



Freshman Camp, 1946

RUNNING on a fixed schedule, the 1946 frosh camp alternated speeches and free time, advice and question-answering bull sessions. The week-end-long camp clearly showed signs of a full summer's planning by associate dean for freshmen, Foster Strong, and the Beavers. Freshmen, 184 in number, were registered and photographed Friday morning, October 4, at the Institute, loaded into busses that afternoon for the trip to Camp Radford, in the San Bernardino Mountains, 35 miles east of Redlands.

Compulsory attendance, tried for the first time, offered few problems, one reason being that the entire budget for the camp was provided this year by the trustees. This feature permitted faster processing at the Institute, and a certainty that all frosh were exposed to the thorough indoctrination at camp. Class cards were passed out shortly before the camp broke up, sections were assembled and leaders chosen while the class of '50 was still relaxed and unburdened.

The chronologically mature class, averaging 20.5 years of age, consisted of the top 160 of 1100 applicants permitted to take the entrance examination, and 24 men who had entered the service before completing their freshman year at the Institute. That they were a hand-picked lot was impressed upon them, many of whom had previously survived much intensive service screening in the Navy's radio technician training program. Dean Strong emphasized the first night that they would be equipped with the necessary tools to educate themselves. This new generation of



Tech men were not to become finished engineers and scientists in four years. However Dean Winchester Jones at the Saturday evening session relieved the not-so-young hopefuls of some of the burdens they were acquiring, by reminding humorously of the theorist reputation accorded C. I. T. graduates by some outside the Tech family.

Given a picture of the present Institute by short, orienting talks on activities and the responsibilities of the class to the undergraduate program during the various lecture sessions, the new students also acquired something of the background of the California Institute which was outlined by Dr. Robert A. Millikan Friday night. Telling most of the story of the early days, the visionary but practical Amos Throop, George Hale, Henry Robinson, and others, Dr. Millikan explained the changed needs and names of the Institute's predecessors, largely omitted his great part in the phenomenal growth of C. I. T., but imbued the frosh with some of the spirit, made them realize that they, too, were pioneers.

President DuBridge the next evening sketched the future, listed developments the incoming class could hope to see, would probably take active part in. Expansion of the faculty, development of the overcrowded engineering departments, and a new student center foreseen in Tournament Park, were pictured as directions for the Institute's continued growth.

The almost 20 faculty members present were introduced Friday night. Saturday morning professor Pickering, in charge of the meeting, turned the procedure over to Lang Hedrick, A. S. B. president, who presented an equal number of student leaders. Lang also reminded the frosh that they were responsible this year for building the school they would attend for the following three years. Offering them promise of immediate participation, he noted that there were only two posts in the A.S.B. government not open to freshmen.

Consolidated Engineering Society, the new focal point of the Institute's five student engineering groups, was explained by Peter Kyropolous of the mechanical engineering department. The new organization will try to give all students, frosh especially, a general, well-rounded picture of the engineering profession through talks by leaders in the various branches of engineering, while the five societies will retain their separate entities and hold meetings of a more technical nature.

Wesley Hershey, Y.M.C.A. secretary, explained the functions of the "Y," told of the book exchange, loan fund, and promised forum groups and luncheon meetings throughout the year.

Highlight of Saturday's morning program was a seminar on "How to Study," conducted by Dean Strong with considerable participation from other faculty members and students. The goal was put at concentration and analytical thinking; the method, to read once over quickly, then to start to learn the details step by step. The importance of scheduling time was emphasized and re-emphasized.

Doctor Lindvall took the lead in explaining the newly reinstated honor system to the students in the afternoon session, followed by Don Mon, president of Ricketts and secretary of the Beavers, who gave details and examples.

A talk entitled "Relax, Relax," outlined Dr. Sorensen's views on extra-curricular activities, and an informal view on the honor system.



Last in the series of meetings which took up one-third of the freshmen's waking hours, was chapel Sunday morning, followed by a talk by Dr. Sterling. "Y" secretary Hershey told of the "Walking Dead" in chapel, insisting that facts alone are not enough; a system of values is essential.

Doctor Sterling, final speaker, explained how an engineer or a scientist could become an effective citizen. The question, as he saw it, is one of security versus liberty, and the student's duty that of being able to evaluate the situation.

Recreation was abundant at Radford, gave freshmen a chance to meet each other and stay warm in the rather chilly fall weather, which produced much speculation on the advisability of draining car radiators, blanket borrowing from a stock wisely provided by camp planners, rearranging of bed clothes to produce maximum warmth from minimum supplies, and extreme envy of those possessing sleeping bags by those equipped only with bedrolls. Touch football was played religiously by members of the football squad who had promised to make up for missing a weekend's practice. Volleyball competition slackened only when light showers or mess calls offered hazards or

(continued on page 18)

"X-Ray" Movies

New Northrop Technique Aids Handicapped by Improving Artificial Limbs

"X-ray movies" to help smooth the faltering steps of the nation's maimed ex-servicemen and crippled civilians have been developed through the progressive research of Northrop Aircraft, Inc.

The "x-ray movies" are a famous Northrop "first" outside the field of aviation. The method was developed as part of Northrop's prosthesis project, aimed at improving artificial limbs and controls.

Little has been said of Northrop's Project 17—the artificial limb program. Since midsummer of 1944 it has occupied a section of Northrop's staff of skilled designers and light-metals craftsmen. And many crippled veterans of World War II have achieved greater self-reliance than would otherwise be possible, thanks to new, more efficient artificial limbs and controls perfected by Northrop craftsmen.

Uncluttered minds of Northrop's master aircraft designers and engineers, applied to the old problem of building better prosthetic appliances have brought many changes. Lightweight plastic and high-strength aluminum alloys have replaced old materials to make lighter, more sanitary limbs.

Stainless steel control cables moving in flexible housings have resulted in greatly-increased efficiency. Where an eight-pound pull on an artificial hand "hook" formerly would transmit only two pounds at the hook, the Northrop control will transmit six pounds force at the hook with the same eight-pound pull.

Rotating wrist controls which provide additional dexterity, a new type elbow-locking device for above-elbow amputees, and automatic knee-locking devices which prevent leg collapsing on above-knee amputees are other Northrop developments. Electrical and hydraulic control mechanisms for artificial limbs are in experimental stages in Project 17.

The "x-ray movie" research project will enable Northrop's top technicians to study the kinematics and dynamics of moving bone structure of a walking man or the bone action of an arm, with a view to obtaining greater satisfaction for the physically handicapped.

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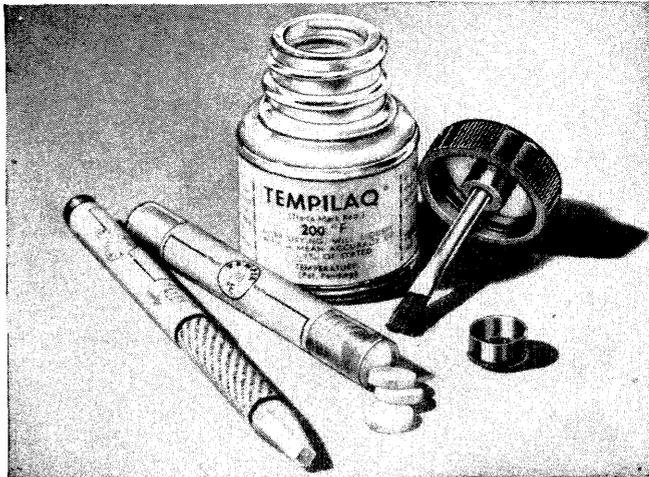
MICROBURET DEVELOPED BY INSTITUTE CHEMISTS

A DURABLE syringe-type microburet for measuring minute volumes of liquids was developed by Institute chemists during the war; one result of a research program sponsored by the Office of Scientific Research and Development to find suitable apparatus for laboratory and field analysis of chemical warfare agents.

The apparatus consists of a syringe holder equipped with a precision micrometer movement. A glass hypodermic syringe is clamped in the holder, and fluids are discharged by turning a graduated micrometer knob. The maximum delivery of the instrument is approximately two cubic centimeters. The volume may be read to one microliter, and selected syringes afford a precision of one- or two-tenths per cent.

WOMEN WIN THROOP CLUB TIFF

AT A MEETING early in October, the men of Throop Club decided that a woman's membership in Throop Club Wives, the auxiliary organization, did not obligate her husband to be a member of Throop Club. This settled, the next decision for the men is that of choosing between samples of upholstery fabric collected by the women preparatory to re-covering the Club's furniture.



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Freshman Camp, 1946

(continued from page 15)

diversion. Mountain golf, played up and down hill with croquet-like equipment occasionally broke up other sports as golfers dashed madly after a ball which had missed the green.

Climax to athletic activity came Sunday morning in weather permitting stripping down to only two layers of clothing. A faculty team sparked by Harry Lass, mathematics teaching fellow, in the pitcher's box, and Chuck Auerbach, resident associate of Dabney, who alternated between first and home with Dr. Sterling, held the frosh to a 5-5 tie. Dr. DuBridges, playing second base, and batting well over .300, confounded young cameramen who had three or four lenses trained on him much of the time, when, after getting to first on a clean single, moved to second, and then ran for home when the next batter doubled. After the dust cleared and the president was pronounced safe, cameramen of frosh, soph, junior, senior and graduate standing found that they had failed one and all to get pictures of the event.

CORRECTION

IT WAS stated in the August issue of *Engineering and Science* that "Russel J. Love Heads Research Committee." Mr. Love wishes to correct this statement. The actual head of the Pressure Vessel Research Committee is Mr. Walter Samans of the Sun Oil Company, chairman. Mr. Love is secretary of the committee, and in charge of the office.



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