JOLTS AND JINGLES
By Ad Brown

When the baby goes to sleep
   There is quiet about the place
'Sif the mouth of fate were 'sssh-ing'
   At the entire human race.

Father doesn't dare to rumple
   Up the paper; there he stands.
Brother, awful red, succeeds in
   Choking sneezes in his hands.

Bime-by mother's sure to whisper
   While her eyes look into mine:
"Did you notice, dear, that baby
   Went to sleep tonight, just fine."

Verify This, Doubters.

A. G. B. Bouquet is professor of
horticulture at Corvallis.

Again, note that a man who had
another arrested for swatting him is
named Swatzel.

Roosevelt is demanding the right
of privacy. Can't be the same old
Ted.

A Turbulent Life.

To train his life to melody
   Decided Mr. Long;
But later he discovered he
   Had snagged a rag time song.

Epitaphs.

The only reason
   I am here
A hunter took
   Me for a deer.
            —Detroit Free Press.

The only reason
   I am dead,
I ate "hot dogs,"
   Then went to bed.
      —Birmingham Age-Herald.

The reason why
   My grave is green,
I lit the fire
   With kerosene.
            —Louisville Post.

The reason I
   Am in my tomb
A toadstool looked
   Like a mushroom.
            —Houston Post.

The reason I
   Am now no more
Is 'cose they wouldn't
   Shut the door.
            —Chico Charley.

The reason I
   Am going fast;
I read these poems
   Clear to the last.

COMMUNICATIONS.

Opinion of a Taxpayer in First Ward.

I have known L. G. Porter for five
years and will say I can recommend
him for councilman in First ward, for
what is his interest is ours, as he
is a heavy taxpayer and property
owner, having paid more street pav-
ing and sewer and water assessment
than any other man in Medford. Fur-
thermore, Mr. Porter has plenty of
time to devote to the duties of this
office. Why vote for a man who has
no time to spare away from their own
duties and work.   A TAXPAYER.

Hoskins for health.

THE CITY ELECTION.

TOMORROW'S city election is important and every
citizen who has the welfare of Medford at heart
should be on deck to vote for the best man. Who this
"best man" may be, is not difficult, in most cases, to
decide.

The most important office to be filled is that of re-
corder, and there is no doubt in the world that R. W.
Telfer is not only the best man available, but the best
city recorder Medford ever had. The city's books are in
better shape and affairs are better conducted than ever
before. Mr. Telfer's reelection is essential for the con-
tinuance of a business administration.

The same observations can be made with reference
to the city treasureship. Gus H. Samuels, the present
deputy treasurer, who has proved his capacity and effi-
ciency, should be elected without question.

For councilman in the first ward are J. W. Mitchell,
L. G. Porter and Frank B. Sankey. The latter is the
socialist nominee. Both Mr. Mitchell and Mr. Porter are
well known citizens and either would make a good coun-
cilman.

In the second ward E. C. Ireland, P. E. Wynkoop and
Isaac M. Thomas are candidates. The latter is the social-
ist nominee. Both Messrs. Ireland and Wynkoop have a
loyal following. Mr. Ireland has been identified with all
progressive movements since his residence here and will
undoubtedly make an excellent councilman.

In the third ward the choice lies between J. T.
Summerville and his socialist opponent, D. C. White. Mr.
Summerville ought to be elected.

The Mail Tribune is opposed to the introduction of
political parties and factional strife in municipal affairs—
therefore it opposes the election of socialists as Socialists
just as it would oppose the election of republicans and
democrats as partisans.

The socialist candidate is under a worse handicap than
any other political party in America ever imposed. He
must write out his resignation in advance and give it to
his "local" to present any time his course fails to meet
approval of the ruling clique. His individual judgment
and initiative is paralyzed from the start—he is reduced
to the position of a mere automaton to carry out the will
of the "local"—not of the people as expressed at the
polls. It is virtually a restoration of the outgrown tyran-
nical government by guilds that flourished during the
middle ages.

There are many excellent things about socialism, many
ideas bound to spread, but this political organization, sim-
ilar in principal to that which governed during the reign
of terror during the French revolution, is not one of them.

As well elect phonographs to office as socialists—for
all the individuality or latitude allowed the candidate.

A Test of Fuel Oils

By P. J. O'GARA.

Pathologist and Special Meteorological Observer U. S. Weather Bureau.
(Continued from last Saturday.)

This loss was all the way from 8 per cent to nearly 50 per cent. The
average loss in the one-gallon Bolton and lard pail type of heater was
somewhat more than 12 per cent. In the two-gallon type it was between
8 and 9 per cent. If the crude oil could be laid down for 4 cents per gallon,
the high percentage of loss in burning would make the actual cost greater
than that of the better grades of fuel oil. The difficulty in handling crude
oil should not be overlooked. It is variously estimated by those who have
worked with both crude oil and the distillates that the cost of handling
the crude oil is fully one-third more than that of the lighter oils. The
worst difficulty, and the most serious, is its poor burning qualities which
tend to leave so much residue in the fuel pots that their capacity for
future fillings is reduced. At best, a pot holding only a gallon in this test
will burn from three and a half to four hours. After the three-hour
period is passed the efficiency is not high. Where there may be two or
three nights of low temperature following each other, the orchardist has
no time to stop to clean his heaters. It is usually a task to refill the pots
without having to stop to clean them.

What It Will Cost to Heat an Acre of Orchard.

The answer to the question as to what it will cost to heat an acre of
orchard is quite as easy to answer as to tell how far a bird will fly. The
only thing that we can give in the way of an answer is the cost per unit
of time. With an orchard having, say 50 pots of one-gallon capacity
burning at one time, we know that the fuel consumption is not far from
two pounds of fuel oil per hour per heater, or 100 pounds total per hour
per acre. If the fuel is Richmond smudge oil, which weighs 7.84 pounds
per gallon, the quantity of oil consumed per hour per acre will not be
far from 12½ gallons, which, with an orchard of old trees covering most
of the ground, will be sufficient to keep the temperature about five degrees
higher than that of the incoming cold air. In a young orchard this
quantity of fuel will not raise the temperature much more than a couple
of degrees, and if there be an air movement of two to three miles per
hour, very little temperature rise will be experienced. The quantity of
fuel oil which may be burned in any unit of time will depend upon the
size of the orchard heater. This has been shown in another part of the
bulletin. In considering the quantity of fuel oil burned in the above
example, it is understood that the fuel pot used has a top diameter such
that the area is about 44 square inches. It has been found that fuel oil
if not too light gravity will burn from such a surface at an average rate
of about two pounds per hour. In considering the use of such heaters as
have larger areas, it will be understood that they will consume oil at a
much greater rate. In the adjustable types the rate may be made anything
from practically zero to the maximum, which in the case of the Hamilton,
with the cover drawn, will be as high as 8 to 10 pounds or more per
hour. It is the unit surface, therefore, that we are considering; a surface
of 44 square inches, which is about what we find in the 10-pound lard pail
and the one-gallon Bolton types.

Disregarding the cost of distributing the oil, which will depend very
much on the facilities for handling it, as well as distance necessary to haul
it from the tank car, we may say that, with fuel oil costing 4 cents per
gallon f. o. b. Medford, each one gallon fuel pot will burn one cent's worth
of oil per hour. Now, since it will cost one cent per hour to run a one-
gallon heater, it is easy to calculate how much it will cost per hour per
acre for any number of heaters. The total cost per acre for any night's
heating will, therefore, depend upon the temperature to be maintained,
as well as the number of hours necessary to continue the heating. Under
our conditions, four hours is about the maximum length of time, and the
number of pots per acre will run all the way from 50 to 125 per acre,
depending not only upon the age of the trees but the location of the
orchard. We know that temperatures invariably reach a lower point in
some orchards than they do in others because of elevation and air drain-
age. Although it is to be understood that a sufficient number of orchard
heaters should be on hand to meet any emergency, only the number
actually needed to maintain the temperature above the danger point
should be lighted. The practice in the past is to begin by lighting, say,
every other or even every third heater, leaving the rest in re-

serve. This plan permits of increasing the quantity of heat given out to
the maximum when it is needed.

The Value of a Heavy Smudge to Hold the Heat.

The discussion so far has considered mainly the value of fuel oil
from the standpoint of heating. It may be said, however, that there is
some value in the smoke, but much less than there is in the heat. When
it is calm, there is little difficulty in maintaining a heavy smudge when
only 50 one-gallon pots are burning per acre, but a very light breeze
will quickly drive it away. In our experience, the smudge has been
valuable where the temperature dropped somewhat below the danger
point the time the sun rose. In a case of this kind, the smoke acted as a
screen and prevented the too sudden warming up of the frozen fruit. We
have found that to depend upon smudge alone will not do.

Law of Burning for Lard Pail and Bolton Types of Orchard Heaters.

During the course of the experiments a very interesting law of burning,
or rather fuel consumption, in the common lard pail and Bolton types of
orchard heaters was worked out. As a matter of fact, the law applies to
all pots which have the general form of a frustrum of a cone. In this
class we find the lard pail, Bolton, and Hamilton Competition of the various
capacities. It is shown that the rate of fuel consumption in pots of the
same type is not directly proportional to the diameters of the tops of the
pots, or areas of the surface of the oil exposed to the air. The form of
the pot, that is to say, its several dimensions, must be considered. With
clean pots, burning the same oil under the same conditions, it is found
that the time required to consume one gallon of fuel oil in the one-gallon
pot is to the time required to consume one gallon in the two-gallon pot
as the square of the product of the mean of the top and bottom diam-
eters times the depth of the two-gallon pot is to the square of the product
of the mean of the top and bottom diameters times the depth of the one-
gallon pot. In other words, the time of burning a unit quantity of fuel
oil in the one and two gallon pots as used in the experiments is inversely
proportional to the squares of their dimensions. This law may be stated
in a more concise way: For fuel pots of the general form of a frustrum
of a cone, but of varying dimensions and capacities, such as the one and
two gallon Bolton and lard pail types, the square of the product of the
mean of the top and bottom diameters times the depth multiplied by the
time of burning a unit quantity of fuel oil (one gallon) is a constant.
It must not be understood that this law will give the exact
burning time of the type of pot which is too much out of pro-
portion as to diameter of pot and depth; but for the Bolton and lard pail
types it seems to be fairly accurate, providing the same fuel is burned
under exactly similar conditions. In practice it is not so easy to determine
the total effective burning time of a pot; this can only be found by having
the burning pot on a scales, thereby noting the decrease in weight. A
mere flicker in the bottom of a pot should not be considered in calculating
burning time.

The law of burning as stated above may be given in formula as follows:
Let "t" be the burning time of one gallon in a one-gallon pot.
Let "T" be the burning time of one gallon in a two-gallon pot.
Let "d" be the mean of the top and bottom diameters of the one-gallon
pot.
Let "D" be the mean of the top and bottom diameters of the two-
gallon pot.
Let "h" be the depth of the one-gallon pot.
Let "H" be the depth of the two-gallon pot.
Then, according to the law as stated, t:T::(DH) squared : (dh)
squared or t(dh) squared equals T(DH) squared, equals K (a constant).
For those who may wish to see how closely the law coincides with
practice, we will give the following, the data for which has been taken
from our experiments. The dimensions of the one-gallon and two-gallon
lard pail and Bolton heaters as used in the experiments are:

Diameter of top of one-gallon heater, 7½ inches.
Diameter of bottom of one-gallon heater, 6 inches.
Mean diameter of one-gallon heater, 6 3-4 inches.
Depth of one-gallon heater, 8 inches.
Diameter of top of two-gallon heater, 9 3-4 inches.
Diameter of bottom of two-gallon heater, 8¼ inches.
Mean diameter of two-gallon heater, 9 inches.
Depth of two-gallon heater, 9 inches.

Observed Burning Time Compared with Burning Time Calculated from
Formula. Lard Pail One and Two Gallon Heaters.

TABLE 20.

Fuels	Observed burning time of one-gal. lard pail heater	Observed burning time in 2-gal. lard pail heater	Burning time of one gal. of pail heater calculated from formula
Stove Distillate...	3 hours, 20 minutes	1 hour, 50 minutes	1 hour, 33 minutes
Slop Distillate....	2 " 47 "	4 " 45 "	2 " 41 "
Richmond oil......	2 " 20 "	4 " 12½ "	2 " 7 "
Crude oil..........	2 " 00 "	3 " 37 "	1 " 52 "

Bolton One and Two Gallon Heaters.
TABLE 21.

Fuels	Observed burning time of one-gal. Bolton heater	Observed burning time in 2-gal. Bol-heater	Burning time of one-gal Bolton heater calculated from formula
Stove Distillate...	3 hours, 20 minutes	1 hour, 50 minutes	1 hour, 29 minutes
Slop Distillate....	2 " 45 "	4 " 42½ "	2 " 49 "
Richmond oil......	2 " 00 "	4 " 25 "	2 " 40 "
Crude oil..........	2 " 45 "	3 " 16 "	2 " 00 "

It must be understood that the law considers the fuel pots burning
without any device for cutting down the burning surface. The soot ar-
rester causes the burning time to vary very widely. With fuel pots of
the lard pail group, the time of burning a unit quantity of oil in any pot
larger than the standard, the one-gallon size, which is here taken as the
unit, may be calculated very closely by the formula. As a rule the results
will be within ten minutes of the actual time required to burn the unit
quantity, namely, one gallon. It is very difficult to keep conditions always
the same in a field test; slight wind currents will have a great deal to do
with the burning time of any fuel. The only fuel which did not give re-
sults fairly in accord with the burning law is the crude oil burned in
the Bolton heater; this is on account of its poor burning qualities. All
the other fuels agreed very closely with the law.

Summary.

1. The fuel oil most practical for orchard heating is one which is
neither of too heavy nor too light gravity. The light gravity oil is usually
high in price, and, together with its light weight and rapid burning, is too
expensive. The heavy gravity oil does not burn clean, the amount of
residuum left as waste often running from 12 to 40 per cent. It is dif-
ficult to handle at low temperatures, costing fully one-third more for
labor as compared with the lighter oils. The residuum left reduces the
capacity of the heater for future filling. This shortens the burning time.
The oil which has given the best results is one of about 19 to 20 Beaume,
namely, the Richmond Smudge Oil. The slop distillate has given prac-
tically the same results with the exception that in the past some little
water has been found in it. The price of these oils is such that it will
cost about one cent per hour for burning in the one-gallon or any other
heater having a top area of 44 square inches and not provided with any
soot arresting device.

(To Be Continued.)