

above and back of the turret may be doing, the gunner "steers" his turret as if it were a fighter plane, and when his sights bear on his target he fires.

The turret may be armed with either a single light cannon or with one or more machine guns.

*Science News Letter, March 22, 1941*

GENERAL SCIENCE

## Students To Be Deferred If Rated As "Necessary"

**Memorandum Sent by Gen. Hershey to State Directors Tells How Cases Should Be Handled by Local Boards**

**A** STUDENT training for any occupation essential to the national health, safety or interests may have his selective service deferred provided the local board finds that student to be a "necessary man," Selective Service Deputy Director Lewis B. Hershey told all state directors in a memorandum just sent to them.

This action was taken in response to recommendations by the National Academy of Sciences and the Subcommittee on Military Affairs of the National Committee on Education and Defense made at the request of Dr. C. A. Dykstra, Director of the Selective Service System.

Educators, scientists, and other interested persons have expressed marked

concern about the status of students in professional, scientific, technical, and other highly specialized fields after July 1, when the group deferment of students provided by the Act expires, Gen. Hershey said.

After July 1, there must be no deviation from the statutory prohibition against group deferments, he warned. But any individual student may be deferred if the local board finds him to be a "necessary man."

In making this decision, the local board should consider each individual case on its own merits. In reclassifying students, all facts in the possession of the local board at the time of the student's classification in I-D or I-E should again be given full consideration, together with any evidence of changed status that may have occurred since classification.

Consideration should be given, the memorandum stated, to such factors as the length of time which the student has been pursuing the course in question, his relative progress and standing in the course, and his relative chances for employment. Contracts of employment or other reasonable assurance that the registrant will engage in an essential activity may be considered as evidence by the local board.

"The intelligent selection or deferment of registrants, as the national interest may require, is the fundamental purpose of the Selective Training and Service Act of 1940 and the Regulations prescribed thereunder," Gen. Hershey's memorandum declared.

"It is clearly the duty and responsibility of the local board to determine the classification of each registrant."

Although deferment in Class II-A may not exceed six months, the deferment may be renewed from time to time if the local board finds that such continuance is justified.

Another step to guard against loss to the nation of the services of qualified professional men was taken by Gen. Hershey in another memorandum to state directors in which he stated that professional students who have completed their course of instructions on July 1, 1941, but who will then be in training or preparation for examinations for license in their professional field, may be deferred for a relatively short period pending the holding of the examination.

*Science News Letter, March 22, 1941*



FOR CONTROL

*This is the way the crystal section looks after it is ground and ready for use in controlling the frequency of a transmitting station.*

GENERAL SCIENCE

## Draft Boards Urged to Give Consideration to Students

**D**RAFT boards are urged to give special consideration to deferment of graduate students in scientific, technological and educational schools and students in engineering and health services, in a resolution just passed by the New York Branch of the American Association of Scientific Workers.

After July 1, the group deferment of students expires, and local draft boards must consider the continued deferment of each student individually on its own merits. A student in these nationally important fields is put into the deferred classification if the local board finds him a "necessary man."

The Scientific Workers urge local

boards to take advantage of information that might be furnished by the National Roster of Scientific and Specialized Personnel and to judge the usefulness of such a student by standards provided in a report made at the request of Dr. C. A. Dykstra, director of the Selective Service System, by the National Academy of Sciences and the Subcommittee on Military Affairs of the National Committee on Education and Defense.

According to this report, defense needs clearly require careful consideration of requests for deferment for students in the following fields:

Medicine, dentistry and pharmacy.

Biology, bacteriology and any other branch of biological science which bears directly upon problems of medicine or the public health, safety or interest.

Chemistry.

Physics.

Geology and geophysics, including such specialized fields as meteorology, hydrology and cartography.

Engineering, including civil, electrical, chemical, mechanical, agricultural, sanitary and mining.

"It is generally recognized," the resolution states, "that American democracy depends upon the welfare of its citizens and that this democracy must be safeguarded by an expansion of economic, social, and physical security. These prime requirements of our freedom in turn depend on the full utilization and expansion of our science and technology, our educational system, and our public health services. Our essential resources and services can be maintained only by assuring continuity in the development and utilization of existing personnel and in the adequate training of new personnel.

"However, the conscription, under the Selective Service Act, of the nation's young men for military training, threatens to create a serious dislocation in the country's welfare by disrupting the continuity of their scientific and technical training and service.

"These activities in specialized fields are so rigorous and require such continuous application to keep abreast of current advances that even a year's absence from their pursuit will cause an enormously disproportionate loss in the effectiveness of the training.

"Such loss means lowering the standards of our specialized personnel and will be reflected for many years in its effect upon the educational and public health services and upon the science and technology of our country.

"One of the primary functions of the administration of the Selective Service Act requires that military personnel be developed with a minimum disruption of those spheres of national activity which are of great social value. It is important, therefore, to protect the continuity of the development of professional and technically trained persons."

The New York Branch of the American Association of Scientific Workers requests information regarding the experience of other scientists and organizations in connection with draft problems. The Association's New York Headquarters are at 15 Bank Street.

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#### PSYCHOLOGY

# Even Nurture in the Wild Will Not Destroy Intelligence

## From Study of Story of Kamala, "Wolf Girl" of India, Psychologist Concludes She Was Not Feeble-Minded

**E**VEN if a baby is torn away from mother and all human attention, suckled by a wild wolf and taught to run with the pack and eat carrion she is not made feeble-minded by this experience, Dr. Arnold Gesell, director of Yale University's Clinic of Child Development, concludes from study of the story of Kamala, the "Wolf Girl" of India.

Kamala's dramatic life story of a childhood like Kipling's Mowgli in the den of wolves, followed by rescue and care for nine years in an orphanage has been related by a missionary who was in charge of the orphanage, Rev. J. A. L. Singh. It is soon to be published in this country. The story has been examined by Dr. Gesell, who pronounces it "a notable human document."

In the light of his own knowledge of normal child development, Dr. Gesell has analyzed the story of Kamala for evidence of the effects of life in a wolf den on human intelligence and for the light it may throw on the age-old controversy among scientists as to the relative importance of nature and nurture in making an individual bright or dull, genius or idiot. His interpretations are contained in a book *Wolf Child and Human Child*. (Reviewed, SNL, this issue.)

Although Kamala when she died at the age of 17 seemed to have the mental and social development of a child only three and a half years old, she was definitely not feeble-minded, Dr. Gesell concludes. A feeble-minded person is one who because of defective intelligence cannot learn to live independently in his surroundings.

Kamala, according to the story told by Rev. J. A. L. Singh, made not one satisfactory adjustment, but two or perhaps three.

For a few months, she lived the life of a human infant in the rather primitive surroundings of the Indian peasant.

Then, snatched by a she-wolf, little baby Kamala had to learn a new life. She had to compete with wolf cubs for the milk that meant life to her. She had to learn later to run with the pack,

to hunt at night, to recognize the smells and sounds of danger in the wild. Yet the little human babe did not die. She held her own with the wolves and lived and grew. An imbecile could not have fared so well, Dr. Gesell indicates.

But when she was eight years old, even greater demands were made upon her. Now she was taken from the life of the wild and required to learn to walk upright, wear clothing, use the cups and dishes and plumbing of civilized life in the Midnapore orphanage. Her readjustment was slow and tedious, but it was consistent and progressive. And despite the extraordinary delay in learning to walk and talk and do all the things that human babies learn to do, she learned them in the same sequence as does a normal child.

Parents need not fear, Dr. Gesell concludes from the story of Kamala, that the most poorly conducted orphanage in a civilized community could possibly produce feeble-mindedness. It may depress the intelligence quotient as measured by standard tests, it can deprive a child of his cultural rights, but it cannot inflict feeble-mindedness. The human nervous system is more resistant to adversity than that, Dr. Gesell declares.

Stories of children brought up in the wild have long fired the imagination of scientists as well as the public. But few of them have had scientific authentication. Even in the case of Kamala and a foster sister "wolf child" Amala, rescued at the same time, there was unfortunately no opportunity for psychologists or anthropologists to make any examination of these children or of the circumstances of their early life.

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War is affecting the *orchid* business, causing the United States to receive more tropical American orchids, replacing European plants.

Diet should include some foods for vigorous *chewing*, says a noted nutritionist, explaining that teeth not exercised do not retain a high degree of health.