic, which contributed directly to the protection and maintenance of the health of naval personnel in regards to respiratory infections and closed environments. Capt Meyers is presently assigned to the Naval Support Activity, London, England.

Letter of Commendation Presented

LT Glen C. Hornbuckle DC USNR, was presented a Letter of Commendation on 23 April 1964, by The Commanding General, Force Troops, Fleet Marine Force, Pacific, Twentynine Palms, California. The Commendation reads:

"For conspicuous action while temporarily attached to the Fourth

Battalion, Eleventh Marines, Force Troops, Fleet Marine Force, Pacific, Twentynine Palms, California, on 7 March 1964. At approximately 1745 an accidental explosion occurred in Gun Position #1 of "M" Battery, during Operation "WINTER NIGHT." LT Hornbuckle was one of the first on the scene after the explosion. Taking charge of all Battalion Medical Personnel and enlisting the aid of Marines on the scene, he quickly and effectively initiated emergency procedures and supervised the treatment of all injured personnel. His efficient and competent manner inspired and steadied other personnel in the vicinity. Working methodically and proficiently, he moved from wounded to wounded, issuing orders, administering aid, offering words of encouragement, and restoring confidence. He continued to direct the efforts of medical personnel with skillful precision and accompanied his patients when they were evacuated from the area. LT Hornbuckle's coolness and outstanding professional abilities served to reassure even the most critically wounded man in his fight for survival. His performance of duty during this unexpected emergency was above and beyond the response which could normally be expected under the attendant circumstances and was in keeping with the highest traditions of the United States Naval Service."

Navy Dentist Invited to Participate in Research Conference. CAPT F. L. Losee DC USN, of the Administrative Command, USNTC, Great Lakes, Ill., received an invitation to contribute an essay for the Conference on Geographic Factors Influencing the Occurrence of Oral Diseases. The Conference, to be held 10 November 1964, in San Francisco, California, is sponsored jointly by the ADA Council on Dental Research, the Federation Dentaire Internationale Commission on Research, and the International Association for Dental Research. CAPT Losee's essay will be on the subject, "Geographic Distribution of Caries, Cancer and Coronary Disease."

Navy Dentist Presents Lecture. Commander A.D. Echols, DC USN, of the U.S. Naval Dental Clinic, Norfolk, Virginia, presented a lecture with slides entitled, 'Posterior Extension - Partial Dentures - Design and Impressions," before the Peninsula Dental Society component #2 of Virginia State Dental Association on 6 April 1964, in Hampton, Virginia.

Appointments by Naval Examining Board. The following personnel were selected by the Naval Examining Board, 8 April 1964, for appointment in the grade of lieutenant, Dental Corps, U.S. Navy.

"G" "W" Allen
Ralph A. Beck, Jr.
Lathe L. Bowen
Arthur D. de la Ossa
Donald H. Donoho
Dennie D. Flynn
Lawrence W. Gregory
Ernest S. Koema
Jerry L. Lane
David W. Sexton
Thomas H. Sugg
Neil H. Waldow
W.P. Witherspoon, Jr.

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AVIATION MEDICINE DIVISION

Statistics for Flight Surgeons

Raphael F. Smith, LT MC USNR, U.S. Naval School of Aviation Medicine, U.S. Naval Aviation Medical Center, Pensacola, Fla.

Introduction. The data processing system described below has been established in the U.S. Naval School of Aviation Medicine, using data cards supplied by hospitals served by the Data Processing Center, U.S. Naval Aviation Medical Center, and clearance notices from medical departments of the Basic Air Training Command. The system has functioned satisfactorily. This article has been written to serve as an introduction to the system and, hopefully, to generate interest in the system prior to its implementation in all naval aviation activities.

The Data Processing System

A wealth of useful information could be created for the flight surgeon by a careful analysis of medical statistics obtained from naval aviators. A staggering amount of training-dollars is lost when a designated aviator is disqualified because of a medical defect; yet, on the other hand, the risk of allowing an unfit aviator to fly high performance aircraft cannot be tolerated. The flight surgeon must practice an art which consists largely of balancing these risks and probabilities. Although naval flight surgeons are trained at a single school, as they diffuse into operational squadrons and other aviation activities, opinions and judgements evolve that are based on individual experiences. Since these clinical experiences are biased by many forms of selection, rarely does a single physician accumulate enough experience and objectively categorize it well enough in his mind to allow accurate generalizations that are applicable to a large population. Divergent courses of action are perhaps manifestations of these widely differing experiences. For example, how should a flight surgeon handle a student aviator with a definite peptic ulcer? What is the disposition of a designated naval aviator with recurrent peptic ulcer disease? Is an aviator with an ulcer an asset or a liability to a squadron? Statistics could answer these questions in a quantitative way by correlating the disease with performance, time lost from flight duty, and aircraft accident rates. Another problem involving a different organ system is that of minor electrocardiographic changes in the older aviator. Do these changes indicate that a coronary occlusion is imminent or are these merely a manifestation of the normal

aging process? Medical statistics would serve to supplement the physician's personal experience relative to these problems and to many similar areas. They would also provide objective standards of reference for disposition boards such as the Special Board of Flight Surgeons. In summary, the statistics needed are those that will enable the flight surgeon to predict the future of a group of aviators with a specific disease entity.

A new system of summarizing hospital records (NavMed 1437-A Circa May, 1963) that has replaced the F card has provided an excellent source of medical data from naval aviators. In this system, data processing centers are established at certain naval hospitals which serve naval activities throughout the world. Included on the 1437-A form is a section for designator coding. It will be an easy matter to obtain information regarding hospitalized aviators from the data processing centers. Since a large percentage of the flight surgeon's patients are not hospitalized, a system is needed to obtain information on this group in order to round out the statistical description of the aviator population. Obtaining this information is not so formidable a task as it might seem. Since the flight surgeon examines each aviator who has had an incapacitating illness before he resumes his flying duties, the clearance notice (up-chit) contains the cause of grounding and from the data on the up-chit, the duration of grounding can easily be calculated. The following system has been established in the U.S. Naval School of Aviation Medicine to obtain statistics: 1. Duplicate IBM cards are automatically punched from form 1437-A data for all patients with aviation designators and are filed in this center. 2. A copy of the aeromedical clearance notice, NavMed 1381 (up-chit) will be forwarded to the Data Processing Center, U.S. Naval Aviation Medical Center when an aviator resumes flying or after a change in service group. 3. The data forwarded to the Data Processing Center is to be used for statistical computations only. It is not to be available for specific information about an individual which could be used in medical action directed toward that individual. In other words, the system is not intended to monitor the management and disposition of individual cases.

Once data begin to accumulate in this system, the applications will be manifold. The system will complement two already smoothly working automatic data processing systems--the processing of aviation accidents at the U.S. Naval Aviation Safety Center and the prediction of a student aviator success (human quality control system) based on psychological factors, being conducted at the U.S. Naval School of Aviation Medicine. Besides correlation with aviation accidents and performance, the system will be used in assessing physical standards and in many branches of clinical research.

The system is currently undergoing a "shake-down" phase in the Naval Air Training Command. It is hoped that the necessary BuMed instructions to extend the system to all aviation activities will be issued in July. No matter how elaborately mechanized a medical data processing system is, it is still dependent, in the final analysis, on the individual physician. If clearance notices are carelessly completed and if the diagnoses are vague, the system

merely accumulates precise misinformation. It is hoped that the need for the system is clearly apparent to the flight surgeon and that his cooperation will be forthcoming.

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Navy Admiral Under Pressure

by

Jerry Dunning, JO-2

News Release from Naval Air Force, U.S. Pacific Fleet, NAS North Island, San Diego, California.

In an explosive 350 milliseconds, the simulated altitude of the pressure chamber soared from 30,000 to 60,000 feet, filling the room with clouds of water vapor. The instructor's voice crackled through the intercom to the man seated in the chamber. "Admiral," he said, "without the pressure suit you're wearing...you'd be dead."

The man in the chamber was Rear Admiral Jackson D. Arnold, Force Material Officer on the staff of Commander Naval Air Force, U.S. Pacific Fleet. The veteran naval aviator was completing Full Pressure Suit Training at the Aviation Physiology Training Unit aboard North Island Naval Air Station, San Diego, as the 2,000th trainee since that portion of the unit was established in 1956.

Such dramatic object lessons as explosive decompression are standard procedure for nearly 300 pilots per year who are fitted with and indoctrinated in the use of the Full Pressure Suit (FPS). Although the cockpits of the Navy's high altitude, high performance jet aircraft are pressurized, an emergency ejection or ruptured cockpit at extreme altitudes (as simulated in the pressure chamber) would be fatal without the pressure suit. Lacking pressurization at 63,000 ft., for instance, normal body temperature is sufficient to cause body fluids to boil. The boiling point of water at this altitude is 98.6°.

Admiral Arnold's many responsibilities as Force Material Officer include the maintenance, repair, modification and technical readiness of Pacific Fleet Naval Air Force aircraft and related materials. Taking this responsibility personally, he signed up for the concentrated two-day course at the Aviation Physiology Training Unit to experience, first hand, the environment which exists in high-performance aircraft.

The environment he experienced was an external pressure of 3.4 pounds per square inch (as opposed to the normal 14.7 lbs. psi at sea level) and an atmosphere of 100% oxygen. This is the controlled condition the Mark 4 FPS automatically maintains at altitudes above 35,000 ft.

In the suit Admiral Arnold was wearing, he would have been comfortable on the moon. Lacking only the heat-reflecting silver coating, the FPS is the same as the space suit used by astronauts. Because of their working

experience with the FPS, the Aviation Physiology Training Unit has acted in an advisory capacity on such NASA projects as Mercury, Apollo, and Gemini. They also maintain laison with many civilian space industries.

FINAL CHECK —— Before entering the pressure chamber, Admiral Arnold and his pressure suit receive a final check from Commander Goldenrath. Official U.S. Navy Photograph.

Lectures and check-outs received with the FPS are supplemented by actual experience in the suit. Fully suited, students operate various equipment and instruments they will encounter in flight. An operational flight trainer, which simulates the cockpit of a jet aircraft, gives them an opportunity to "fly" in the suit. Pressure chamber runs to 70,000 ft. simulate actual extreme pressure variations which may occur.

The FPS and training in it are designed for pilots' safety both in and out of aircraft. Because of the insulated and air-tight construction of the suit and its self-contained oxygen supply, it serves as a safety device in another extreme environment——the ocean.

Should a pilot ditch at sea, the FPS would keep him afloat and insulate

him from exposure to the elements. The suit could even sustain him to a depth of 180 ft. under water.

In addition to FPS training, the Aviation Physiology Unit schools 3000 pilots a year in a one-day physiology course. This training, which has been carried on since the unit was started in 1943, is required of all Navy pilots once every two years.

This training, too, prepares pilots to meet and survive in a different environment. They are familiarized with the ejection seat and oxygen breathing equipment. Students learn to adjust to night vision, spatial disorientation, and to avoid such dangers as hypoxia and hyperventilation. Low altitude runs in the pressure chamber again simulate actual conditions pilots will encounter.

To conduct such technical training, personnel attached to the physiology unit must be specially trained in the field of aviation medicine.

Commander Walter L. Goldenrath (Medical Service Corps), Officer-in-Charge of the Aviation Physiology Training Unit, has a Master of Arts degree in human physiology from the University of California at Berkeley and a Master of Science degree in medical physiology and biomedical instrumentation from the University of Southern California. He has further specialized in aviation physiology, the FPS, and related equipment at Wright-Patterson Air Force Base, Ohio, the Navy's School of Aviation Medicine in Pensacola, Fla., and at the Aerospace Crew Equipment Laboratory in Philadelphia.

His assistant, Lieutenant (junior grade) H.D. Brumfield (MSC), has a Bachelor of Arts degree in biology from Park College in Parkville, Mo. He has done graduate work in physiology at Tulane University and research in cardiac physiology at Louisiana State University. LT Brumfield also became a Certified Applied Aviation Physiologist at the Navy's School of Aviation Medicine.

Enlisted technicians who operate the unit are also required to have specialized training and experience. Hospitalmen (aviation physiology technicians) who conduct lectures and supervise physical training and training device men who operate and maintain training equipment also attend the Navy's School of Aviation Medicine in Pensacola. Parachute riggers who fit the suits and adjust various related equipment in the training devices need extensive on-the-job training before tackling the FPS.

In all, safety is the prime factor. Aided by experience in training and practice with the FPS, research and development continue to seek a safer, more comfortable suit.

Throughout FPS training at the Aviation Physiology Unit, all 2000 suits and men were cautiously tested. The highly skilled force behind the training unit insures that during training and operational conditions, the FPS will maintain its livable environment.....safe enough, even for admirals.

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NOTICE

All Flight Surgeons
All Personnel Holding Aeronautical Designators

Two new OPNAV Instructions, setting forth the annual flying requirements for flight surgeons and other aeronautically designated personnel, and prescribing the procedures for reporting annual flight time, have recently been published.

OPNAV Instruction P-3710.7B dated 10 February 1964, Naval Air Training and Operating Procedures Standardization Manual - General Flight and Operating Instructions sets forth the General Instructions on Duty Involving Flying and Annual Readiness/Proficiency Requirements in Supplement 3.

OPNAV Instruction P-3760.8A dated 31 March 1964 sets forth new procedures for the annual reporting of flight time, utilizing a new OPNAV Form 3760-4 (revised 3-64). Paragraph D.2 on page 34 applies to flight surgeons.

All flight surgeons, assigned duty involving flying at any time during the year, are reminded that they must comply with annual minimal flying time requirements in accordance with OPNAVINST P-3710.7B (old 3710.15D) and submit an OPNAV Form 3760-4 at the end of each fiscal year.

This report is required for review by the Flight Status Selection Board which will convene in the Bureau of Naval Personnel. A thorough review of completed form for accuracy prior to signing and prompt submission is mandatory since discrepancies in these areas could result in an unfavorable review by the Board.

The Fear of Flying Syndrome: A Re-Appraisal

LCDR John A. Sours, MC USNR, LCDR Roy E. Ehrlich, MC USNR, and CAPT Philip B. Phillips, MC USN, Aerospace Medicine, Vol. 35, No.2, February 1964.

A re-appraisal of the fear of flying syndrome, as seen in peacetime military aviation, was undertaken to demonstrate that the fear of flying syndrome is a spectrum of psychobiological reactions to flying--symptom-combinations appearing in a variety of psychopathological configurations with different etiologies and markedly varying degrees of morbidity. Psychiatric reactions to flying were first studied in detail during World War II when psychiatrists were assigned to medical support units of operational squadrons. From this wide experience came a finer understanding of gross stress reactions, psychophysiological reactions, and short-term psychotherapeutic techniques. Anxiety reactions with phobic and somatic manifestations were found to be related to stress of military flying. To gain an understanding of these reactions, an attempt was made to relate the mythology and poetry of flight, the written narratives of aviators and clinical data in aviation psychiatry to the constructs of

ego psychology.

Further interest in the fear of flying syndrome emanated from psychiatric experience with military aviators during the Korean conflict. Case studies again revealed the high incidence of psychophysiological symptoms.

Since the Korean conflict there has been only sporadic interest in clinical aviation psychiatry, particularly the fear of flying reactions. This is due to the fact that there then occurred a marked preoccupation with specific research facets of aviation psychiatry; namely, problems in neurophysiology, psychoendocrinology, aviation psychology, and small group psychology that relate to astronautics. This multidisciplinary effort prepared the path for contemporary space exploration but neglected in some respects the psychiatric problems of present-day operational flying.

Summary

In a historical review of the fear of flying syndrome the concept of fear in relation to flying is considered from the standpoint of symptomatology, pathogenesis, psychodynamics and prognosis. For a number of reasons, both theoretical and practical, a re-appraisal of fear of flying is attempted to demonstrate that the fear of flying syndrome is a spectrum of psychobiological reactions to flying; that is, symptom-combinations appearing in a variety of psychopathological configurations with different etiologies and markedly varying degrees of morbidity.

Psychiatric evaluation of 449 aviation patients with psychiatric symptoms and disorders revealed that the overall neuropsychiatric findings could be represented by 16 diagnostic categories. In keeping with our proposed conceptual model of fear of flying reactions, it was further demonstrated that reactions to flying could be descriptively divided into 2 general groups: manifest (overt) and latent (covert) fear of flying reactions.

The most common type of manifest fear of flying reaction was shown to be the acute situational reaction with protean affective, vegetative and psychophysiological manifestations. Occurring usually in the beginner-aviator, the reaction implied both an intellectual and emotional fear of the aircraft--not a phobic representation and symbolic displacement of an intrapsychic conflict. The fear did not derive from longstanding neurotic conflict. Poorly motivated for flying, a pursuit from which they obtained little pleasure, these patients could not deny their natural fear of flying. They were acutely aware of their dread of flying.

A second type of manifest fear of flying was the asthenic psychophysiological reaction, which was seen in obsessional aviators who doggedly continued to fly even though they were aware of their fear of the aircraft, poor motivation and lack of gratification from flying. Another type of manifest reaction was that of the young aviator whose fear of flying expressed neurotic conflict over and above his realistic fear of flying. These patients were similar to those with other types of manifest reactions except that they had come

into aviation for unrealistic reasons, and their past histories revealed neurotic character disorders. Their neurotic anxiety and conflicts intensified and colored the situational distress they experienced in flying and made it more difficult for them to perceive their aeronautical inadaptability and accept permanent grounding. Like the patients with other manifest fear of flying reactions, they became asymptomatic when assigned to ground duties. Manifest fear of flying was also seen as a sequela of the gross stress reaction subsequent to an aircraft accident. It was found that if these aviators were improperly handled, from both administrative and medical standpoints, they developed phobic responses to flying, which was on the basis of sensory conditioning—a newly learned pattern of behavior--and not a reactivation of an earlier neurotic process. And in a few instances aviators with sociopathic traits, unable to tolerate the rigors of flight training, found escape from flying through the manipulation and deception of malingering.

On the other hand, patients displaying latent fear of flying reactions comprised a small group of student aviators as well as designated aviators with over 1,000 hours of flight time. In most instances the aviators were well motivated. They used denial and repression to control both realistic and neurotic fears of flying. Closely identified with flying, they derived unquestionable pleasure from flying. Past histories showed evidence of significant neurotic development. Anxiety in regard to flying insidiously developed and was handled by them in various ways. Invariably they denied any fear or anxiety, as well as change in attitude, in regard to flying.

Acute anxiety attacks associated with flying were the only manifestations of latent fear of flying which expressed a true phobia of flying. Typically, the phobia of flying developed after an acute anxiety attack which had been precipitated by a flying event or an inter-current intrapsychic conflict. The aviator then changed his abstract anxieties into specific phobias which could be avoided. The dynamics of the phobic mechanism in flying are discussed at some length.

Other latent fear of flying reactions involved chronic recurrent airsickness, syncopal reactions in flight and conversion reactions. Patients with airsickness were rigid obsessional individuals who had an overwhelming need to control both their emotions and environment. They were acutely aware of bodily sensations. Those aviators with syncopal reactions in flight were shown to have neurotic conflict in regard to issues of passivity-aggressivity. They were resentful of important interpersonal relationships and were unable to express anger. It was thought that these factors figured strongly in their low G tolerance. Isolated conversion reactions also occurred in the context of latent fear of flying. These patients used body impairment as a means of defending against anxiety. Depth perceptual errors, visual field defects and visual acuity problems were the most common conversion reactions.

The results of short-term psychotherapy of aviators with both manifest and latent fear of flying reactions are presented. It was found that only latent fear of flying patients responded to treatment and could be restored to flying

status. Aviators whose symptoms were based on acute situational reactivity were lacking in motivation for flying. On the other hand, latent fear of flying patients had employed strong defenses against anxiety. Their motivation was excellent, and they were eager to return to flying, from which they obtained a great deal of pleasure. The rationale of and approach to psychotherapy of these patients are discussed, and the criteria for successful treatment are presented.

Psychophysiological False Myopia: A Parasympathetic Depressive Withdrawal Reaction: Its Differentiation from Other Psychogenic Visual Disturbances

LCDR John A. Sours MC USNR and CDR Wayne L. Erdbrink MC USN,
Aerospace Medicine, Vol. 35, No. 1, January 1964.

This paper presents the phenomenology, etiology and psychodynamics of psychophysiological false myopia (ciliary muscle spasm), characterized by the complaint of blurred distance vision and the clinical findings of variable visual acuities with essentially normal cycloplegic refractions. Heretofore, psychogenic visual defects have been generally considered indicative of either hysterical reactions or instances of malingering. With the exception of ophthalmic migraine and retinal arteriolar spasm, psychophysiological visual disturbances have not been well described in the literature. Harrington, however, has referred to false myopia due to ciliary muscle spasm. But no distinct relationship has been established between autonomic vegetative dysfunction, affectivity and ego organization.

The purpose of this study is to characterize further this type of visual impairment, differentiate it clinically from other psychogenic disturbances of vision, elucidate its psychodynamics and suggest the neurophysiological-homeostatic mechanism which underlies the psychobiological reaction.

Method and Materials. The clinical records of designated and student aviators with visual acuity defects, evaluated between 1958-1962 at the U.S. Naval School of Aviation Medicine by the Department of Ophthalmology, and referred, because of negative ocular and inconsistent visual acuity findings, for psychiatric study, were reviewed. On the basis of these criteria, 19 patients were identified and selected for the study. Six cases were rejected because of the complicating presence of other disorders or because of inadequate clinical information. Complete ophthalmologic evaluation, including cycloplegic retinoscopy and refraction, was performed in each case. Psychiatric evaluation consisted of a thorough anamnestic interview, symptom-inventory and mental status examination. Clinical details are presented in tabular form and discussed more fully in the text.

Highly imaginative notions have long been associated with the "eye". Mythology, religion and folklore have established the eye as a richly endowed symbol. One is reminded of the Oedipus myth, Lady Godiva, the Moslem "evil

eye", the punishment of an "eye for an eye" in Exodus XXI and the "plucking out" of the eye. The dynamic themes of punishment, self-punishment, and castration are underscored in the symbolism. Man is vulnerable "in the eyes". Even more so is the aviator, who is conversant with the visual requirements for flying. Failure to meet them is tantamount to renunciation of flying—a loss which is emotionally equated by the aviator as castration and punishment. The symbolism of the eye, as well as the medical emphasis on normal ocular function for flying and the social acceptability of a visual defect for disqualification, explains why emotional conflict in the aviator is often expressed through psychogenic visual disturbances.

If aviators are prone to express affect and conflict through visual symptomatology, why is there such variability in symptom formation and dynamics?

On the physiological level, psychophysiological false myopia is related to ciliary muscle contraction and accommodation with decreased distance vision. It occurs because of parasympathetic overactivity and predominance. Psychologically, the false myope is using an inhibitory-conservatory response to stress. He is conserving energy, protecting himself against a real, threatened, or fantasied loss of an object relation important to his overall homeostasis. He is focusing on object relations at close range, regressing to the near object vision of the infant. He must maintain object relations "within sight" to allay depression and despair. He must save himself from totally giving up. The physiological regression to a primitive homeostasis is related to sadness, emptiness, hopelessness and narcissistic frustration.

In all instances, patients with psychophysiological false myopia were limited in their defenses against threatening affect. Unlike patients with visual conversion reactions, they were unable to repress or mask affect. Instead, they were on the verge of giving up. Neutralization of affect cannot take place on the physiological level. Parasympathetic overactivity, however, has more adaptational value than sympathetic emergency responses that press for overactivity. The aviator with gross anxiety and sympathetic dysfunction was overwhelmed; he could not conserve energy by regressing to depression and withdrawal.

In facing stress, the malingerer did not regress physiologically or psychologically. An emotional loss had not occurred in his life. If it had, it is probable that the loss would not have been felt. In addition, he did not convert anxiety into visual sensory symptoms. Longitudinal histories revealed that the malingerers had previously evaded stress by environmental manipulation and acting-out. Rigid superego demands precluded such deception for the false myope and the hysterical reactor.

From the therapeutic standpoint, recognition of psychophysiological false myopia and its dynamics is important. The false myope, unlike the patient with a visual conversion reaction or the malingerer, is often amenable to brief psychotherapeutic intervention and restoration to flight status. Since his unpleasant affect does not emanate from danger signals in relation to flying, he is more motivated for flying. The false myope must face his unrecognized disturbance in inner psychic economy, the dangers he senses, and the

defensive pattern selected in dealing with a loss of object relation in fact or fantasy. He must come to understand the meaning of his visual symptom. Emphasis in therapy is placed on the patient's intense sense of an anticipated loss. The dynamics of rage and retroflexed anger which are usually superficial and minimal for the false myope, are given a secondary emphasis.

Results of the study indicate that there are essential differences between psychophysiological false myopia and the visual conversion reaction.

(To be continued)

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RESERVE SECTION

American Pharmaceutical Association

The Annual Convention of the American Pharmaceutical Association will be held at the New York Hilton Hotel, New York, during the period 2-7 August 1964. A Military Symposium in conjunction with the meeting will be held on 2, 3, 4, 5, 6, and 7 August 1964. Each session will be at least two hours in duration.

By authority of the Chief of Naval Personnel, one retirement point may be credited to eligible Naval Reserve Medical Service Corps (Pharmacy) officers in attendance. Officers are requested to register with the Commandant's Representative in order that attendance may be recorded and reported.

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ATTENTION: Reserve Nurse Corps Officers on inactive duty

This is an excellent time for you to return to active duty if you are qualified and interested. We have vacancies due to normal attrition and increasing numbers for voluntary retirements. If you hold the rank of Lieutenant Junior Grade or Lieutenant and could complete 20 years of active duty before reaching age 55, you may apply. Application for recall to active duty NavPers 2929 may be obtained at the nearest naval recruiting station.

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How Much Do You Know About the Selected Reserve?

The Naval Reservist, NavPers 15653, April, 1964.

Early in 1958, the Selected Reserve was established. The new concept was designed to provide those forces which would be needed immediately at the outbreak of hostilities involving the United States. Reservists assigned to the Selected Reserve were issued pre-cut orders to active duty. They were expected to report for active duty in a matter of hours without reliance on public transportation. They had to live within commuting distance for weekend drills. Eight years have passed since the new concept was effected. Let's take a look at the Selected Reserve today. There are now five Selected Reserve Components:

1. ASW Component, consisting of 13 destroyers and 27 destroyer escorts manned by reduced nucleus crews and augmented ASW Reserve Crews, and 83 ASW Air Reserve Squadrons.

2. Mine Warfare Component, consisting of 12 minesweepers, manned by 60 officers and 264 enlisted men who make up the "Blue" crews.

These two priority programs account for about seven-and-one-half percent of the Selected Reserve. Reservists drill one weekend a month and serve their ACDUTRA as a team on board their ships, or with their Air Squadrons. Type Commanders assumed the responsibility for maintenance of ASW ships in 1962; maintenance of minecraft is scheduled to be turned over to Atlantic and Pacific Fleet Type Commanders shortly. The missions of the ASW and Mine Warfare Components are to provide ships, squadrons and trained personnel capable of immediate employment.

3. Fleet Augmentation Component, comprising about 77 percent of the Selected Reserve. It provides trained personnel for immediate active duty to raise the manning level of afloat Fleet units to wartime complement. Most Reservists in the Surface portion of this Component drill one night a week; their ACDUTRA is normally performed in the type of ship to which they would be ordered on mobilization.

This Component includes the "Fourth Section" of ASW Reserve Crews, the "Gold Crew" of the Mine Warfare program, and Selected Air Reserve units. It also includes the Surface Program (Surface, Electronics and Fleet divisions), the Hospital Corps, MSTS, and Naval Control of Shipping Organization programs. The Submarine program, in which about 240 officers and 2700 enlisted men take part regularly, is also a part of this Component. Various staffs round out the Fleet Augmentation Component. The other components make up about 15 percent of the Selected Reserve. Within these components are personnel with a great variety of special skills which, in time of mobilization, will be required to meet the manpower needs of Fleet activities and shore establishments. They are:

4. Fleet Support Activities Component, which includes Air Reserve

maintenance units and the Advance Base Command, Amphibious Beach Group, Construction Battalion, Harbor Defense, Ship Activation, Maintenance and Repair, and Ship's Supply Officer programs.

5. Shore Establishment Component, which includes BuWeps units and the Communications, Intelligence, Mobilization Team, Naval Security Group, Recruit Training (Wave), Selected Service, Telecommunications Censorship, and Transportation, Traffic and Terminal Management programs.

(To be continued)

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