The Science Section of Biarritz American University

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BIARRITZ AMERICAN UNIVERSITY and its slightly older sister at Shrivenham, England, are experiments in education under Army auspices that deserve to be described for American educators.

Organization of the University

The organization of Biarritz American University is in many ways different from that of the usual university in the States. There are two reasons for the differences: Not only is this installation responsible for all housekeeping and service functions, as well as for the usual academic ones, but it also has the dual organization of the military and the civilian academic line-and-staff structures.

The Commandant, Brig. Gen. S. L. McCroskey, assisted by an executive, an assistant executive, an aide, and an office staff, has complete responsibility for BAU and, consequently, final authority. Attached to his office is a Visitors' Bureau. The chain of command separates from the Commandant to the directors of six divisions. Under the *Director of Administration* are the staffs and functions of Post Administration, Academic Administration, Finance, Military Personnel, and Civilian Personnel. Under the *Troop Commander and Headquarters Commandant* are numerous responsibilities and functions. The Headquarters Student Brigade has control of the five battalions into which the 4,000 students are organized. The Station Complement includes six companies which must supervise or carry out guard, labor, supply, utility, billeting, special service, military police, motor transportation, and other duties. Also under Headquarters are the Hospital, the Fire Marshal, and the Billeting and Mess Sections. The *Director of Supply* is in charge of the sections of Post Supply, Academic Supply, and Transportation Movements. The *Director of Special Services* has charge of Athletics, Recreations, Post Exchange, Special Supply, and Band sections. The *Special Staff* is not headed by a Director, each of its chief officers having direct access to the Commandant. The offices of the Special Staff are those of Public Relations, Surgeon, Chaplain, Staff Judge Advocate, French Liaison, Supervisor of Women, Historian, and the Academic Adviser. Under the *Director of Academics* are eight academic sections which correspond to colleges and the overall functions of Visual Aids, Library, Book Shop, and Counseling Section.

The task of fitting an installation of this size and complexity into the pre-existing buildings of a resort city has been a difficult one which the Army has in general accomplished with great speed and efficiency. In addition to garages, storage houses, department stores, casinos, and sundry other buildings, it has been necessary to requisition about 85 large and small hotels for student billets, about 65 villas for staff and faculty billets, and enough other space in hotels, villas, etc. for about 100 classrooms and laboratories and some 60 offices. There is also space for a library seating about 400 persons, a theater, a music hall, recreation halls, a gymnasium, clubs, etc. In order to provide other necessary services there are two dispensaries, a field hospital, sales stores, a shoe shop, cleaning and laundry shops, a bicycle shop (with about 700 bicycles), and numerous other aids to efficient and comfortable living. The total personnel of the installation, in addition to 4,000 students and about 275 faculty members, includes the station complement, several British Civilian Volunteer secretaries, numerous French civilian secretaries, clerks, waiters and cooks, and a labor battalion of German prisoners of war. In a school community at home the university organization does not include all persons serving the student body in any way, as it must in an independent installation in a foreign country.

Personnel

The *Academic Division* is headed by a director, Col. E. B. Thompson, whose role is similar to that of the executive vice-president or dean of the university in some schools in the States, and who is directly responsible to Gen. McCroskey. John Dale Russell, who is academic adviser on the Special Staff and has direct access to the Commandant, is usually referred to as "Dean" and is chiefly responsible for academic policies, working in close cooperation with Col. Thompson. Dean Russell's executive officer is Lt. Col. Frances H. Horn, and Col. Thompson's staff (with Lt. Col. F. C. Macomber as executive officer for the first term) consists of Maj. L. C. Pettit, Capt. W. A. Poirier, and Lt. R. W. Richey. Under the "two-headed" system which in this case works very well, the Academic Division is divided into eight sections and a total of nearly 40 branches which correspond to departments in the usual American civilian organization.

The Science Section of Biarritz American University had, at the close of the first term, a total strength of 70 persons; the Science Section chief, 5 branch heads, 45 instructors, 12 assistant instructors, and 7 secretaries who are British Civilian Volunteers. The

personnel of the Section, exclusive of secretarial help, is as follows:

Section office: Stanley A. Cain, chief; *Biology Branch*; Thomas H. Bissonnette, head; Benjamin R. Coonfield, Capt. Cyril J. Corum, Earl A. Dennis, Capt. Alvin R. Grove, Jr., Charles E. Hadley, Walter N. Hess, and Maj. Lincoln C. Pettit, instructors; T/3 Wendell T. Blight, Pfc. Wilbur L. Bullock, Pfc. Ernest Johnson, Cpl. James O. Maher, and Pfc. Marvin C. Martin, assistant instructors; *Chemistry Branch*: Andrew J. Scarlett, head; Maj. Perley D. Baker, Gladstone B. Heisig, Matthew L. Holt, Martin Meyer, Lt. Col. A. G. Siverson, and Lee F. Supple, instructors; M/Sgt. Nevis E. Cook and T/4 David R. Gross, assistant instructors; *Geology Branch*: Jesse J. Galloway, head; Armand J. Eardley and 1st Lt. Gerald M. Stafford, instructors; T/3 Max G. White, assistant instructor; *Mathematics Branch*: Joshua I. Tracey, head; T/Sgt. Elwood F. Arndt, Frank Ayres, Jr., Frederick R. Bamforth, Isaac A. Barnett, Lt. Col. Alonzo C. Cohen, Jr., Pfc. Samuel D. Conte, T/5 Jack C. Gibson, Lester S. Hill, Capt. Andrew O. Lindstrum, Jr., Raymond B. McClenon, Edward R. C. Miles, John H. Neelley, Alfred L. Nelson, 1st Lt. Stephen Oselinsky, Cecil G. Phipps, Joseph C. Polley, Bernhard P. Reinsch, Capt. Walter T. Scott, Charles R. Sherer, Gabor Szego, 1st Lt. Harold E. Temmer, Herbert S. Thurston, Lt. Col. Adlai S. Turner, and Roy M. Winger, instructors; *Physics Branch*: Paul R. Gleason, head; Maj. William M. Barrows, Jr., G. Harvey Cameron, Maj. Sherman W. Eager, Ralph B. Kennard, Wendell H. Kinsey, and Jefferson S. Meares, instructors; Pfc. John S. Winston, assistant instructor.

One question that arises in connection with a temporary institution such as Biarritz American University is that concerning the quality of the instructional staff. The only good answer to such a question arises from a familiarity with performance under a given set of conditions, but certain statistics are suggestive. Leaving out of consideration the 11 assistant instructors who are all military men, comparatively young, and assigned by the Army to BAU for duty, there are 51 "professors" in the Science Section, of whom 34 are civilians and 17 are Army officers and enlisted men. Thirty-nine of the science staff have the doctoral degree and, of the 12 who do not, 8 are military men who for the most part had their graduate study interrupted by the war.

The University of Chicago leads the list of institutions from which the Ph. D. was obtained, with four each in biology and mathematics and one in physics. Harvard, Yale, Cornell, Columbia, and Wisconsin are each represented on the science faculty by three of their Ph. D. graduates. Represented by two Ph. D. graduates each are Princeton, Indiana, Johns Hopkins, Illinois, and Rice Institute, and by one each, Michigan, Minnesota, Ohio State, California Institute of Technology, and the University of Vienna.

The 34 civilians were recruited for service at BAU directly from academic institutions in the States. Eleven of the military men are also on leaves of absence from similar institutions, and only 6 of the younger men are without school connections at home. The 51 professors of the BAU Science Section held various academic ranks in 42 different institutions before entering Army service. Two-thirds of them hold the rank of professor at their parent schools, one-half of these being also department heads. Schools represented on the BAU science faculty include: Alabama Polytechnic Institute, University of Alabama, American University, Arkansas Polytechnic College, Brooklyn College, Carnegie Institute of Technology, University of Cincinnati, Colgate University, Connecticut College, Dartmouth College, Dickinson College, Duke University, Florida Southern College, Florida State College for Women, University of Florida, Grinnell College, Hamilton College, Hunter College, Illinois Institute of Technology, Indiana University, Leland Stanford University, University of Michigan, University of Minnesota, Montclair State Teachers College, North Carolina State College, Northwestern University, Norwich University, Ohio State University, Oklahoma A and M College, Pennsylvania State College, University of Tennessee, Texas Christian University, University of Texas, Trinity College, Wabash College, University of Washington, Washington and Lee University, Wayne University, Western Reserve University, Wilson Teachers College, and Yale.

It is apparent from the foregoing statistic that the faculty of BAU (and the Science Section is perhaps typical of the whole) has an average academic qualification that excels that of the usual institution of its size in the States. A partial explanation is that the civilian recruits had to be at least 42 years of age and to have established reputations as successful teachers. A second explanation of the excellence of the BAU faculty is the care and good judgment of the military men and their civilian advisers who have worked since shortly after V-E Day on the problem of personnel procurement.

Another question in connection with the personnel problem is that of the willingness of the teachers to work in war-torn Europe and of the colleges and universities to release much-needed staff members. The principal answer to this question, I believe, also lies with the good efforts of members of the procurement staff, who not only made work with the American Army universities attractive, but who also convinced the candidates of the soundness and worth of the program. V-E Day was passed, and V-J Day was in the uncertain future. Teachers knew something of the conditions of war and the need of the soldiers for the type of transitional experience from war to civilian life which good American schools in Europe could provide, and several of them had served in World War I and taught in Army schools at that time. Many of them had taught recently in the Army Air Forces and Navy college training programs and desired to do more for the war effort and the soldiers.

Curricula

The 37 course offerings in science for the second term, which include only minor changes from the first term, are as follows:

Biology Branch: General Biology, Botany I (structures and functions), Botany II (survey), Plant Classification, Bacteriology, Genetics, Zoology, and Physiology; *Chemistry Branch*: Introductory General Chemistry, General Chemistry Review, Qualitative Analysis, Organic Chemistry, and Physical Chemistry; *Geology Branch*: Physical Geology, Historical Geology, Geomorphology, Structural Geology, and Field Geology; *Mathematics Branch*: Intermediate Algebra, College Algebra, Higher Algebra, Plane Trigonometry, Spherical Trigonometry and Astronomy, Plane Analytical Geometry, Advanced Analytic Geometry, Differential Calculus, Integral Calculus, Ordinary Differential Equations, Mathematics of Finance, and Higher Mathematics for Engineers and Physicists; *Physics Branch*: Nature of the Physical World, Introductory College Physics, General College Physics (mechanics, heat, and sound), General College Physics (magnetism and electricity, light, and modern physics), Atomic Physics, Magnetism and Electricity, Mechanics, and the Physics of Weather.

For the first term the Science Section taught 1,805 students in 96 classes with an average class size of less than 19 students. The second term enrollment is 1,946 in 105 classes with an average class size of 18.5.

The normal student load is three courses meeting daily, Monday through Friday. Teaching of three classes is also considered the normal faculty load. In some cases this means 15 contact hours a week, and most classes are rated at 40 contact hours for the eight-week course. In some of the sciences the credit units are increased to 4 and the weekly contact hours to 8 or 10. Two such courses are considered a full load for both students and teachers. Section chiefs and Branch heads carry a reduced teaching load because of their administrative duties. There is an orientation, advising, and counseling system which serves the students at registration and subsequently during the term. The official Faculty Advisers were relieved of teaching one class because of this duty. In general, the advising system has worked well by giving the students every aid while judiciously allowing them freedom and responsibility in determining their selection of courses.

Special Educational Opportunities

Although inadequate on the day of the opening of the first term, classroom and laboratory furnishings were soon available and satisfactory, if not complete, standard, and elegant. A good amount of proverbial Yankee ingenuity went into laboratory improvisation. Ordinary Army supply stocks, sources, methods, and personnel were inadequate to handle the unique and tough problems of academic supply, such as obtaining living organisms and prepared biological materials, chemicals rare in the European Theater of Operations, fossils and rock specimens, apparatus for mechanics, etc. In addition, processing of requisitions, transportation and other delays at first caused serious deficiencies in teaching materials. In some cases exploration and hand processing were quickly learned by the civilian instructors, and, aided and abetted by some officers, they were able to obtain equipment and supplies for biology, chemistry, and physics that never would have been obtained through "channels," or only after long delays. Three instructors, representing chemistry, biology, and physics, spent several days in Germany in the area between Frankfurt and Stuttgart, obtaining useful materials from captured medical dumps; and the physicists were able, by personal visits, to get for BAU many items from Signal Corps depots and other Army sources around Paris and Marseilles. In biology and geology, staff members were appointed collectors and by daily field work were able to obtain from the Basses Pyrénées district many excellent teaching materials. As a matter of fact, the use of such methods is standard at some institutions at home and enhances the value of a course. Textbooks have been a problem in several courses. Usually the books available have been the Education Manuals and Army Textbooks already in ETO. Some classes went through the first term either with no textbook at all or with a limited number on reference in the Library. The Library has steadily increased the number and usefulness of the items it contains. At the close of the first term there was a total of about 7,000 items available for student and staff use.

There are some advantages in the teaching situation at BAU that are noteworthy because they frequently do not exist at home. The biologists have made good use of the seashore, conducting some classes on the beach and obtaining laboratory materials from the sea. They also arranged for generous use of the very excellent local Musée de la Mer, not only for students in biology classes, but also for all members of BAU, with a naturalist-interpreter present as guide one day a week. The shortage or lack of preserved or prepared materials caused a desirable usage of living materials in biology. The geologists also found the Museum useful and have enriched their courses by collection of local rocks, minerals, and fossils. The chemists have utilized local industries by conducting tours to superphosphate and lead-chamber sulphuric acid plants, to open-hearth steel plants, blast furnaces, and coke ovens. In several instances, contacts have been made with French scientists which have resulted in enrichment of the teaching program at BAU. An extraordinarily capable and helpful Visual Aids Branch, attached to the Academic Division, has prepared wall charts and tables, still and working models,

and apparatus that equals or excels similar materials available in the States. This Branch has also shown numerous instructional movies for the classes. For example, Biology used 14 different films for a total of nearly 100 runs during the first term. One of the finest and most unusual features of the BAU teaching program is the extensive use of motor transportation. Jeeps, weapons carriers, two-and-a-half-ton trucks, and personnel carriers were made available for staff reconnaissance of the area, collecting, and conducted class trips, both during regularly scheduled class periods and on week ends. During one five-week period about 250 such trips were scheduled, and in one week about 60 such trips went out, approximately 1,000 students being accommodated. In the Academic Division as a whole, the Agriculture, Engineering, and Science Sections were the heaviest users of motor transportation, but Liberal Arts, Fine Arts, Journalism, and Commerce conducted some field trips with such diverse objectives as painting, the study of local flora, Basque villages, power installations in the Pyrénées, and sites of discovery of relics of prehistoric man.

The members of the BAU faculty are receiving beneficial experiences which will be reflected in their professional work and benefit their institutions. Although the course offerings have been mostly at the Lower Division level, there have been some advanced classes with highly qualified and stimulating student personnel. The Faculty has generally been impressed with the earnestness of the soldier students and their ability quickly to make the necessary adjustments from the military to the civilian patterns of thought and behavior. Although most of the soldiers have been away from the classroom atmosphere for from two to several years, they nearly all get back into the swing of it within two weeks. The anticipation of difficult psychological adjustment problems and the extensive planning and worrying on the part of educators at home as to what to do with the returning soldier have been unnecessary except for a very small percentage of men. The BAU teachers, on returning to their parent institutions, will be in an excellent position to assist their colleagues and administrators.

To any professor, whether or not he had been to Europe before, a chance to spend several months in France and, especially, to see firsthand some of the effects of the war and occupation was an inducement to accept the invitation to join the BAU faculty. Furthermore, the travel and foreign experience was to be without financial loss, for the Army contracts were so drawn that the teacher received his base pay plus 25 per cent for overseas duty and subsistence. Firsthand contacts with the French landscape and natural features, with industry and business, with the people and their conditions of life, and with French educators, scientists, and artists, offered the prospective instructor at BAU a strong reason for accepting the academic adventure.

Our military administration has made it possible for many of the professors to have additional experiences of great value to them. Between the first and second terms nearly everyone was allowed to leave Biarritz and to spend a period of approximately seven days on temporary duty at some point of interest. The majority accepted duty at Paris or London, with considerable freedom of movement at their destinations and with transportation and subsistence furnished. Some joined the regular Army tours of Switzerland or took hiking trips in the Pyrénées. One group of professors, as guests of the Ninth Air Force, toured Germany giving a series of lectures to the soldiers on subjects as diverse as the atomic bomb, the future of small business, and the contemporary American novel. Others attended the Congrès de la Victoire of the Association Francaise pour l'Advancement des Sciences. At the time of this writing, plans are being made for an American Week in the Netherlands early in December when about 40 professors from Biarritz American University and Shrivenham American University will deliver over 100 papers on recent advances in their fields. This goodwill congress will help our Dutch friends fill the void produced by more than five years lack of contact with scientific and other developments in the States. Such experiences are of inestimable value to the American educators who participate. They also do much to reassure our European colleagues, who have suffered and lost so much, that there is an internationalism and fraternity of science and scholarship.

The primary objectives of the Army in the establishment of the universities abroad were to develop institutions as nearly as possible like the usual civilian university of the United States to help the soldier awaiting redeployment (to the States or, at that time, to the Pacific Theater) make adjustments to civilian life while spending his time profitably. These objectives, in the opinions of both the students and the faculty, have been attained to a high degree through the institution which is briefly described above, and because of the reasonableness, the common sense, and cooperation of the military and civilian staffs, and the complete academic freedom which the Army had given the faculty. As far as academic credits are concerned, there seems little doubt that registrars will accept the course work done here by the students at its face value. But of far more significance are the wholesome lack of overconcern with credits, the desire to learn for its own sake and prepare for a new life.