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Manager.....George M. Wallace, '10  
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THE ENGINEERS' EDITION.

This edition of the Daily Nebraskan  
is devoted to the engineering depart-  
ment of the University of Nebraska.  
The task of getting it out was in  
charge of a staff of engineering stu-  
dents, of which Robert A. Gantt, 1909,  
was editor-in-chief.—EDITOR.

BROADER TRAINING.

In the words of President Schur-  
man: "The modern engineer, if he is  
to be truly educated, needs a training  
broader than physical science and  
technical study. He too, because he  
is a man, needs the culture of the  
humanities—that liberalizing and ex-  
pansion of mind which comes from  
the study of literature, history and  
philosophy. This, however, he can no  
longer secure in a four-years' tech-  
nical course. The result is that all  
over the country men are graduating  
in the engineering courses with an  
ignorance of literature, history, and  
the other liberal arts so dense that  
no proficiency in science and technol-  
ogy can save them from the charge of  
being uncultured, especially, when, as  
so often happens, as a necessary re-  
sult of their limited reading of litera-  
ture, they are unable to express them-  
selves, either in speech or writing, in  
correct English prose."

testing machine.

One 2,000-pound Riehle automatic  
shot cement testing machine.

One 1,000-pound Riehle cement test-  
ing machine.

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abrasive action of brick and paving  
blocks.

It also has a good collection of suit-  
able instruments of precision for ob-  
taining deformations in conjunction  
with the testing machines, and a ce-  
ment testing apparatus for making  
complete tests on cements, concretes,  
and mortars.

CLARK E. MICKEY.

CHEMISTRY AND THE ENGINEER.

The importance of a knowledge of  
chemlstry as part of the equipment of  
a trained engineer has grown with the  
development of the profession. For-  
merly physical data sufficed, but as  
structural work advanced and competi-  
tion in manufactures became keener,  
demands became more exacting. The  
engineer finds that he requires a more  
intimate knowledge of his material—  
which is afforded by chemistry. He  
need not be an expert analyst, but  
finds that a mastery of the principles  
of the science, together with a knowl-  
edge of the sources, composition of  
his materials and the changes to  
which they are subject under varying  
conditions, greatly increases his ef-  
ficiency.

A knowledge of the chemistry of  
combustion, of fuels, their analyses  
and those of the products of the fur-  
nace, the chemical criteria for judging  
boiler water, the chemistry of the for-  
mation and prevention of boiler scale,  
enables the engineer to put a boiler  
plant on the most intelligent and eco-  
nomical working basis. The subject  
of iron and steel is one of vast impor-  
tance and an understanding of the re-  
lation between the chemical qualities  
and physical characteristics has lead  
to a far more intelligent handling of  
these structural elements. Also in ce-  
ments and concretes, rapidly becom-  
ing of primary importance as building  
material, does the engineer find chem-  
ical data an indispensable supplement  
to his physical tests.

There are but a few of the fields  
of engineering activity in which chem-  
istry is not affording valuable assist-  
ance. As rule-of-thumb methods con-  
tinue to be discarded and more funda-  
mental facts are required, its function  
will become still more important.—  
George Borrowman.

field and highway whom the good peo-  
ple inform him is a civil engineer.

He may be, but 999 times out of 1,000  
he is not. Do people call a druggist  
a physician, or a nurse a doctor? Do  
they term a purveyor of printed legal  
forms a lawyer, or a notary a judge?

However, we cannot censure the pub-  
lic for not recognizing distinctions  
which are fully understood among our-  
selves. As long as a man may become  
proficient in opening and closing a  
throttle, firing a boiler, stringing a  
wire, holding a rod or running a sur-  
veying instrument and have his self-  
assumed title of engineer accepted  
without protest, so long will our par-  
ticular consanguinous parasite con-  
tinue his merry way. Not that the  
limitation of his operations would  
hinder the striving of the best among  
the profession, or that a lethargic re-  
action might follow among practicing  
members, but that the client may  
know when retaining an engineer,  
that he is qualified for the service to  
be rendered by bearing the stamp of  
some recognized endorsement.

The best man will always be at the  
top whatever be the character of his  
associates,—good, bad or indifferent;  
or whatever the nature of his service  
to the public, but if he has been ear-  
nest in his preparation for life's work,  
has spent money and years in fitting  
himself, why not let the citizen know  
the facts by means of some ready dis-  
tinction? Is it fair to place him on  
the same plane with one who has  
never sought any training save suf-  
ficient practical experience to readily  
gain his living? We often hear of self-  
made men; they are lauded far and  
wide, their praises sung from rising  
to setting sun, but upon closer inquiry  
and personal contact they too often  
exhibit the crudities of their own  
handiwork, and at best their claims  
to success rest solely upon the amass-  
ing of wealth and the hoarding of gain.  
Anyone can be miserly; it is one of  
the retrogressive instincts of man  
transmitted to us from an animal an-  
cestry whose chief occupation consist-  
ed in gathering food, and, if physically  
powerful enough, to rob a neighbor of  
his store. Furthermore, the term  
"self-made" is more or less of a mis-  
nomer. No man was ever self-made  
in life's career.

Our common fund of human knowl-  
edge is largely a heritage from past  
ages, the successive accumulation of  
differential increments, to which our  
generation adds a little and then  
passes it on to posterity to be slightly  
increased by them and in turn trans-

John Westover

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MATERIAL LABORATORY.

The principal function of the mater-  
ials laboratory is to assist the engin-  
eering student in securing an accu-  
rate knowledge of the properties of  
the different materials of construction  
and the standard methods for making  
the various tests. He is taught by  
experimental investigation the prac-  
tical application and limitation of the  
theoretical principles, the proper  
methods for drawing conclusions, and  
for making reports of the tests. This  
knowledge enables the engineer to  
successfully estimate the strength and  
to forecast the behavior of his de-  
signed structure, with a degree of cer-  
tainty. It also adds character to the  
work of inspection and prestige to  
the engineer.

One other function is that of fur-  
nishing facilities by means of which  
senior and graduate students may  
undertake by systematic research to  
discover laws or coefficients of value  
to the engineering profession.

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ped with the following list of ma-  
chines:

One 200,000-pound Riehle testing  
machine, autographic and automatic.

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chine, automatic.

One 50,000-inch-pound Olsen Torsion

THE ENGINEER.

How about the engineer? He ex-  
periments, records and correlates  
data, determines nature's laws of ac-  
tion, subjects all structural material  
to definite tests, teaches his fingers  
to a ready graphical expression of his  
thoughts, all in order that he may be  
equipped with a trained mind and a  
skilled hand, completes a set of cur-  
riculum and with his parchment es-  
says forth to make the desert blossom  
as the rose, to turn night into day, to  
build railroads, highways, bridges,  
structures of every description, to de-  
vise water and sewer systems, to  
transmit power from one point to an-  
other, and to construct machinery  
whereby man's shoulders are relieved  
of their burdens of labor. Perhaps his  
first experience brings him in contact  
with a youth climbing a pole, who,  
nonchalantly swinging one leg over a  
cross-arm, proceeds to "tie in" a wire.  
His inquiry elicits the reply from a  
layman that this is an electrical en-  
gineer. He may be, but nine times  
out of ten he is not. Or, a man driv-  
ing a steam engine, stationary or loco-  
motive, and people tell him that this  
is a mechanical engineer. He may be,  
but ninety-nine times out of 100 he  
is not. Or, again a person with swing-  
ing stride drawing a steel tape over

mitted to following centuries. The  
record of this knowledge we find in  
books and that is why the novice en-  
ters the university or technical school  
to acquaint himself with the classified  
results of discovery and achievement.  
And should he be an engineer, is not  
his work of as learned a character or  
his curriculum of as high an order as  
that of the lawyer or physician? Is  
it not as much of a professional act,  
and far more difficult, to design a  
bridge as it is to set a fractured limb,  
to install a sanitary system for a city  
as to rectify the results of a clogged  
alimentary tract, to draw and design a  
machine as to write a brief, or to elec-  
trify a railroad as to electrify a jury?

Whatever the means finally adopted  
to elevate the intrinsic standing of  
the engineer and his public recogni-  
tion, whether by state control as in  
the two cases mentioned, or some  
other plan equally effective, the writer  
personally feels like the small boy  
who, when delivering part of Adams'  
speech before the Continental Con-  
gress, shouted forth at the climactic  
moment—"Sink swim, liver die, I  
give my hand and heart to this vote."  
—Frederick S. Jones, Dean of Minne-  
sota College of Engineering.

C. H. Frey, florist, 1133 O St.