V. Do you believe in a reduction of the 
tariff; and do you believe there would be a re-
duction in the tar(e)iff you should mend the hole 
in your coat?

ALGEBRA.
I. If the equality
   \[ YO : M :: E : U \]
   why don't
   \[ YO = ME, \]
   and if \( YO \) equal \( ME \), why can't you stand 
   for me once in a while?
II. Arithmetical Progression. Prove that 
   the sum of two terms at the M. I. T. equals 
   \$200.
III. A certain young lady is three times as 
   old as B. B is 10 years of age; why, then, does 
   the certain young lady try to make out her age is 
   sweet sixteen?
IV. A boy at a fair spent his money on 
   eighteen oranges and sixteen apples, which he 
   ate. If he had had half again as much money, 
   he would have had half again as much pain. 
   Explain what was the matter with the boy, and 
   who paid the doctor's bill.

PHYSICS.
I. Think of every unanswerable and un-
earthly question any one ever heard of, also 
a few that no one ever heard of, and answer 
them with great care, stating how you draw 
your conclusions, \textit{i.e.}, with pencil or ink.

ENGLISH, RHETORIC, AND HISTORY.
I. Who was George Washington, and who 
would now be thought the greatest man, George 
Washington or John L. Sullivan?
II. What are the chief exports of the United 
States? Are not Newburyport, Salem, and New 
Bedford, kind of \textit{ex-sports} now?
III. Is the \textit{aim} of the study of rhetoric prac-
tical; that is, could it hit a bullseye at a thousand 
yards?
IV. Can you parse (pass) the Brunswick 
Exchange?
V. What is the nature and purpose of the 
Introduction, or, in other words, was the \textit{purpose} 
of the \textit{introduction} to me of that dull girl due to 
your bad \textit{nature}?

CHEMISTRY.
I. What does the symbol \( H_2O \) tell us of the 
composition of city milk?
II. Tell exactly what you mean when you 
use the symbols I. O. U.; but if you don't mean 
anything, don't tell.
III. Explain all that takes place when a 
servant girl brings kerosene in contact with the 
kitchen stove. Also tell if this is a chemical 
or physical change; and if it is a physical change, 
why will not physic cure the girl?
V. Give the principal characteristics of com-
mon gas? Is not the way your gas bill runs 
up a characteristic of gas? If not, why not?

Metallic Thermometers.

It is interesting to note the advance which 
hase been recently made in the construction 
of one of the most useful of scientific instru-
ments, namely, the metallic thermometer.
The first to apply the unequal expansion of 
metals to the construction of a thermometer was 
Brègnet. His method consisted in suspending 
a cone-shaped lamina, as it is called, from a sup-
port like that from which the needle of an ordi-
nary astatic galvanometer is dropped. The 
lamina is a long metallic strip, composed of two 
metals which expand unequally by heat. These 
metals are soldered together lengthwise, and in 
the above case, the strip was shaped into a cone, 
the apex of which was attached to the support, 
and the free end or base to a hand. Under the 
action of heat the cone would unwind or open 
out, because the more expansible metal was 
placed inside. This motion carried the hand 
with it, which, being adjusted over a suitably 
marked disk, would indicate the temperature. 
Since then marked improvements have been 
made. At first an improvement was made in 
the shape of the lamina, which consisted of two 
flat strips of brass and steel, soldered together 
lengthwise, and then bent \textit{into} the shape of a \textbf{U} 
with the brass innermost, one end being made 
fast, and the other connected to a wheel, moving 
a pinion on which was fixed a hand which, after 
adjustment, indicated the temperature Ex-