NIAMD FINDS NEW SYNTHETIC STEROIDS BENEFICIAL IN RHEUMATOID ARTHRITIS

NIAMD clinical tests have shown that two new steroids, called metacortandracin and metacortandralone, are three to four times as potent as cortisol in the treatment of rheumatoid arthritis. The results of the study, which was conducted by Drs. Joseph J. Bunim and Alfred J. Bollet, NIAMD, with the collaboration of Dr. Maurice M. Pechet, NHI, were announced November 4 at the Interim Scientific Sessions of the American Rheumatism Association, held in the Clinical Center Auditorium.

The two new steroids were synthesized and subjected to biological studies in animals by the Schering Corporation of Bloomfield, N. J. The NIAMD investigators tested the substances on seven patients with rheumatoid arthritis over a three-month period, and observed marked improvement in all cases. Several of these patients were previously maintained on cortisone but with unsatisfactory response.

The new substances do not constitute a cure for rheumatoid arthritis. This preliminary trial, however, indicates that they are very effective in suppressing the symptoms that accompany the disease.

Because of the high potency of the new steroids, doses can be reduced, thus eliminating some of the undesirable side effects that can result from cortisone administration. Maintenance doses average between 5 and 25 milligrams for metacortandracin, whereas doses for cortisone range between 25 and 75 milligrams a day. The new drugs have also proved superior in that they do not cause some of the undesirable metabolic changes frequently encountered in cortisone administration, such as sodium and water retention, loss of potassium, and negative nitrogen balance.
Electrical Activity in the Cerebral Cortex

No. 128 in a Series

These "equipotential contour maps" of the cerebral cortex of a cat show the difference between spontaneous activity (left) and activity in response to the sound of a click (right). The time elapse between the two figures is 16/1000 of a second. The block dots correspond to the electrode positions on the brain, while the black lines represent folds in the brain. The separation between the electrodes on the brain is 2 millimeters (1/12 of an inch).

One of the keys to the study of mental health is an understanding of the brain's neurophysiological activity leading to behavior. To this end, the Section on Cortical Integration of NIMH's Laboratory of Neurophysiology is studying the electrical activity in the cerebral cortex of the cat and the monkey, by means of a unique recording device developed by Dr. John C. Lilly, Chief of the Section.

This device consists of an array of 25 electrodes set in a lucite and stainless steel base, which is implanted on the animal's cortex through a hole 3/4 of an inch in diameter drilled in the skull. The electrical signals from the brain pass through a set of 25 preamplifiers and 25 amplifiers, and lead to a lamp array. This consists of 25 glow lamps, each of which shows the signals transmitted by the electrodes by varying their light outputs with the signal amplitudes.

A motion picture camera, moving at the rate of 128 frames per second, is poised over the lamp array and records the changing electrical figures almost as quickly as they occur. By photoelectric measurement of the densities of the lamp images on the film, the recorded signals can be recovered for transformation to other forms of reproduction, such as the contour maps above.

With this device the investigators were able to map the electrical activity in this area of the cortex in response to stimuli and during spontaneous activity. In studies of responsive activity, Dr. Lilly worked with anesthetized cats in a sound-deadenened box. Clicks used to stimulate the auditory cortex were transmitted through an earphone placed in front of the animal. From the mass of data accumulated from this experiment, the investigators found that the response activity produced certain kinds of specific complex figures which travel across the cortex at regular intervals.

In experiments with no obvious external stimuli, spontaneous figures that grow, travel, and die away on the surface of the cortex were produced. In general, these figures are less restricted, less regular, and more fluid in their origins and subsequent behavior than are the responses. From studies with varying levels of anesthesia, it was found that the spontaneous figures decrease in duration and increase in their repetition frequency as the anesthesia is lightened.

The study has now been extended to the recording of electrical impulses formed by the cortex of unanesthetized monkeys during various types of behavior. The investigators are also conducting studies to determine the type of electrical impulses required to elicit a certain movement in the animal. For this study various waveforms are transmitted to the brain through cortical electrodes, and the behavioral and physical effects of the stimulation are studied.

In addition to Dr. Lilly, the Section includes Dr. John Hughes, Mrs. Thelma Galkin, Mr. Bobby Peek, and Mrs. Margie Burch.

Here and There

Beauty Queen

Miss Barbara Lilly, CC nurse, was recently elected "Miss NIH." Barbara will compete with five other contestants from the area for the honor of being Queen of the Bethesda Christmas Parade on December 3.

Holiday

NIH will be closed for business Thursday, Nov. 11, in observance of Veterans' Day.

Civil Defense

The NIH Civil Defense Program is being revised, and questionnaires have been distributed to all employees for the purpose of making an inventory of skills. If you have not yet completed and returned your questionnaire, please do so immediately, and send it to your administrative officer.

NIH has been designated as the primary emergency hospital for casualties in northwest Washington in case of a major disaster, and all employees will be assigned a specific responsibility.

Wanted

Employees who wish to help wrap Christmas presents for CC patients, or who have Christmas tree ornaments to donate, are requested to contact June Mazer, ext. 3121.

Visitors

Ministers of Health and representatives from 35 foreign countries visited NIH Oct. 29. They were greeted by Dr. Sebrell, and learned about research in five areas from senior scientific investigators. The visit was sponsored by the Lederle Laboratories.

Blood Donors

During its recent visit, the Red Cross Bloodmobile received 98 bottles of blood from NIH employees.

N. I. H. RECORD

Published by
Scientific Reports Branch
National Institutes of Health
Room 116, Building 1
Bethesda, Maryland
OLiver 6-4000 Ext. 2125
Development of the technique of tissue cultures has revolutionized the study of virus infections.

Dr. Enders has been Associate Professor of Bacteriology and Immunology at Harvard Medical School, Cambridge, Mass., since 1942. He is a member of the Society of American Bacteriologists, the American Association of Immunologists, and the American Public Health Association. Born in West Hartford, Conn., Dr. Enders received his M.A., and Ph.D. degrees from Harvard University.

NIH Spotlight

Byrda Norris

Hillbilly music fans are certain to recognize an ex-singer now working in the Personnel Branch--tall, attractive Byrda Norris.

Billed as the Darnell Sisters, Byrda and her sister, Pat, appeared on several local radio and television programs until a few years ago. Gay Time, a three-hour hillbilly show m.c.'d by Connie B. Gay and originating in Constitution Hall, featured Byrda and her sister. They also conducted their own weekly radio program on station WGAY, and sang on a weekly program for station WTTG. Their brother, Charles, who Byrda claims "plays a mean guitar," accompanied them.

As Appointment Unit Supervisor in the PB, Byrda is responsible for maintaining personnel records and final processing of all personnel actions. In this section, new employees complete the necessary forms and take their oaths of office, and controls are kept for longevity and periodic step increases, leave category changes, etc.

Byrda has been working in this unit since joining NIH 10 years ago as a typist. She had planned to work only until her husband returned from Army duty overseas, but having become accustomed to the working routine, and liking it, she decided to continue.

Born in Marion, Va., Byrda has five sisters and two brothers. When she was 13, the family moved to a dairy farm at Travillah, where Byrda learned the art of milking cows. This she insisted was "very hard work" and, fortunately, didn't last long, for her family moved to Rockville. During childhood Byrda and her sister began singing together at family gatherings. Everyone learned to play a musical instrument "except me" says Byrda, so that the family comprised an entire orchestra. The family still gets together for an evening of music when her brother, Glenn, comes up from Roanoke, Va., and brings his fiddle.

In 1941, Byrda and Pat were invited to entertain at a convention in Roanoke, where they had their first experience singing with an orchestra. At that time, they sang popular music, and only turned "hillbilly" for Connie B. Gay's program in 1948.

Rehearsals are now in full swing for the forthcoming Hamster production of "Oklahoma!" which will now be given December 1, 2, and 3, instead of the two nights previously planned. Sue Oliver, Director of the production, reports that there is still a need for singers for the chorus (male voices are in great demand), and several of the major understudy parts have not been filled. If you are interested, contact her on ext. 3465.

Jeanne Walton announced at the recent executive council meeting that 81 new members joined the Association last month, bringing the grand total up to 1,876 thus far this year.

Bob Campbell, Concessions Chairman, reminds us that we can help keep down the price of Cokes if we return the empty bottles to the racks provided by each machine. The R & W activities schedule continues to grow. Among the new activities are the Beginners' Dance Class, the Choral Group, the Textile Painting Class, and the Fencing Class. Basketball and the Horseback Riding Club are scheduled to start this month.

and her sister began singing together at family gatherings. Everyone learned to play a musical instrument "except me" says Byrda, so that the family comprised an entire orchestra. The family still gets together for an evening of music when her brother, Glenn, comes up from Roanoke, Va., and brings his fiddle.

In 1941, Byrda and Pat were invited to entertain at a convention in Roanoke, where they had their first experience singing with an orchestra. At that time, they sang popular music, and only turned "hillbilly" for Connie B. Gay's program in 1948.

She and her husband, Thomas, a sheet metal worker for a Bethesda firm, and their two sons, Tommy, Jr., 10, and Greg, 7, recently moved into their new home on Route 2, Rockville. Byrda likes to spend her evenings bowling, which she has been doing weekly for the last five years, and attending the last week. For her, "the television hasn't taken the place of movies" and she sees as many as she can, sometimes two a week.
SCHOOL IS PROVIDED FOR CC PATIENTS

Mrs. Alice Littleton supervises children working in various media of self-expression.

During the observance of National Education Week, November 8 to 13, the Children's School Program in the Clinical Center will mark completion of its first year of service. Since its inception, approximately 50 young patients have participated in the program, which is probably the only educational service of its kind in the country.

Developed in cooperation with the Montgomery County Board of Education, the program is designed to meet the scholastic needs of the patient as indicated by his physician and parents. The service is headed by Mrs. Alice Littleton, and the staff includes specially trained tutors assigned by the County. A Clinical Center Educational Advisory Committee, composed of physicians, social workers, psychologists, and other consultants, evaluates the program and makes recommendations on matters of policy in the supervision and administration of the service.

The school is run on a "prescription" basis—that is, it must be requested by the patient's physician. Following the request, Mrs. Littleton confers with the doctor and interviews the prospective student to diagnose his educational requirements. If necessary, she also confers with the parents and the school which the patient last attended. A scholastic program is then worked out and submitted to the physician for final approval. For the first few days after the schooling starts, Mrs. Littleton works with the patient, and then the program is turned over to a staff tutor.

The pupils are assigned to small classroom groups according to their academic standing and their emotional and physical condition. At present, there are instruction areas located throughout the Clinical Center to help meet these needs. If the patient is physically unable to attend the classroom sessions, he receives individual tutoring at his bedside.

Under the program, patients are able to receive year-round instruction in a wide variety of courses covering work in grades one through twelve. In the elementary grades, the students are taught all the language arts, the social sciences, arithmetic, and special subjects as needed. Secondary school pupils receive instruction in such subjects as English, Latin, French, general mathematics, algebra, history, geography, civics, and other subjects, such as the commercial arts.

Special emphasis is placed on the students' self expression in various art media and in creative writing. The group plans to make extensive use of audiovisual teaching techniques, using movies, slides, and recordings to supplement classroom instruction.