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All material for publication must be received by noon of the day previous to issue. The Editor is always responsible for the opinions expressed in the editorial columns, and the Managing Editor for the matter which appears in the news columns. Although communications may be unsigned, if so requested, the name of the writer must, in every case, be submitted to the Editor-in-Chief. THE TECH reserves the right, however, to reject unsigned communications.

**In Charge of This Issue**

G. F. Ashworth.....G. Y. Anderson, Jr.

Friday, December 8, 1922

**OUTING CLUBS**

ENGINEERS, traditionally have come to be regarded as active, two-fisted men, capable of handling themselves and others under almost any circumstances. There are, admittedly, too many of us at Technology who do not qualify under these requirements, but who have the physical possibilities which would lend themselves to development.

The organization of the Outing Club was greeted with the hope that it would attract and benefit many men who would not submit themselves to the discipline and grind necessary for athletic competition. On account of our natural environment in Cambridge, it can hardly be expected that the Outing Club will attain such proportions as that at Dartmouth, which includes 1400 of the 2000 students in the college. Yet we must realize that with this, as with most other activities, a greater number of members means added benefit to the activity and to each individual.

The club has been invited to send entries for competition in the Dartmouth Winter Carnival. It would be regrettable to have the Outing Club, and through it, the Institute, poorly represented in such a meet, and yet, if the membership of the club is narrowly restricted, it seems only too likely that its representation at an

affair such as this would be inadequate.

The activities of the club such as its Christmas trip to New Hampshire, its weekly hikes or horseback rides, and in the spring, its camping and canoeing, surely should attract more of the men of proper calibre than have joined the Club up to the present. Whereas there may doubtless be some advantages in limiting the membership, the possibility of increasing the scope of activity of the Club, and the added prestige to the Club itself and of the institution whose name it bears, appear to be good talking points for a large outing club at Technology.

**GENERAL BULLETIN**

THE advisability of publishing the second term General Bulletin a reasonable time in advance of the first classes, can not be too strongly urged. Unfortunately during the past, due to the fact that the supply of books at the T. C. A. office was necessarily limited and the stock at the "Coop" seemed invariably in imminent danger of becoming exhausted, it has sometimes proved quite a difficult problem to obtain the necessary text books during the brief period which elapsed between the term-opening and the day on which the bulletins first became available at the Information Office.

The objection might be raised that the early publication of the bulletins will deprive students of a hitherto iron-clad excuse for unprepared assignments during the first few days of the term, but it is hoped that the advantages to be derived will offset this serious drawback.

THE TECH takes pleasure in announcing the result of the fall competition for positions on the staff. The following men have been promoted to:—

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P. R. Goldings '25  
ASSISTANT EDITORS, News Dept.  
W. W. Dullely '24  
D. A. Sherman '24  
ASSISTANT EDITORS, Sports Dept.  
G. Y. Anderson, Jr., '24  
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The elections to the staff are as follows:—

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**CHEMICALS TO CONDUCT TRIP THIS AFTERNOON**

This afternoon the Chemical Society will conduct a trip to the refining plant of the Beacon Oil Company in Everett. The men taking this trip will meet in the Walker lobby at 1 o'clock and plan to reach the plant before 2 o'clock. The trip will be limited to twenty members and will close the society's activities for the term.

**NOTICES**

**FOR UNDERGRADUATES**

**OFFICIAL**

The eighth meeting of Course 5.94, Recent Developments in Science, will be held today at 4:00 o'clock in Room 10-250. Professor V. Bush of the Department of Electrical Engineering will speak on Artificial Transmission Lines.

**UNDERGRADUATE**

There will be a meeting of the class officers and section leaders of the freshmen class today in room 2-390 at five o'clock. All are requested to be present as the meeting is very important.

**Opportunities in Civil Engineering**

By Professor C. M. Spofford

Civil Engineering is that branch of engineering which deals chiefly with the location, design and supervision during construction of works of more or less permanent character required in connection with transportation, water power, public water supplies, industrial development, sewage disposal and irrigation. It does not cover the design and construction of the equipment required in the operation of these works, which fall within the field of the mechanical, electrical or marine engineer.

The scope of the profession is clearly shown by the following summary of the more important fields of activity covered by the civil engineer: Structural Engineering, including bridges, elevated railroads, dams, ocean piers, and steel and reinforced concrete buildings. Hydraulic Engineering, including water power, water supply and irrigation projects, the improvement of rivers and harbors and the construction of canals. Railway Engineering, including subway and tunnel construction. Highway Engineering. Sewerage Engineering. Surveying.

**Often A Valuation Engineer**

In the first five fields of the civil engineer's duties include the surveying necessary in connection with the location, the making of computations and drawings required for construction, the preparation of specifications and contract forms necessary for awarding contracts, the supervision of construction and the maintenance of the various constructions. Not infrequently he is called upon to supervise operation and to make valuations.

Under the head of surveying comes not only the ordinary land surveys required in connection with property transfers, but also the highly accurate triangulation surveys carried on by public authorities in order to locate and accurately map the important natural and artificial features of the country as a whole, and of its various subdivisions.

**Opportunities Numerous**

Examples of the work of the civil engineer are seen on every hand. Among them are the great railway systems upon which the prosperity and, indeed, the actual existence of certain portions of our own and other countries depend; the water supply systems which furnish pure water to our cities either by bringing it from distant sources of supply or by purifying water from nearby sources otherwise unsafe for use; the great bridges between New York and Brooklyn, across the St. Lawrence at Quebec, and across the Mississippi; the Panama, Suez and Erie Canals; the Assouan Dam across the Nile; the harbor works which have made such harbors as Hamburg and Liverpool able to handle the huge modern vessels; the canalization and dredging of the St. Lawrence River, making possible the carrying of freight by water from Lake Ontario to the ocean; the Welland and Sault Ste. Marie Canals connecting the Great Lakes; the Chicago Drainage Canal forming a channel for the discharge of Chicago's sewage into the Mississippi; the irrigation works of the West; hydro-electric power plants, such as those at Keokuk on the Mississippi, at Niagara Falls, and on the Deerfield River and elsewhere in Massachusetts.

The opportunities open to the recent graduate in civil engineering are numerous and constantly increasing with the development of this and other countries. The chief demand comes from companies engaged in construction of steel and reinforced concrete structures such as bridges and buildings, private civil engineering firms engaged in miscellaneous civil engineering work, steam railroads, hydraulic power companies, private water supply companies, engineering schools, and Federal, State, County and Municipal departments of surveys, highways, rapid transit, water supply, sewerage and public utilities. Other demands come from industries maintaining their own construction departments, from manufacturers of engineering materials, from fire insurance companies for inspectors, and from a large number of miscellaneous sources.

**Salaries High**

The opportunities open to the civil engineer for advancement along strictly professional lines are excellent. Amongst salaried positions, those of chief engineers of railroads, of steel companies manufacturing structural materials, of general contracting companies, of water power companies, and of public departments of highways, and the like, are oftentimes positions of much importance carrying liberal salaries. Indeed, in New York City, the highest salary paid to a municipal employee is paid to the Chief Engineer of the Board of Water Supply, who receives a salary larger even than that of the Mayor, while the Chief Engineer of the Transit Commission receives a salary equal to that paid the Mayor.

In addition to such salaried positions as those above mentioned, the

possibilities of private work are considerable, and in our larger cities numerous civil engineers have established large and lucrative practices, frequently employing office forces of considerable size. Such engineering organizations are frequently called upon by financial interests to report upon proposed projects, and to design and supervise construction of work throughout the United States and in foreign countries and, in general, find themselves engaged in interesting and diversified fields of activity.

**Many Contractors Civil Engineers**

The civil engineer often finds it advantageous, after obtaining a certain amount of experience, to deviate from strictly professional work and to enter business fields allied with engineering construction or operation, or with the production of engineering materials. A considerable number of civil engineers become contractors and engage in the building of structures of all sorts, highways, foundations, water and sewerage works, for which engineering experience in construction gives one especially good experience. Many of our great railways have selected civil engineers for their heads, including such systems as the Pennsylvania; New York, New Haven & Hartford; Southern Pacific; Atchison; Topeka & Santa Fe; Chicago Great Western; Northern Pacific, and the Canadian National Railways.

The first-year student who is considering taking the civil engineering course should realize that, unless he has a natural aptitude for mathematics, physics and allied subjects, he will find the course a difficult one to complete. He should also realize from the beginning that professional training alone will not make him successful.

(Continued on Page 3)



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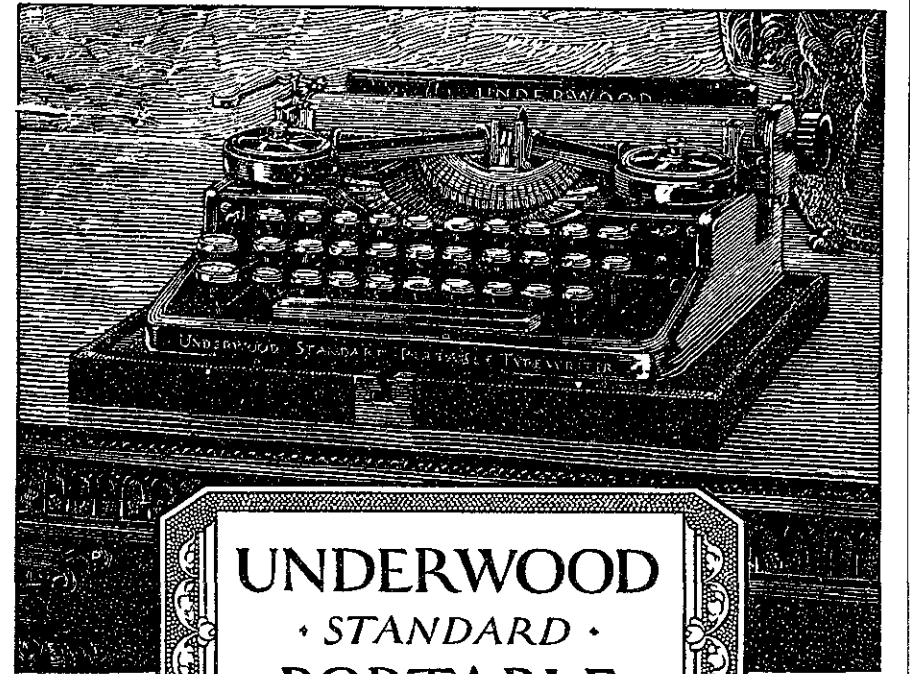
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