The book cover features a complex marbled pattern with large, irregular, light blue-green spots on a dark, almost black background. These spots are interconnected by a network of thin, branching veins in shades of red, orange, and yellow. The overall effect is reminiscent of stone or biological tissue. A rectangular, off-white paper slip is pasted onto the center of the cover, containing the title and author information in cursive handwriting.

Notes on Chemistry
+
A trip to Chateaugay Lake
Deer Hunting &c.
by H. G. Kennan.

$f(x) = 0$

$\varphi(x) = 0$

This book contains the
trip to Chateauguay lake
mentioned in Henry
+ Kennon's note book
of the natural history
of the Island of Montreal
It is in H.G.V.'s writing.

+ August 21st to
Sept 1st — 1863
Page 204

4th semester

Investigate laws which determine
 the ^{mutual action} of ^{molecular} particles =

2 classes - Simple & compound
 Simple - made of identical particles
 number upwards of 60 -

2 Compound -

Matter in 3 conditions -

Solid, Fluidity, Elasticity

Caloric - when acts upon our senses
 we term it heat. permanent in production
 heat - pervades all space - consists of
 matter imponderable. enters into
 composition of all matter - The true zero
 can never be reached. Heated body
 distributes as all sides rays - increase
 ratio square of distance - Those that
 conduct heat well & the opposite -
 glass does not conduct as well as iron -

Conduction - Gold (Silver better) 1000
 Silver 973 Copper - Platinum - 500
 Iron 80 - Bad conductor chiefly in

Bricks are bad conductors - retain heat
well till, ~~the~~ &c. - Heat expands bodies.
Fluid ~~condition~~ - Universal with one
exception - Mercury - Law does not apply
to liquids - Heat fluids by the
mobility of their particles. Water
Glass - Air becomes better of contact -
not good conductors -

Caloric radiated from centre to circumference
~~substance~~ - Reflecting & Radiating are inverse
absorption & reflecting are inverse.

Reflection opposite of absorption.
No bodies ~~in world~~ they radiate
but little, if not the opposite -
All bodies radiate caloric.
always pure always contain water vapor.

No dew in cloud of weather.

No dew in wind scatter

Platinum 76. Silver 62 - Brass 52

Plate glass

Expansion in fluids greater than in
Solids -

Instruments for determining temperature
water expands 27 $\frac{1}{1000}$ the on expansion
inch by passing - Alcohol never yet
frozen - - 135 - greatest cold -
(artificial) - 39 below zero - mercury melts
+ 50 - mean temperature of globe
98 - human blood -

1000 cal. heat luminous in dark -

1150 - common specific -

~~the~~ water requires more heat than mercury
to be brought up to a certain standard -
When once water heated, cools it is very
slow to cool. Hydrogen Gas requires -
greater heat to bring it to a certain standard,
than water - ice 32 - water 172 -
temperature of same mixed - 34° -
32° heat absorbed by liquifaction of snow -
Heat is essential to produce liquifaction
Alcohol can be brought below 32 - water can not

Vaporization - alcohol boils at 67° -

Pressure of atmosphere chief
obstacle in the boiling of water -

Boiling Point of Water - 184 -

First system of steam engine - steam
was let in below, & drove the piston up -
then the water being condensed the
piston was driven down by pressure
of air -

Evaporation - 8 feet $\frac{1}{2}$ of rain, falls
within the tropics -

Snow - northern - limit 35° -

Southern - - 45° -

Vast tracts, on which rain never falls -

Evaporation dissolves pure water -

Dead sea most remarkable -

detached seas, receive water impregnated
by the lands & country over which it
has passed - these basins would overflow
if it but for evaporation -

Salt 3 p. ct in ocean - (average)

In the sea the percentage is 24 - -

~~Sea~~ Ocean increasing in saline matter -

Dead Sea basin very low - 1200 feet below

Mediterranean - Sea of Tiberias 300 feet

below - Mediterranean -

Measurement of water in atmosphere - performed
in various ways. Find dew point -

Dew point - shows shows amount of water
in atmosphere - ~~not used~~ various instruments.

Of Gases -

Some gases have been solidified & others
liquefied. Condensable & noncondensable.

Carbonic acid gas may be liquefied -

~~not~~ Cold alone will condense Sulphuric

Acid gas. ~~gases~~ Gases may be made
to mingle ~~gas~~

Shards - broken fragments of asteroids -

Character of bottom must influence water -

Gases & characteristics of gases -

They may be condensed - liquefied & also
consolidated -

Have proved to dissolve by water -
Hydrogen ~~gas~~ can only be kept in india rubber
bags for any length of time -

Exp. lighter than Carbon -

Must be in animal membranes gas can not
escape -

Source of Earth's Heat - From the Sun

Under Sun exceedingly hot -

Sun's heat reaches about 45° below surface
of the earth - steady temperature

winter & summer, night & day - comes
chiefly from heat at center -

at depth of 30 miles - heat enough
to keep in fusion now & -

Volcanic vents for the internal fire -

Whether this heat effects the surface of
globe is doubtful - cooling of earth
must have taken myriads of years

& would require the same time to
be heated 1 degree - Heat of Sun has
been measured -

2 Combustion. Sulfur & Phosphorus mixed
produce combustion - Living animals
are source of heat - particularly the higher
classes. 2 form of electricity -
Chemical action - Heat sustained by
chemical agency - Electricity is another
cause - Friction causes heat - Percussion
produces heat - ~~Summer~~ Heat can not be
weighed. May be added to & subtracted from
Light - Without light all would perish -
Light emanates in straight lines always -
Light travels two hundred thousand miles
a second. - 2000000 of years for light
to travel from farthest star to the earth -
Sound - 11-10 feet second - mile 5' -
In water 45000 feet in second.
See water faster. Solids faster again
Wood more rapidly than metals
Light - object must be $\frac{1}{10}$ of second
before eye can see vision - object not
pictured on retina suddenly -
black absorbs - white reflects -

(Examination)

always two rainbows produced
3 properties in Solar Ray.

greatest heat is that found near red
greatest light found near yellow

Heat propagated by undulation.

Mode of ascertaining S. Gravities

Specific - means comparison of
bodies -

Weight acquired property - farther we
move from the earth the lighter the
body - attraction of Sun greater than
that of earth - 625 -

Phrasology of Chemistry -

Chemical affinity -

Formation of solid from 2 liquids

Formation of a liquid from 2 solids

2 solids produce gas

Sulphate of Magnesia

Sulphur + magnesia.

~~Catalysis~~ - Composition of Matter -

Salt Sulphur Mercury - these substances were supposed to be contained in every thing - ~~element means simple~~

64 to 65 elements - but 14 or 15 of common use & occurrence, others again of no use - Metals -

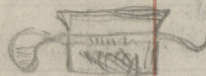
Non metallic Metals - Properties large for portion solid two liquid mercury bromine - A few others gaseous - Proportions - whole idea of laws of Chemistry based upon this -

Composition of all substance fixed & invariable - O & H are the chief elements of all -

Hydrogen Gas - constituent of water -
It is here in state of purity - Oxygen differs
in this respect. always combined -

combined with sulphur Carbon - Nitrogen -

Water may be decomposed in two ways -
certain metals decompose water, need
expense - Heat is employed -



also Sulphuric acid - Zinc -
difficult in practice -

Hydrogen is expensive for battery -

On a scale of Hydrogen - or as generated water
pale yellow colour -

Ozone - excited condition of oxygen -

Atmosphere -

Carbonic Acid Gas - Upon water always
in air, sometimes after above atmosphere
Saturated with water - normal constituents -
Ammonium - generally gaseous - highly soluble
in water - Ammonium united with nitric
acid in atmosphere -

Vegetation - only condensed air -
some certain in fact

Chlorine -

cold water absorbs double amount of chlorine that warm water does -
Therefore it is collected over warm water
bleaches - destruction of colour -
dense - colour green - 1 volume of
water absorbs 2 volumes of gas at 60° -
by gradual breathing Chlorine may
be breathed - but ~~is fatal~~ has a
fatal effect if breathed in large
quantities - bleaching agent for
cotton & linen fabrics -

Common salt is a chloride - 2 classes
of salts - - Kalloid Salts

Hydrochloric

Chlorine - continued

~~Chlorine of Oxygen~~

Hypochlorous Acid - Hypochloric acid -

bleaching salt - Chloride of lime -

Chloric Acid =

Chlorous acid - ClO^2 -

~~water~~ - gaseous body - yellow. +
has a bleaching power. Strong but yet
employed in the arts - heavy - easy
decomposition

Hyperchloric acid - ClO^3 -

Chlorhydric Acid -

Fluorine —

Notes on a 21 August to
1st Sept^r 1863

A trip to Chateaugay Lake.

Leaving The Ogdenburg train at Ellenburg
Station we proceeded in a lumber-
cart to the shores of Chateaugay -
a distance of about 12 miles -

There is nothing remarkable on this road
until we reach Ellenburg Corners a small
but very neat little village situated
about five miles from the railroad -

~~After stopping a few minutes we made
inquiries concerning the lake~~

Following along two miles further we reached
E. Centens ~~another~~ a much smaller village
than the Corners, it however contains
a very neat little church ~~and~~ &
some good ~~and~~ pretty houses - & last
but by no means least an immense
sign board towering over a rather
small house - with the inscription
Hartford in large letters - as you
draw near however you are taken

down a little by seeing in small, ~~other~~
characters below - boat & shoe shop -

Passing this point we leave behind
us the last sign of civilization, & start on ~~the~~ the
rough part of our journey. ~~We~~ ^{we} soon ^{find} a dense
forest of gigantic pine & smaller foliage
line the road on either side, ^{upon} & our waggons
go with renewed energy over these
large stones on the road - Great numbers
of these large trees seem to be entirely
dead & stand ~~gaunt~~ ^{gaunt} & green^x -

! Sometimes a wagon journeying ~~in~~ ^{from} here
has to be lifted over some large ~~tree~~
tree which has fallen across the road.
A letter later in the season deer are
often seen to cross a thin road -

As we drove along partridges flew up
in every direction with repeated whirrs -

A short time sufficed to set us clear of
the timber & we emerging we caught
our first glimpse of the lower lake lying
beautifully calm ~~in~~ ^{at} the feet

of the smaller mountains which
may be said to begin the Adirondack
range - close by stands the Hotel
Kept by one Mr Pherson, ²⁰ a station
for the convenience of sportsmen -
Here you may obtain guides ~~at~~ all
boats - The necessary for camping -
Having procured ~~our~~ boats two guides
& a dog we started for the upper
Cargus Lake - This ~~but~~ as we sailed
up up this narrow lake - which
seems might almost be called an outlet
to the upper one - we noticed the ~~strange~~
same with regard to the trees ^{and} as
to we had before noticed - Fire does
not seem to be their destroyer, as the trees
were in no way blackened but stood
in large & continuous groups with
a strip of foliage - At Garding the trees
may be the cause, as for the purpose
of clearing ground, may be the cause, ^{as} it
is a common practice in some

At the end of this lake. As we
arrive at the narrow ~~strait~~ passage
which connects the two it with the
upper lake - So concealed is this
passage that ~~you~~ a boat in advance
of you seems to enter the among the
branches of the trees - A few strokes
& we glide out into Chateaugay Lake.
Propper - It is here ~~a~~ ~~considerable~~ ~~one~~ ~~is~~ ~~to~~ ~~be~~ ~~seen~~
we had one of the finest views ^{to be had} ~~on~~
on the whole lake - In front of you
lies the whole calm broad lake, hemmed
in on every side by lofty mountains,
~~with~~ the slopes of which are clothed with
dense forests & afford ample concealment
for numbers of deer. In the most
straight before you stands a solitary
island - The only one in the lake - rising
abruptly from the water like seemingly
with a huge boulder; a pine stands
on its extreme point for sportmen -
These pines are to be met with in

Several parts of the lake for camp etc -
Passing this island we strike across
to a band of ~~promontory~~ ~~entirely~~ ~~entirely~~
interior, out onto the lake, ~~practically~~ ~~clear~~
of high timber, ~~as here we~~ ~~at~~ ~~valuable~~
~~the~~ ~~interior~~ ~~tent~~ - our chosen camping
ground - ~~at~~ ~~the~~ ~~point~~ ~~being~~ ~~practically~~ ~~clear~~
of high timber & ~~perhaps~~ ~~few~~ ~~or~~ ~~of~~ ~~more~~
small ~~and~~ ~~insects~~ ~~black~~ ~~flies~~, of which
we had heard so much - As the
first boat men near the shore, a large
rabbit jumped out ~~of~~ ~~the~~ ~~cover~~
& to have a look at us - Hardly
however had the creature showed itself
when ~~it~~ ~~glittered~~ ~~a~~ ~~long~~ ~~tube~~ ~~of~~ ~~fine~~
soft glitter in rays of the sun
setting down & a loud report
rang out ~~the~~ ~~along~~ ~~the~~ ~~mountain~~
as if it had been ~~of~~ ~~the~~ ~~solid~~ ~~of~~
mass ~~of~~ ~~the~~ ~~discovery~~ ~~of~~ ~~the~~
Grand Echo ~~at~~ ~~the~~ ~~point~~ -

As we landed & drew up our boats the dusky
tints of evening had set in, & we soon found
it necessary to protect us the mosquitoes
nets we had brought with us -

Images were to be lit in different places
& ~~some clouds of smoke rose from~~
~~scattered along the~~ to help to keep off
the flies which had attacked us, ~~the~~
the moment we landed, & surely they
must have thought us great sorcerers
by the way in which ~~the~~ judges from
the nations in which they encircle
us ~~turned~~ ~~flowed~~ in ~~acted~~ ~~deserve~~
bit, a few minutes more &
our tent was securely pitched; &
having prepared & finished our
first meal, we curled ourselves
under its canopy - And now ye
inside sportsmen - ye who laugh
a mosquito & dark black flies
to hinder your repose, share with
us one tent this first night -

is if you sleep as the weary man
- if your dreams run on regardless
of the blackflies & the mosquitoes
then we will indeed envy you -
~~Although blankets covered our bodies~~
~~& success was~~ Although snugly tucked
in with blankets, with our faces covered
by nets forest nets, bright on
Midnight found us far from
the land of dreams, or of any
~~sleep~~ ^{sleep} ~~it was~~ to dream of
swarms of mosquitoes & sand flies -
or of ~~any~~ ^{or} ~~any~~ ^{any} ~~sleep~~ ^{sleep} ~~but~~
to sleep by the music of the
hum of the mosquito, it was
only to start dream of swarms of
stinging blackflies - The minute
black flies seemed to have beall
over us, having crawled up our legs
& under our clothes; ~~our~~ nets
proof for mosquitoes were
wides to again these smaller flies -

Shortly after midnight a general
we a general one decided to place
from the tent & we took shelter
again in lee of some ferns -
Having tried all on this occasion
we ~~can account it as being a~~
~~in our sleep.~~ ~~of this~~ we can
found it immediately ^{with} ~~retreated~~ us
of the flies but only while it
is only by keeping eyes ~~on~~ ~~down~~
that it does on the skin. Thus
we were as much exposed as before -
But morning at last came
& with it our misery ceased.
This fortunately, was the only night
we were annoyed, cold heavy
nights set in, & these pests
retired to their swarms the
~~coming this~~. A trail row from
the camp brought us to the one
of the fishing grounds - an inlet
called Rocky inlet - Number

of brook & Salmon Trout are
caught here, more of the former
however than the latter -

The average Trout are not
so very large here & the being
above the average - The outlets
at the ^{end} of the lake are
perhaps about the best fishing
grounds - From one of these outlets
the first day we carried home
180 Trout good sized Trout -

During the winter months Trout
are caught here, by John Robb
in the ice & sent to some
of the village markets -

a sail up one of the curious outlets at
the end head of the lake is wide
with a winter time, the scenery is
~~strangely~~ singularly strange. On
either side are patches of these
strange forest dead trees, some
of them overhanging & bending

into the stream, which some
are partly submerged & covered
with slimy snags - ~~Small birds~~
~~come out of the water in every direction~~
~~These birds lead to some measure~~
~~known as the 3 Purple Rusty~~
Grackles fly in large flocks from
tree to tree with ^{illuminating} harsh discordant
cries, ~~to~~ ~~take~~ & now & again the
lonely Bottom rises from the swamps
with his dismal croak - Heron
Kites ~~can~~ ~~be~~ ~~seen~~ ~~at~~ ~~circle~~ ~~over~~ ~~them~~
in search of the frog or old waterfowl
on the ~~tree tops~~ - ~~in~~ ~~the~~ ~~branches~~ -
This can be enjoyed by one who has
delight to see Nature in her
wilds, but let him see that
night does not catch him in
those swampy grounds, as here
the Murrelets & Black Gulls occupy
the summit - Far up at the top
of these hills you can see the

meadows known as Beaver meadows,
~~and some very fine grass for cattle~~
~~is grown & collected by the~~
(The deer we have taken in this
lake belong to the species called
the Virginian deer.)

They are taken during fall either
by driving them to the lake or
by night hunts - we had
an opportunity for both in both
ways) - The most exciting sport
however, without doubt is the deer
chase in the deer. ~~At the~~ With
boats well placed a good guide &
dog you stand a very fair chance

of getting one - Driving them
to the lake is the best mode
of taking them ~~to eat~~ during fall -
It was the one morning after breakfast
we set the dog ashore towards
the West inlet, & a mile one boat
watched them another one was

passed some distance off the
dry a point of land - Let the guide
enter the forest & follow the
dry as rapidly as possible until
the a trunk is hit, he then returns
to the boat one of the boats &
close water is kept over the lake
with gloves - This day our clew
took us in, for when started
instead of making for our lake
he stretched off to the Bigg lake
some 8 miles distant - This
is one of the difficulties to be met
with in driving the clew ~~to~~
~~our next~~ Possession, however
we arranged another hunt &
~~to~~ were secured as last time
with different position - Soon
the go home gave tongue & as he
took up a fresh track & then all was
quiet But ~~with~~ what mean
~~that~~ ~~our~~ ~~having~~ waited some

time we had begun to do part of
~~the~~ sport, when suddenly a
distinct plunge is heard in the lake
& directing our streaming eyes in
that direction we see a noble deer
leaving the shore & making for the other
side - We are all impatient for
a start, but a motion from the
guide quiets us - Ah! now he
turns in again for the shore, for
we again ~~to be in a position~~ have
a deer after us, or far -
No, ~~see~~ the guide during the
movement is jump above & strike
off at a briskness swift but
obediently - ~~Pass~~ The deer
is within a few yards of the
shore when suddenly ~~the~~
comes from the woods a pine
breaking & the poor creature
again turning on either side
across the lake,

Now a few minutes & we can cut off
his retreat. Our row is gone, but we
must make the best of it. At last
I strain every nerve we dash upon
upon the deer, who ~~is~~ swimming
~~to last~~ - which has now gained
the middle of the lake & is moving
very rapidly. Heave & heave we
come to draw, ~~to what we can see~~
~~the few logs of the timber we are~~
within very nigh range, but as being
to make our own prize we keep
on working. The boat jumps through
the water. One pull more & the
deer are pulled in, & a double barrel
gun is brought to bear on the deer
now within half range, a short
report again makes the mountain
re-echo, & the animal with a
plump sinks. ~~At half an hour~~
~~elapsed before it was in the corner~~
of Yan Dan. A run to the dust on

When it was taken in the boat
& brought to the camp, so here in
one time it was alone & being
altogether out of harm's way -
There the deer in this vicinity
belong to are the Virginian deer
(Cervus Virginianus) The only species
which ranges into Canada of this genus
as their colors vary with the
seasons; in the winter it is slate
gray, in spring reddish, in summer
again gray - Another very good
way of taking the deer, is by torch
hunting at night - During our
winter stay, camping however the
torches were too bright for any
thing of the kind to be carried
on successfully - But for
the matter we saw three of the
thing, so far as I know three of us
had determined on trying it

Embarking at about half past ten
one very bright cold night, we started
off through the mist which had
gathered over the lake - One in
the stern paddled while two
others sat rolled up in fags gun
in hand - Keeping close ^{to the} ~~the~~
shore we wound in & out at the
shore ran - a short distance
from the Camp we started a
skiff, in which after went wandering
off into the woods - Reaching
the inlet we pushed slowly up -
It was very cold & dewy, perhaps
& every thing around looked
thick & cheer - How long have
we continued in this manner
How far we went up I am unable
to say, as the blunt splash of
the paddle ~~fell~~ ^{set} ~~the~~ ^{the} night
air had lulled me to sleep -
~~However no game was visible~~

~~At~~ We did not see any ^{thing}
in the inlet, except some wild
fowl which flew up with a hummer
whir & fairly swarmed one -
When the night was warm
& only some clouds of thin come to
darken the inlet, to feed upon
the lily pads & to escape the
flies which fairly drove them
to the water - Got On there occasion
of a boat proceed up the inlet
carrying a hunter, some good
shots may be obtained, as the
deer stand grazing at the light
as if starved for - Great numbers
are taken ⁱⁿ this way ^{or} during
some seasons - At last the
day arrived that we must prepare
to encamp, & having gathered
up our furs, & filled our
buckets with fresh trout & grass
with grass, we start down

The Lake - ~~Blue & Raven~~ are
pretty common ~~Shallop~~ Lake, indeed
they seem to take the ~~old~~ ~~iron~~
place, as few if any of the latter
species are seen. ~~They are very~~
~~rare, but have often taken in~~
~~Canada~~ - The Iron ~~is~~
seldom ~~seen~~ in the vicinity
of our city. As we sailed
along the lower lake a large
Blue Heron

- a bird ~~was~~ seen all along
the lake - flew up from the
near shore, a lucky shot just
in time brought him to the
water & after a ~~long~~ fierce
struggle was hauled by the
net on board - He was
only slightly wounded in the
wings & a shot grazing his
head had ~~slightly~~ stunned him -

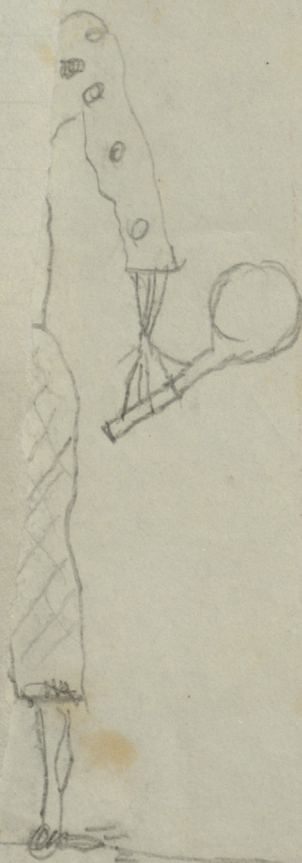
We laid him in the bottom of
the boat muffled in a large sheet
but Jim he did not at all believe
the manifesstion for them, by disengaging
himself from his side & diving
into the water - Again he was
captured & a line coming across as to
whether he should be killed or
taken down alive, the latter
was determined on - luckily for
him - & we carried him he
was again pinioned - reaching
the end of the lake we
again to get the wagon & in a
few hours reached the
station - No sooner on foot
the dogs than the boat
took entertainment all the
morning by ferocious outcries
remotely killing all the
bark of specimens -

A little later in the evening
I was ~~missing~~ ~~and~~ ~~was~~
~~over~~ ~~Monday~~ ~~afternoon~~ & we
were ~~coming~~ ~~back~~ ~~again~~ ~~back~~
in the village of C. & V. making
our ~~room~~ ~~in~~ ~~the~~ ~~new~~ ~~house~~
new house - Here, ^{in a short time} he seemed
to make himself quite at
~~home~~ ~~and~~ ~~was~~ ~~allowed~~ ~~to~~ ~~be~~
to ~~take~~ ~~his~~ ~~own~~ ~~place~~ ~~in~~ ~~the~~ ~~vicinity~~
of a ~~cave~~ ~~with~~ ~~a~~ ~~big~~ ~~stone~~
latchet ~~to~~ ~~his~~ ~~side~~ -
He ~~seemed~~ ~~to~~ ~~be~~ ~~going~~ ~~quite~~
~~home~~ ~~and~~ ~~one~~ ~~day~~ ~~a~~ ~~few~~ ~~weeks~~
~~after~~ ~~his~~ ~~return~~ ~~to~~ ~~the~~ ~~house~~ ~~he~~ ~~did~~ ~~not~~
remain a ~~moment~~ ~~of~~ ~~our~~
Lake trip for a few weeks, & then
~~and~~ ~~so~~ ~~but~~ ~~finally~~ ~~managed~~ ~~to~~
unfortunate ~~circumstances~~ & ~~died~~ ~~off~~
- I guess with a ~~brain~~ ~~infection~~
in his ~~rich~~ ~~mountain~~

Invented by
D. Bennett

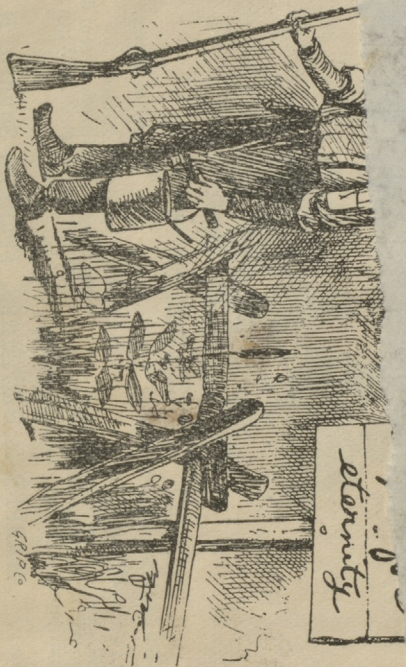
BARWOODS PAPER (who has just finished the sign):—I kinder like the idee, somehow 'r other. It has 'r religious teelin' runnin' through it, an' at the same time means business!





Invited by
D. Bennett

BACKWOODS FARRAR (*who* has just finished the sign):—I kinder like the idee, somehow 'r other. It has 'r religious feelin' runnin' through it, an' at the same time means business!



Chemistry -



