Passing of Summer

As we gaze upon the sunset,
Moving farther to the west,
Thus, we know the summers passing,
And we've really seen it's best.
Blossoms from the trees have fallen,
Soon the swallow soaring o'er us
Will be leaving with the rest.

Every year seems to be shorter,
As we move toward old age,
And we see life's end draw closer,
As we turn another page,
We should look into the future,
With a true and upright heart,
For in the days that lie behind us,
We have failed to do our part.

We have oft stood at the crossroads
Wondering which way for to go,
Many times we took the wrong way
Which lead us to fear and woe,
Looking for some earthly pleasure,
That so quickly passed away,
And by doing so, how often
Lead some other soul astray.

O, how oft we look with sorrow,
Back to childhood's happy days,
If we could but live life over,
We would gladly change our ways.
But we can't erase our footmarks
From the low and burning sand,
We can only ask forgiveness
As we come to journeys' end.

If we try and fight life's battles,
We'll not wander very far,
And at the end of our short journey
There'll be no meaning of the bar,
All the past will be forgotten,
Sin and tears will be no more,
For this Earth will lose it's sorrows
When we reach the other shore.

Life is not a bed of roses,
As we travel through the years,
You will often be discouraged,
In so much 'twill cause you tears,
But you should not be downhearted
Try again the good old way,
Just another step will give you
Joy no man can take away.

So now, as the summer passes
With the harvest drawing nigh
Let us work with faith and courage
While the sun is in the sky.
For soon our labours will be over,
And the sunwill shine no more,
Keep your eye upon the portal
Just beyond the other shore.

—J. Wellington Thomas,
North Tryon, P E I.

CANDID CAMERA SUPPLIES TIP

Camera fans will be intrigued by the novel use of a miniature camera when they see PRC's comedy-drama "I Ring Doorbells," coming today to the Capitol Theatre.

Roscoe Karns, ace comic, plays a veteran news-photog, and with his pal the star reporter introduces a small camera with infra-red film into a lady's parlor.

Lovely Ann Gwynne handles the feminine lead opposite Robert Shayne. He's the reporter and she's the feature writer and his girl friend.

The supporting cast carries such stellar actors as John Eldredge, Harry Shannon and Pierre Watkin. The film, adapted from the Russell Birdwell novel of the same name, was directed by Frank Strayer.

WATER FROM THAMES FOR ATOMIC TESTS

LONDON, Aug. 2—(CP)—Subject to conditions imposed by the Thames Conservators, Britain's new research laboratory at Harwell, Berkshire, is to be allowed to use water from the river for its atomic experiments.

The laboratory is being permitted to withdraw 1,000,000 gallons daily from the river, whose average dry weather flow at the point is 40,000,000 gallons.

However, the water can be taken only during a specified 10-hour period. Water returning to the river must be purified and all radio-active elements, which might be dangerous, removed.

The laboratory will be required to pay the conservators $562.50 every $1.125 should it exceed that volume. tion is less than 500,000 gallons and six months if the average extrac-

VAPOUR BARRIER

An Article of Especial Value To The Small Home Builder

Issued under the authority of
HON. C. D. HOWE
Minister of Reconstruction and Supply

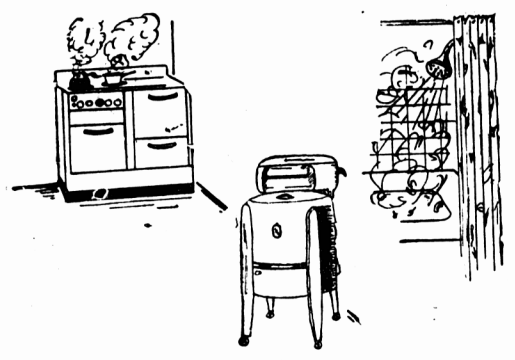
INTRODUCTORY

This article was produced by the Research and Development Branch of the Department of Reconstruction and Supply for the use of the Regional Representatives in their technical liaison work. The information contained herein is based on previous work, most of which has been published in the form of technical and scientific papers or as technical bulletins.

This article received through the courtesy of Mr. Peter G. Clark, Chairman P E I Regional Reconstruction Council, is an attempt to outline the problem in terms that may be more readily understood by the general contractor and small home builder.

VAPOUR BARRIER

In recent years technical developments in building construction have contributed much, in most communities, to the comfort of the householder. Tighter construction, double-glazing, storm doors and windows weatherstripping, insulation, caulking, automatically controlled heat sources, controlled ventilation and air conditioning, with the accompanying increase in relative humidity, have all been instrumental in improving living condition. These same measures, however, when not properly co-

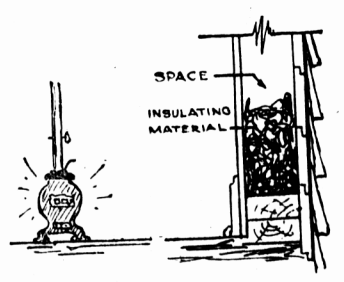


ordinated with the other aspects of building construction, may lead to undesirable conditions within the wall structure which, although they might easily have been overcome during construction, can only be corrected with difficulty at a later stage.

The possibility that water vapour may condense within the outside walls of houses is now well known but although the causes and effects are apparent to the scientist the application of this knowledge in the past has been very limited. A striking example of the effect of this vapour condensation may be found in many of the older residences where automatic oil-burning equipment was installed. It was found that it was impossible to control the temperature within close enough ranges due to excessive heat losses through the walls. Thermostats would cut off the heat supply with a room temperature of say, 74 d.F. and would come back in at 68 d.F. but before the furnace could pick up the load, particularly in cold weather, the temperature would be down to 60 d.F. This caused a condition of variable heating with the temperature bouncing between 60 d.F. and 75 d.F. The immediate solution was to fill any space in the outside wall with a loose-fill insulation either blown in or poured. This improved the termal conductivity of the wall to such a marked extent that sufficient heat was retained in the home to allow a very efficient control of temperature with the previous equipment.

The conditions were so good that the home owners decided to add air conditioning to the system and among other things, began to humidify the air. In addition to that commonly supplied by household tasks, such as cooking, washing and bathing, moisture was artificially added to the interior atmosphere with the result that the relative humidity was much higher than that which would have existed if natural laws had been allowed to run their course. The conditions of living comfort were excellent for a year or two when the control of the temperature became more and more difficult, particularly after one or two cold seasons. Of course, the oil burner was blamed and much time and energy was expended upon attempts at regulating controls and checking equipment.

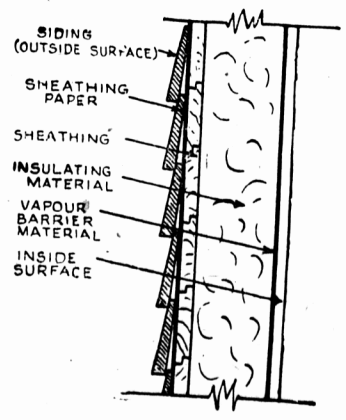
Finally a check was made of the wall structure and it was found that a large portion of the insulation till had become soaked and had settled to the lower portion of the stud space. It was immediately evident that the problem was back to where it had started. Much of the wall area was again



uninsulated and the insulating material in the bottom was in a condition conducive to vermin infestation and general rotting as well as having lost some of its insulation qualities due to absorption of water.

Such drastic conditions as those outlined above are probably not common but they do indicate the necessity for a co-ordinated study of water vapour condensation.

The installation of a vapour barrier on the inside, or warm side of the insulation in new construction is simple and comparatively inexpensive. The barrier must, however, have the proper water vapour permeability. (The amount of water vapor passing through one square metre per 24 hours per mm. of mercury difference in water vapour pressure must be less than 0.5 grams.) The barrier must also be properly installed.



An international standard for the terms of stating this "permeability factor" has not as yet been set. One American group uses the term "grains of water vapour per hour per square foot per inch of mercury different of water vapour pressure". The vapour barrier standard recommended above, expressed in these terms is 0.75. The units in which this factor is expressed must always be taken into consideration when vapour barriers are discussed.

It is most important that the vapour barrier be installed as a continuous layer. Cracks, tears or breaks cause the barrier to become inefficient and unsatisfactory.

In old construction, condensation in the walls may be reduced by painting of the inside surface (particularly with metallic paint) or by the application of a vapour barrier underneath the wall paper. Acceptable vapour barrirs are usually asphalt-impregnated and surface coated building papers, laminated paper or laminated foil-kraft papers.

SUMMARY

Vapour barriers properly installed on the warm side of the insulating material are the best means of preventing condensation of water vapour. Material resistant to wind and water but permeable to water vapour should be used on the outside. Ventilation of the attic spaces is necessary and is desirable for the outside wall spaces.

Vapour barriers will not prevent condensation on the inside surface of poorly constructed or uninsulated walls. Condensation occurs in this case because the inside surface becomes so cold that the condensation point, or dew point temperature, is reached.

RECOMMENDATIONS

Advice to the Manufacturer

Ensure that the manufacturing process is under controlled conditions, sufficiently accurate to produce a material with the minimum recommended requirements for water vapour permeability (0.5 grams sq. m. 24 hr. mm. Hg.)

Arrange for tests at least annually from random samples of the product by an approved test laboratory and refer to these results and the date of test.

Advice to the Dealer

See that the product being sold is backed by manufacturing processes that will ensure a uniform product.

Ensure that the product being sold is back by annual approved test results made on random market samples by a recognized laboratory.

Advice to the Home Builder and Owner

Ensure that the vapour barrier material purchased and used is backed by recent (within one year) test results from an approved laboratory that show a product that has the recommended minimums, or better, water vapour permeability (i.e. 0.5 grams sq. m. 24 hr. mm. Hg or less.)

Ensure (and this is most important) that the installation is done carefully and that no cracks tears or breaks are left unsealed.

Methods other than the use of a vapour barrier material to reduce or eliminate vapour condensation within a wall space are briefly described below and although they are possible solutions they are usually impractical.

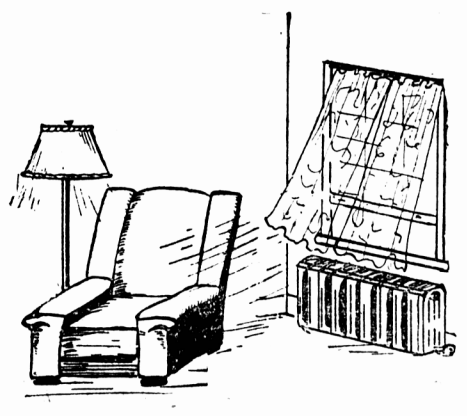
Frequent Air Changes

Condensation may be prevented by keeping the inside water vapour pressure low enough so that the difference in pressure is not great enough to cause appreciable amounts of water vapour to enter the walls and ceilings. This could be accomplished by the circulation of sufficient air from the outside through the house so that the vapour pressures inside and outside remain nearly equal. This is neither desirable nor practical under Canadian climatic conditions, in fact modern ideas of comfort and efficiency suggest the advisability of adding some moisture to winter air.

Permeable Wall Structure plus Ventilation

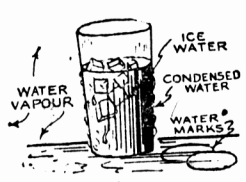
The use of material readily permeable to the transmission of water vapour on the outside of the walls helps prevent water condensation. This allows water vapour that may have entered the walls to pass more readily to the outside atmosphere. Outside building paper should be such that water vapour passes readily and yet is reasonably effective against wind and wind-driven rain or snow. Such papers as felts, resin-sized, tar papers or asbestos papers are recommended. (See Series H., Number 2, Sheathing Papers.)

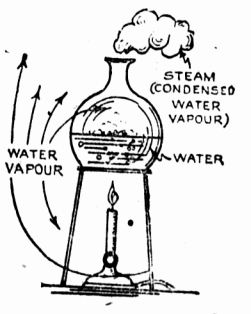
Ventilation of the outside wall cavity and particularly the attic spaces is desirable.



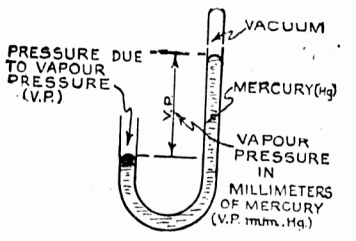
VAPOUR CONDENSATION
Causes and Effects

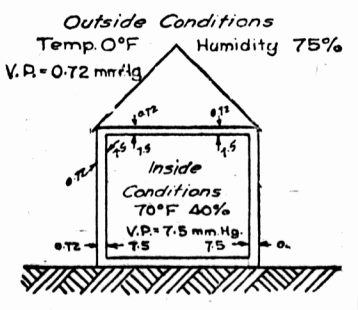
Water vapour is present to some extent in all atmospheres and the quantity is usually expressed in terms of relative humidity. This is an expression of "the ratio of the quantity of water vapour present in the atmosphere to the quantity which would saturate at the existing temperature' As the temperature decreases, the amount of water vapour that may be contained in the air also decreases. Thus air may become saturated by merely lowering its temperature and when the relative humidity becomes 100 percent further lowering of the temperature or the addition of water vapour will cause condensation to occur. The simple illustration shows a cold surface in the example is a glass of ice water. that is below the saturation temperature. This is apparent from the formation of water, or dew, on the surface.





Water vapour is an invisible gas, and like any other gas exerts a pressure. This pressure is measured in inches or millimeters (mm) of mercury. The greater the amount of water vapour in the air, the greater is the water vapour pressure. Whenever we have adjacent areas with different water vapour pressures there will be a tendency to flow in the direction of the low pressure area. This condition arises between the outside and inside of most tightly constructed homes in cold weather. In table 1 the saturated vapour pressure of water at various temperatures is given.

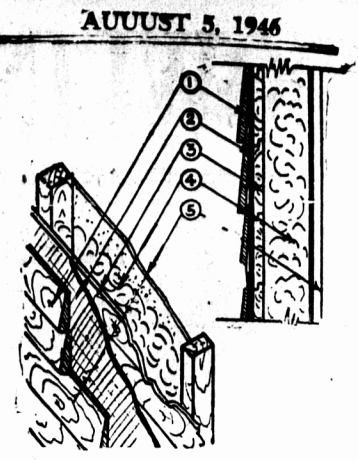




100% RELATIVE HUMIDITY	
Temperature Degrees F.	Pressure Millimeters Hg.
- 10	0.563
4	0.776
0	0.956
2	1.056
3	1.436
32	4.579
70	18.765
85	30.824

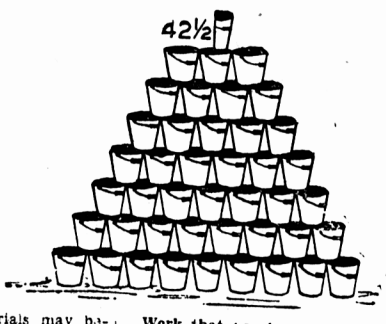
Consider a typical house where vapour condensation is likely to occur, with outside walls constructed as follows: (1) clapboard or brick veneer, (2) building paper (3) sheathing, (4) a space filled with rock wool and (5) a finishing of plaster base and plaster on the inside. With an outside temperature of 0 d.F. and a relative humidity of 75 percent., the water vapour pressure is 0.717 mm. of mercury. If the inside temperature is 70 d.F. and the relative humidity is 40 percent., the water vapour pressure is 7.5 mm. of mercury.

The conditions for flow of water vapour from the inside toward the outside exist and the conditions for condensation of this water vapour within the wall exist.



The temperature at the inside of the sheathing will be slightly higher than the outside temperature, while owing to the insulating qualities of the rock wool, the inside of the plaster will be near the room temperature. At some point within the insulation, the temperature is low enough to cause condensation of the water vapour. Actually the water vapour will, to a large extent, pass through the insulating material, due to its lack of resistance to the movement of water vapour, and will condense at the outside sheathing board. Thus the vapour pressure within the space in the wall is low and is governed by the temperature of the cold surface of the sheathing where the moisture is condensing. The temperature of this surface is dependent on the outside temperature and on the relative insulation values of the different sections of the wall. The greater the difference between outside and inside temperatures the greater is the tendency for water vapour to move, and lower outside temperatures give more severe conditions of condensation.

Calculations have been made of the amount of water vapour that moves through an unprotected wall area under these conditions. In a house 30' x 30' with 8' ceilings 1.43 gallons of water each day will pass into the outer wall. This is approximately 43 gallons of water per month and if we consider a four month period, during which the conditions selected might be expected, it will amount to 170 gallons of water each winter season. Since air at 70 d.F. and 40 percent., humidity has a dew point temperature or temperature at which water will condense, or 40 d.F. it is quite evident that condensation will take place in the wall. Since under the conditions of the example the temperature in the wall area when this condensation does take place is below freezing, ice or frost will be formed. This ice will, of course, melt with a rise in temperature, causing the insulation, if any, to become wet and inefficient as well as often ruining the material. Some materials may become so heavy that they settle to the bottom of the stud space, leaving a portion of the wall uninsulated and setting up conditions in the lower area conducive to rot and vermin infestation.



1.34 gallons of water vapour per day or 160 gallons per season will pass through the ceiling area of this same house, but since it is normal practice to ventilate attics this will usually be dissipated to the outside atmosphere by frequent changes of air. In those attic spaces which are not ventilated, it is quite common to find a very heavy collection of frost on the under surface of the roof. The vapour pressure of the air in the attic space becomes greater than the saturation pressure corresponding to the temperature of the under surface of the roof and condensation occurs, causing water or ice to form on the colder surfaces, which in this case is the inside of the roof. During thawing weather this will melt and either drip down onto the ceiling or run down to where the roof joins the wall.

Work that has been done at the National Research Council indicates that condensation may be prevented in both ceiling area and wall area by applying a material which limits the transmission of water vapour to a specified figure (0.5 gr. 24 hr. sq. m. mm. Hg.). The small amount of water vapour that does go through this material will escape through the wall structure to the atmosphere, assuming of course that no vapour barrier material is used on the outside wall.

Information of a more technical nature on vapour barriers and condensation may be found in the following publications:

"The Diffusion of Water Vapour through Various Building Material", by J D Babbitt, National Research Council of Canada, Ottawa, Ontario (Price 25 cents).

"Condensation Problems in Modern Buildings", February 1939, by L. V Teesdale, Forest Products Laboratory, Madison, Wisconsin, U S A.

EASTERN GUARDIAN

..."GEORGETOWN PROGRESSIVE CONSERVATIVE MEETING—All supporters of the Progressive Conservative Party of the East and West Polls of Georgetown, are requested to attend a meeting in Georgetown Hall on Thursday, Aug. 8th at 8.30 P M Standard Time E.P. MacLaren, Capt. C. Fitzgerald Poll Chairmen.

British Troops End Search In Tel Aviv

By Carter L. Davidson

JERUSALEM, Aug. 2 —(AP)— Police announced tonight the arrest of Itzhak Yesternitsky, described as the No. 2 man in the terrorist Stern gang, and British troops wound up their four-day house-to-house search of Tel Aviv.

Also arrested, it was reported, was Anna Stern, sister of the late Abraham Stern who was founder of the gang as a dissident element of another Jewish underground organization, Irgun Zvai Leumi. It was believed Anna Stern was detained for questioning only, and that she was on the list of wanted Palestine terrorists.

Most of the people of the all-Jewish city of Tel Aviv came swarming from their houses at 3 p. m., when the British authorities ended the four-day curfew which had kept them virtual prisoners while troops carried out the most intensive search for arms and terrorists in the history of Palestine.

As the curfew lifted the people ran out. Bicycles and automobiles raced through the steets, long queues formed at the shops able to open first, and crowds gathered at ice plants, where the hot and thirsty began carrying away huge ice cakes.

During the dragnet, in which every house was searched and every person questioned, the British authorities announced the discovery of an arms cache in the Jewish synagogue and another arsenal in hidden rooms of a boys school.

Several hundred persons were arrested in the search for members of gangs said by Britain to be responsible for the bombing of the King David hotel, which left a toll of 111 persons dead or missing.

By The Canadian Press

Acting Prime Minister St Laurent announced Agriculture Minister Gardiner will head a Canadian delegation to the food and agriculture organization in Copenhagen.

Postmaster General Bertrand announced a new issue of Canadian stamps.

Capt. John Prole (CCF—Regina City) said the government must assume an obligation for the physical deterioration of servicemen after a few weeks of hard drilling.

Second reading was given a bill amending the Veterans Land Act.

The Senate gave third reading to a bill amending the unemployment insurance act.

CARDIGAN PICNIC AUGUST 7th.

"MILDRED PIERCE" OPENS TODAY AT THE PRINCE EDWARD

"Mildred Pierce", Warner Bros.' distinguished production of James Cain's engrossing tale of a tainted life, starring Joan Crawford, Zachary Scott and Jack Carson, opens today at the Prince Edward Theatre. The exciting odyssey of a grass widow, "Mildred Price" provides Joan Crawford with the finest role of her career and audiences with the most absorbing movie experience in years.

"Mildred Pierce" is three-ways great. As a description of mother-love, it is affecting and poignant. It is fascinating, too, as a sharp and accurate what-makes-'em-tick analysis of the soul of a heel. And it is a tense, gripping, superior-caliber murder mystery. Considered in any one of these categories, "Mildred Pierce" would be rated an outstanding film. Successfully blending all three, it is something special for the discriminating movie-goer.