NOTES AND NEWS

COMPUTER TRANSLATION TO GRADE II BRAILLE

The transcription of ordinary English texts to Standard English Braille, Grade II, once the sole province of a battery of human braille transcribers, professional and volunteer throughout the country, is now also being accomplished successfully by computer. As stated in a report from The American Printing House for the Blind (APH), in May 1964 a Type 709 computer with associated braille translation programs was donated by International Business Machines Corporation to the APH at Louisville, Kentucky. In the first two years of operation 155 titles (370 volumes in braille) were translated by computer. Punched cards produced by operators not knowing braille and working from the English text form the input to the computer. The output is a second set of punched cards with the text encoded in braille. The translation process is done by the computer at the rate of nine pages per minute. The braille encoded cards are then used to operate the special card-to-plate equipment developed by IBM and APH. An operator can make 240 plates a day from which the finished copies of braille pages can be embossed. Records indicate that the new system as installed at APH is efficient from a cost standpoint.

ENGINEERING IN BIOLOGY AND MEDICINE

The 20th summer conference conducted by Oak Ridge Associated Universities was presented August 28–30, 1966, in cooperation with Oak Ridge National Laboratory, the American Society for Engineering Education, the American Institute of Biological Sciences, and the Division of Nuclear Education and Training, U.S. Atomic Energy Commission.

The purpose of the conference was to provide university and college faculty members with a clearer understanding of the rapidly expanding interdisciplinary area known as "bioengineering."

In addition, the conference was designed to achieve a better understanding of bioengineering as exemplified by certain specific activities in a multipurpose national laboratory and by other AEC-supported activities in Oak Ridge. One of its goals is to encourage faculty members to incorporate concepts of bioengineering and its relationship to nuclear science and engineering into their teaching and research.

Participants were mainly faculty members from engineering colleges, including conventional groups such as mechanical, electrical, chemical, nuclear, aeronautical, space, and other engineering departments.

Dr. Eugene F. Murphy of the VA's Prosthetic and Sensory Aids Service, Veterans Administration, spoke on "Structures" and gave a brief review of the rapid progress being made in bringing to bear an engineering knowledge of structures and materials on properties of living tissues and systems.

The conference was attended also by persons from colleges of arts and sciences represented by physical, biological, and medical sciences departments; interdisciplinary areas of activity including bioengineering; and departmental or interdepartmental committees concerned with space sciences.

SPEECH COMPRESSION WORKSHOP CONFERENCE AT U. OF LOUISVILLE

A "Conference on Compressed Speech" sponsored by the Library of Congress and the University of Louisville was held at the University of Louisville, Louisville, Ky., October 19–21, 1966. Dr. Emerson Foulke, a blind member of the Psychology Department, was the local "host," and Mr. Robert S. Bray, Chief, Division for the Blind and Physically Handicapped, Library of Congress, Washington, D.C. 20540 was general chairman.

Accelerated or compressed speech is speech in which the spoken word rate is stepped-up by mechanical and/or electronic means without the accompanying rise in pitch associated with speeding-up a tape or phonograph record which produces old-fashioned Donald Duck-like speech.

Discussion covered the use of computers as a means of producing compressed speech, more research on the entire subject of compressed speech, the use of telephone lines in producing information systems for the blind, etc.

On the second day, the Conference was broken down into workshop study groups, each arranged to discuss a particular topic. The deliberations of each of the workshop groups were recorded on one of the Library of Congress' new cassette machines which may replace Talking Books.

On the last day of the conference, references were made to many subjects. A clearing house for information, a glossary of terms, a speakers bureau, publicity, etc. were among the topics discussed. The need for standards and more research and holding an instructional seminar were also mentioned.

INTERNATIONAL PROSTHETICS COURSE HELD IN AFRICA

From March 31 to April 9, 1966, an international prosthetics course was held in Abidjan, Ivory Coast Republic, under the sponsorship of the World Veterans Federation with support from the Governments of France

and the Ivory Coast. Assisting in either sponsoring lecturers or in arrangements were the International Committee on Prosthetics and Orthotics of the International Society for Rehabilitation of the Disabled; medical or prosthetic centers in the United Kingdom, Denmark, and Belgium; and the World Rehabilitation Fund.

Mr. Alvin Muilenburg, CPO, President of the Muilenburg Artificial Limb Company, Houston, Texas, and a member of the North American Subcommittee of the International Committee on Prosthetics and Orthotics was the sole lecturer from the United States. Other lecturers were Mr. Maurice Morlet from Belgium; Dr. Jorgen Kjolbye from Denmark; Medicin-General C. Abadie, Dr. J. Hindermeyer, Mr. Roger Olitraut, and Mr. Jacques Charpentier from France; and Dr. M. Vitali and Mr. F. James from the United Kingdom.

The thirty student participants included physicians, therapists, and technicians from the Central African Republic, Chad, Dahomey, Ethiopia, Ghana, Liberia, Malagasy Republic, Morocca, Niger, Nigeria, Senegal, Sierra Leone, Upper Volta, and Ivory Coast.

During the course, the lecturers became acutely aware of the nature of the African problem, one based primarily on a lack of prosthetics hardware. Moreover, due to the general social and economic situation on that continent, rehabilitation problems, have been of secondary concern to the Governments. The lecturers also noted the limiting effects of tribal traditions on attitudes towards disability.

The course was made quite general since detailed descriptions of technical procedures currently performed in the more advanced countries would not be appropriate for Africa at this time. Very simple techniques which accommodate the fundamental prosthetics principles and simplified designs of prostheses which would be appropriate for rural Africa were offered. Designs of pylons provided by Mr. Olitraut, Mr. Charpentier, and Mr. Morlet and a simple technique for casting stumps offered by Dr. Vitali were shown in an effort to teach the fundamental principles and possibly offer ideas about the design of simplified apparatus.

The Abidjan course, because of its brevity, reportedly could not be a complete success as an instructional effort. It did, however, prove extremely valuable as a first step in contributing to the development of prosthetics and orthotics capability in Africa. Representatives from Western Europe and America became more directly aware of the problems. Certainly, lecturers at future prosthetics courses on this continent will benefit by what was learned at this course.

In the future, an indoctrination of the lecturers on local needs and attitudes before undertaking a teaching program seems indicated. Nevertheless the Abidjan lecturers were able to stimulate interest on the part of African professionals who now can take steps to help solve some of

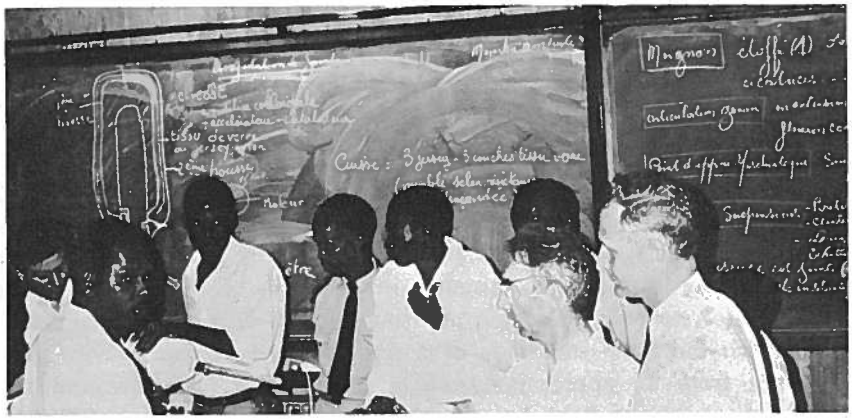

FIGURE 1. — Student practice session at the Abidjan course. On the right are two of the lecturers: Mr. Maurice Morlet of Belgium (left) and Mr. Alvin Muilenburg of the U.S.A. (right).

the problems. All were certainly apprised of the beneficial product of a prosthetics and orthotics capability.

Most of all, the International Committee has had its first experience in Africa. On the basis of what has been learned from Abidjan, future courses can be undertaken in an attempt to achieve even more fruitful results.

READING MACHINES DEMONSTRATED AT OPHTHALMOLOGICAL WORKSHOP

Demonstrations of the Visotoner, Colineator, and Visotactor reading devices developed by Mauch Laboratories, Inc., of Dayton, Ohio, took place at the Public Affairs Workshop of the American Association of Ophthalmology on October 15, 1966, Chicago, Illinois.

Dr. Eugene F. Murphy of the Prosthetic and Sensory Aids Service described the program on reading machines for the blind which is supported by the Veterans Administration. He demonstrated the Visotactor to the Workshop, and Harvey Lauer of Hines VA Hospital demonstrated the Visotoner and Colineator. Real interest was displayed by the ophthalmologists as they gathered about the demonstrators.

COMMISSION ON ACCREDITATION OF REHABILITATION FACILITIES

The Commission on Accreditation of Rehabilitation Facilities, which was established in July 1966, represents the culmination of seven years of intensive effort by The Association of Rehabilitation Centers (ARC) and the National Association of Sheltered Workshops and Homebound Programs (NASWHP) to develop improved national standards for the oper-

ation of rehabilitation facilities. The program of the Commission is intended: 1. to promote and assist in the self-improvement of rehabilitation facilities through the provision of educational and advisory services with respect to standards, 2. to adopt and apply the initial standards approved by the ARC and NASWHP in measuring and evaluating rehabilitation facilities for accreditation with respect to organization, types and quality of services, personnel, records and reports, fiscal management, physical plant, the efficiency of industrial activities when provided, and such other factors as may be deemed consistent with the goals of the facilities to be accredited, 3. to issue certificates and publish lists of rehabilitation facilities which meet the standards of accreditation, 4. to seek advice and guidance from all appropriate sources in regularly reviewing and re-evaluating standards, 5. to promote and carry out studies for the purpose of expanding and elevating the initial standards in keeping with changing concepts and professional knowledge and skills, and 6. to cooperate with other organizations having similar or allied objectives and take into membership such other organizations upon terms and conditions as may be mutually desirable.

The Commission on Accreditation of Rehabilitation Facilities has three more leaders in rehabilitation to act as at-large trustees, and the organization has now elected its first permanent officers.

Selected to complete the group of nine trustees who will be charged with advancing and applying standards in the operation of rehabilitation facilities were:

William Erdman II, M.D.
Professor and Chairman
Department of Physical Medicine and Rehabilitation
Medical College of the University of Pennsylvania

Dorothy Cantrell Perkins, Ed.D.
Director, Rehabilitation Training Center in Mental Retardation
California State College at Los Angeles

Leo Perlis
Director, Community Service Activities
AFL–CIO
Washington, D.C.

Dr. Erdman, Dr. Perkins, and Mr. Perlis were selected to complete the board at a meeting in September by the six trustees previously chosen by the two convening organizations, the ARC and the NASWHP.

Other trustees are:

E. J. Desjardins, Manager
G. F. Strong Rehabilitation Centre
Vancouver, B.C., Canada

Howard G. Lytle, L.H.D., Executive Secretary
Indianapolis Goodwill Industries, Inc.
Indianapolis, Indiana

Jack C. Haldeman, M.D., President
Hospital Review and Planning Council of Southern New York
New York City

J. Arthur Johnson, Executive Director
Columbia Lighthouse for the Blind
Washington, D.C.

Gerald H. Fisher, Ed.D., Administrator
Hot Springs Rehabilitation Center
Hot Springs, Arkansas

Michael M. Galazan, Executive Director
Jewish Vocational Service
Milwaukee, Wisconsin

Officers chosen by the group at its first full meeting were Howard G. Lytle, Chairman; E. J. Desjardins, Vice-Chairman; and Dorothy Cantrell Perkins, Secretary-Treasurer. Officers will be elected annually.

The program is to be voluntary in nature and no profit will be permitted to accrue to either founding organization or the trustees. It is expected that the Commission will begin its survey and accreditation program early in 1967.

COMMENDATION FOR ANTHONY STAROS

We are pleased to announce that Mr. Anthony Staros, Director, VA Prosthetics Center, recently received a commendation from the Administrator of Veterans Affairs. The commendation read as follows:

> "This certificate is awarded to Anthony Staros in recognition of his outstanding contributions to research, development and education in the field of prosthetics. Through dedicated service, he has improved the lot of severely disabled people in this country and abroad. His achievements have earned him an international reputation, reflected great credit on the Veterans Administration, and led to his nomination for the National Civil Service League Career Service Award."

GOLD KEY AWARD FOR DR. ERDMAN

We are pleased to note that Dr. William J. Erdman, II, of Philadelphia, received the 1966 Gold Key Award from the American Congress of Physical Medicine and Rehabilitation. The award was made for his significant contributions to the field of physical medicine and rehabilitation and in particular for his fine leadership as president of this organization

for the year 1964–1965, which was distinguished by excellent judgment, by dignity, and by fairness.

Dr. Erdman is a member of the Committee on Prosthetic-Orthotic Education and a member of the editorial board of the journal, Artificial Limbs.

NEW POST FOR DONALD V. WILSON

The appointment of Donald V. Wilson as president of the Leonard Wood Memorial for the Eradication of Leprosy was announced by retiring President Cyril I. Crowther. Mr. Wilson assumes his new position on January 1, 1967.

Mr. Wilson has served as Secretary General of the International Society for Rehabilitation of the Disabled for the past seventeen years. In his new position he will direct an expanding worldwide program devoted to the elimination of leprosy, which today claims more than 15 million victims throughout the world.

The announcement was made at a meeting of the Memorial Board of Trustees. The Memorial was founded in 1928 to honor Major General Leonard Wood, then serving as Governor General of the Philippines. Educated as a physician, General Wood was one of the first American public figures to commit himself to helping leprosy victims. The Memorial has played a major role in the development of scientific studies which form the base for today's attack on leprosy. The primary source of the Memorial's funds are voluntary contributions from the American public. In recent years grants have been received from the U.S. Public Health Service and the World Health Organization. Currently, research projects are maintained at Cebu, the Philippines; at Johns Hopkins University, Baltimore, Maryland; at the Armed Forces Institute of Pathology, Washington, D.C.; and at the Delta Regional Primate Center, Covington, Louisiana.

When Mr. Wilson became Secretary General in 1949, the International Society had member organizations in twelve countries. Membership today includes 108 organizations in 63 countries. During his term as Secretary General, world rehabilitation congresses were held in Stockholm, The Hague, London, New York, and Copenhagen. Last September, the Tenth World Congress was held in Wiesbaden, Germany.

During this same period, twelve international committees and commissions were established to deal with various disabilities, including cerebral palsy, arthritis and leprosy. Since 1960, the International Society's World Committee on Leprosy Rehabilitation has activated worldwide rehabilitation programs for leprosy victims. Mr. Wilson is a sponsor of "World Day for Leprosy Sufferers," an annual informational worldwide campaign to increase public understanding of and interest in the elimination of leprosy.

Mr. Wilson has served as an officer of the International Federation of Social Workers; a member of the Executive Committee of the International Conference of Social Work; a member of the National Board of Directors of Goodwill Industries of America; chairman and secretary of the Conference of World Organizations Interested in the Handicapped (CWOIH), a coordinating body of voluntary international agencies working with the United Nations in developing services for the disabled; and as a member of the World Advisory Committee on Scouting with the Handicapped, Boy Scouts World Bureau.

He has represented the International Society with the United Nations, the World Health Organization, United Nations Children Fund, and other international organizations. He came to the Society from Western Reserve University, where he was Dean, School of Applied Social Sciences.

During World War II, Mr. Wilson served as an Army military government officer. In both military and civilian capacities he administered social welfare activities during the occupation of Japan and was cited by General Douglas MacArthur "for outstanding performance of duties and exceptional judgment and leadership."

Prior to World War II he served on the staff of the Louisiana Department of Public Welfare and on the faculty of Louisiana State University Graduate School of Social Welfare. A graduate of Muskingum College, Mr. Wilson holds an LL.B. degree from the School of Law, Western Reserve University, an M.A. degree from the School of Social Service Administration, University of Chicago, and an honorary Doctor of Laws from Muskingum College.

In recognition of his contribution to rehabilitation, Mr. Wilson has received the Goodwill Industries of America Award, the Citation for Meritorious Service from the President's Committee on Employment of the Handicapped, and the Rome International Prize for Rehabilitation of the Handicapped. The Rome citation was for "accomplishments in the service of the physically handicapped of the entire world" and for efforts to "establish practical collaboration between the organizations of the handicapped and the International Society."

"For outstanding service rendered to the cause of mutual understanding and friendship between the United States and Greece," Mr. Wilson in 1963 was named Commander of the Royal Order of Phoenix by the late King Paul of Greece.

Mr. Wilson, married and the father of two daughters, lives with his family in Hastings-on-Hudson, New York.

SEMINAR ON AIDS TO HUMAN MOTION

The U.S. Army Tank-Automotive Center (ATAC) held a seminar in Warren, Michigan, October 12–13, 1966 on "Aids to Human Motion."

The purpose of the seminar was to bring together representatives of various government agencies who are interested in the development of devices that either mimic, replace, or simplify the use or functions of human limbs. The seminar covered the mechanical design and control aspects of various devices. The devices included were: walking machines, human amplification devices, materials handling equipment, and prosthetic devices. Dr. Eugene F. Murphy of the Research and Development Division of the Prosthetic and Sensory Aids Service represented the Veterans Administration's interest in this area and spoke on the subject "Prosthetic Studies by the Veterans Administration."

The seminar was created in the hope that discussions of the problems peculiar to each agency and the proposed solutions may produce a significant amount of information of value to the participants in solving their individual problems.

DEAN L. M. K. BOELTER

The prosthetics research program, in common with many areas of engineering and civic life, lost a valuable participant and wise counsellor in the death on July 27, 1966, of L. M. K. Boelter, dean emeritus of the University of California at Los Angeles College of Engineering.

A graduate of the University of California, he joined its engineering faculty at Berkeley in 1919. He was a versatile scholar, a prodigious worker, and an inspiring teacher.

For many years his major interest was in heat transfer, a problem common to mechanical, chemical, and agricultural engineering. An indication of the permanence of his influence is the recent reissue as a book of the voluminous syllabus for a course in heat transfer which he and a group of younger colleagues prepared in 1940.

His studies of only one mode of heat transfer, radiant energy, eventually included not only conventional engineering problems and his course on illuminating engineering but served as a common denominator in operations of a laboratory on automobile headlights, studies of the wartime "dimout" of headlights and streetlights in coastal California, and research on heat transfer balances between growing oranges, the leaves of the trees, and the sun by day or the clear sky at night. He demonstrated the futility of the older "smudge pots" in prolonged cold spells and the value of infrared radiation from the stacks of improved orchard heaters. An enthusiatic gardener himself, he enjoyed his additional appointments in agricultural engineering (Davis) at Citrus Experimental Station (Riverside).

In a ten-minute conversation in the Faculty Club at Berkeley, in 1942, he changed my career profoundly, just as his advice influenced many others. I had just been assigned to teach analytical mechanics; he sug-

gested that I use some examples of forces and motions of the human body as well as the conventional engineering problems. He recommended several sources of literature. (At that time, Dr. Charles M. Gratz, George Stetson, the editor of Mechanical Engineering magazine, and others had not yet succeeded in popularizing the term "biomechanics," and technical analyses of body motions were scarce.) I then continued to use examples from industry, sports, and everyday activities to illustrate leverage, conservation of momentum, and the effectiveness of free body diagrams in analyzing complex situations such as ice skating stunts as well as conventional derricks or bridges. Most of the students seemed to like the biomechanical approach to problems which, when analyzed, surprisingly resembled the text book, though someone, on the anonymous questionnaire at the end of each year, always protested he came to study engineering, not ice skating or high diving! This classroom interest in biomechanics led eventually to cooperation with Prof. H. D. Eberhart in attempts to measure stresses in artificial legs and then to our involvement in the Artificial Limb Program soon after it was organized in 1945.

In a presentation at the American Society of Mechanical Engineers in November 1945 on "Problems in the Design of Prosthetic Devices," I suggested that motion study engineers might contribute studies of motions of the hand and arm to allow better design of upper-extremity prostheses. In the following months we discussed the possibilities with a number of experts who were interested but usually unavailable for a variety of reasons. Dean Boelter, though, who by then was building up a new College of Engineering at UCLA, was not only strongly sympathetic but able to start a project with Prof. Adrian Keller, an expert on photography useful in motion study, and Prof. Craig Taylor, a physiologist whom Dean Boelter had recruited for dual appointment in physiology and engineering. The UCLA project not only led to design criteria for artificial hands and arms but also led to a case study on numerous amputees, the refinement of the prescription concept, and the first university-level prosthetics school.

It was characteristic of Dean Boelter's imagination, breadth of vision, and recognition of possible public service that he was willing to have his College of Engineering operate a school primarily for medical doctors, therapists, and prosthetists. He sometimes spoke at the graduation dinners about the effectiveness of these schools in rapidly changing a whole segment of medicine and technology, and thus expediting proven research results from the laboratories to practical clinical usefulness on thousands of patients. He also hoped that somewhat similar interdisciplinary schools might be developed to train, for example, managers, engineers, draftsmen, and shop men to function as teams in the numerous other areas where new discoveries were potentially available to help mankind.

At the two Conferences on Engineering and Medicine sponsored by the Engineering Foundation in Andover, New Hampshire, in 1963 and 1964, we had the benefit of Dean Boelter's thoughtful counsel, foresight, ethical standards, and broad learning. As but one example of his contributions, he discussed the responsibilities of the engineering profession in many aspects of automobile safety, considerably before the current publicity. (With his usual pioneering spirit, he had been the Testing Agent for the California Department of Motor Vehicles from 1919 until he went to UCLA in 1944.) His comments included not only specific problems of vehicle design in relation to crash injury but also air pollution, economic considerations, highway design, mass transit, and city planning.

In spite of his broad interests, he probed deeply in each area. He held a diversity of posts with distinction; his ideas on city planning, for example, reflected his service as president of the Los Angeles City Planning Commission. In 1947 (as a *chemical* engineer!) he was appointed a charter member to help organize the California Board of Registration for Civil and Professional Engineers, and he was reappointed until 1960. He was also a member of numerous committees on topics ranging from education to fire research.

Recipient of honorary doctorates and of important medals and awards, given the grades of Fellow or Honorary Member in national societies, and recipient of stirring tributes by his colleagues in heat transfer and by the University on the occasion of his retirement, he remained a modest, diffident, and charming personality.

Many of Dean Boelter's ideas were, and still remain, controversial. Certainly some, though, have proved to have been merely ahead of their time.

EUGENE F. MURPHY