NEWS LETTER

IT IS NOT certain that a man can make opportunities for himself. But he can put himself into such shape that when opportunities come, he will be ready to take advantage of them.

—Theodore Roosevelt.

OCTOBER

1937

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CORTICIUM DISEASE OF TURF

By L. E. Erwin

Rhode Island Experiment Station

Corticium fuciforme has been known in Australia and Great Britain since 1854 as one of the diseases attacking the grass on lawns and golf greens. The first report of **Corticium fuciform** in the United States was from the Rhode Island Agricultural Experiment Station in 1932. Since then the disease has been found throughout New England, while reports from New York, South Carolina, and Oregon show the disease to be present in these areas.

Corticium fuciforme, or pink patch, easily attracts attention by its pinkish fungal growth which occurs in patches or may give a pinkish to red tinge to the grass over whole greens when these patches tend to run together. If examined more closely a red gelatinous growth will be observed on the leaves. The disease is usually seen from May to July, but in some seasons occurs earlier and may persist much later.

The injury done by an attack of **Corticium fuciforme** varies with the condition of the turf and the weather. Sometimes the attack is transient, lasting only a few days to a few weeks, injuring the tips and other portions of the leaves but leaving no apparent permanent or serious injury. At other times the fungus persists in patches which become brown, then bleached and dead. After either of these forms of attack, the fungus remains in the turf, in a more or less dormant condition ready to resume active growth or produce spores for dessimination when weather conditions become favorable.

Greens and lawns in which fescue and poa are the dominant grasses suffer severely from this disease. The more important turf grasses such as the bents are also attacked. All species are attacked and there seems to be little difference in their susceptibility. The fungus occurs on these grasses in their wild state and on species of Bromus and Agropyron. These are common grasses of roadside and fence rows and are commonly present in the fairways and rough of golf courses which serves as a natural source of infection and cannot be removed. In areas where the disease is present the fine turf needs protection against attacks.

Experiments to study the host range of this disease were conducted. The following grasses were used in this test: Kentucky bluegrass, redtop, four strains of creeping bent, two strains of colonial bent, and two strains of velvet. Inoculation studies showed that the above grasses were susceptible to **Corticium fuciforme.** Field observations bear out these results.

The influence of media and acidity was studied. Results obtained showed that the amount, color, and type of mycelial growth differed with the medium used. The best growth was obtained on Beer Wort and Potato Dextrose agar. Acidity tests showed that minimum pH for growth of **C. fuciforme** lies near 3.6, the maximum near 8, and the optimum between 4.5 and 6.2.

Temperature studies showed that the fungus has a growth range from 34° F to 86° F. The optimum temperature for growth lies between 65° and 68° F.

Viability studies showed abnormal temperature and moisture conditions did not kill the fungus. The fungus resumed growth after 10 days at 95° F., when placed under optimum conditions for growth (68° F.). Cultures kept at 46° F. for 90 days grew well when placed at 68° F. Studies also showed that the fungus could withstand drying. Specimens of the sclerotial growth kept in petri dishes at 74° F. and allowed to dry for 18 months grew well when placed on Beer Wort agar and incubated at 68° F.

It has been reported that mercury and mercurial compounds give off vapors which are toxic to plants. Since mercurial compounds are used in the control of turf diseases an experiment was conducted to determine if these vapors were toxic to the fungus **(C. fuciforme)** on the leaves of grass. Metallic mercury, calomel, bichloride, semesan, and calo-clor were used. All materials except the metallic mercury were mixed

with equal parts of blood meal. After 72 hours treatment the sclerotia were removed and plated on Beer Wort and Potato Dextrose agar. The sclerotia plated from the checks grew, while sclerotia from the treated pots failed to show growth.

Natural outbreaks of **C. fuciforme** furnished an opportunity to study the disease in the field. Experiments were conducted on greens using several mercurial materials. These were applied in dry sand and watered in immediately after application. The disease was controlled by applying these materials every 10 days as long as the organism remained active.

Studies conducted on lawns showed that on poor neglected lawns the disease could be controlled by the use of some fertilizer such as sulfate of ammonia or nitrate of soda. On lawns that had received fertilizer in the past the disease was controlled by the use of sulfate of ammonia or nitrate of soda plus some mercurial material. Experiments conducted on highly fertilized lawns and greens showed that the disease could be controlled only by using mercurial materials.

Evidence obtained by means of experiments show that there are three steps in the control of pink patch on greens and lawns: (1) keep the grass actively growing so that it is increasing in vigor; (2) use some type of mercurial materials as a fungicide; (3) proper application of this material. Where grass is grown under suitable conditions of soil and climate, its vigor will be governed by its treatment, especially the feeding. While on poor turf the stimulating nitrogenous fertilizers are an essential factor for improvement, they will not serve such purpose on greens already highly fertilized.

OCTOBER MEETING

The October meeting was held at the Needham Golf Club on the 4th. Fourteen teams played in the Greenkeeper-Greens Chairman best ball tournament, with prizes awarded to the following:

J. Fitzpatrick-F. Kennedy—78-14-64.
F. Wilson-F. Knight—84-18-66.
H. Mosher-H. Hayes—84-16-68.

A medal tournament was also held, with the following winners:

S. Mitchell—98-28-70.
H. Farrant—91-18-73.
A. Anderson—98-24-74.

R. I. ASSOC. MEETING

The Rhode Island Greenkeepers Association met at the Pawtucket Golf Club on October 18th. Discussion at the business meeting was largely concerned with the possibility of obtaining a State appropriation for turf work at the State College. An attempt last year to obtain such an appropriation was unsuccessful, and another attempt will be made at the 1938 session of the Legislature.

The resolutions as adopted in January were again brought out as still applicable to this year's attempt. These resolutions follow:

RESOLUTION

Adopted January 18, 1937
by the
RHODE ISLAND GREENKEEPERS' CLUB

WHEREAS:

1. Numerous problems on turf of home owners, golf courses, airports, cemeteries, parks, athletic fields, institutions such as high schools, public buildings, and the like, develop each season.

2. The home owners, golf course people, and others are heavy tax-payers and should receive information on turf problems.

3. The area in turf around homes owned by 165,000 families is estimated at 8,211 acres. (These figures assume that 50 per cent of the families in the State have no lawn area.)

4. There are about 50 public and private golf courses in Rhode Island.

5. Home owners of the State have been striving for better lawns around their homes, which afford more livable surroundings and furnish an attractive foreground for the home and recreational areas for the children and other members of the family and thus increase the value of any home.

6. Better lawn areas will provide better places of recreation and thus improve the health of the young as well as the older generations.

7. Other turfed areas on which help is needed and for which no data is available include: (1) city parks; (2) school grounds; (3) aviation fields and polo grounds; (4) athletic fields of all sorts; (5) grounds around municipal and county institutions; (6) grounds around state institutions; (7) cemeteries.

8. Only about 5 per cent of the grass seed used in Rhode Island is home grown, and since Rhode Island is a natural grass growing region and also the home of Rhode Island bent grass, it would be very desirable to help advance and further the production of turf grass seed and thus develop this phase of agriculture.

9. For the past forty years, research on turf in Rhode Island has been financed with Federal money and no state funds have been available for this purpose, and it is impossible to carry on certain types of desirable research work with Federal funds.

10. In order that the program of turf research, and service to the people of the State be carried on in a satisfactory manner, it is quite evident that additional funds are necessary and justified when one studies the facts mentioned above.

THEREFORE, be it resolved that we the Rhode Island Greenkeepers' Club go on record as requesting from the Rhode Island State Assembly an appropriation to be used for turf experiments so that more adequate information can be obtained on turf growing and related problems.

NOTICE

The Annual Frolic will be held at the Weston Golf Club, Weston, Mass. on November 6th. Dinner at 6.30, followed by dancing, bowling, and an entertainment. Admission to Member (in good standing as of Nov. 1, 1937) and partner, $1. Guests' admission will be $1.50 per person. Further notice will be sent later to each member.

—Entertainment Com.

TALKS ON TREES

By E. Porter Felt

Director and Chief Entomologist

Stamford, Conn.

Training trees for beauty and vigor is a major aim of the tree expert and abundantly justified in many areas.

Training trees means more than pruning or shaping the top. It should not be limited to the fancy training of the formal garden. It is much less intense though analogous to the training of the athlete of a football squad or a member of a national baseball team. The object in sports is to regulate habits, especially eating and sleeping, so that the athlete may develop maximum skill and ability. This training and regulation is needed because men do not know what is best for them or they are unwilling to regulate their lives without supervision.

The situation in relation to trees is similar. The objective of the tree expert is to see that trees have satisfactory growing conditions, are protected from insect enemies and plant diseases and pruned or treated in such a way that interfering limbs or girdling roots will not cause damage. Athletes require an abundance of nourishing food. The same is true of trees. Athletes must have plenty of sunshine and air. Most trees do best under similar conditions. Athletes must have good respiratory and digestive systems. The leaves of trees perform this function, consequently injury to the foliage by insects or disease means reduced vigor, frequently resulting in an unsatisfactory appearance. The training of athletes is for a relatively short period. The training of trees may cover fifty, a hundred or in some cases five hundred years. The older and larger the trees the more valuable they are and the greater the difficulty of replacing them.

The partly crippled or unsatisfactory tree is a minor incident in most forest areas. Injury to an individual tree in a double row mars the beauty of the entire planting and on the lawn of a large estate it may result in serious and possibly irreparable loss. Trees react like humans to their surroundings and are frequently injured by conditions which can be avoided or corrected at small cost.

Training or care of the more valuable trees in parks and on estates is a necessity in preferred residential areas. It pays large dividends.

Tree roots must have air and if this is suddenly shut off for some reason or other, serious consequences may result.

There came to notice recently a small group of red maples standing in a wet swamp beside a sluggish stream. The trees, as is frequently the case with red maples, stood on little hummocks and between there were lower areas with permanent or semi-permanent pools of water. This piece of property was developed recently, a nice building erected and the surrounding ground filled so as to bring the surface to the level of the mounds upon which the red maples stood. This meant filling several inches to ten or fifteen inches in the areas between, and unfortunately the filling material contained considerable clay. The grading was done during the past winter or early spring and in August the leaves of the trees shrivelled and died.

The injury was especially marked on trees where the filling extended over the entire root area and to a less degree on several trees near the stream with its banks presumably higher and the filling on that side probably less. It is certain that the roots extending to the banks of this stream were not covered to any such degree as those in the area back from the water. The trees where the entire root area had been filled somewhat extensively will probably die in spite of anything that can be done.

The injurious effects of changing grades, particularly raising the grade around trees, can be minimized to a large extent by using a light, gravelly or sandy soil, rather than one containing clay. The latter shuts off the air very effectively and even a relatively small fill with clay may be fatal as in the case mentioned above. The obvious solution of such troubles is to recognize the danger and take adequate precautions, otherwise the trees may be killed before the owner realizes what is happening.

Preventive work, the avoiding of conditions which seriously damage trees, is one of the functions of a tree expert.

Trees, like other living things, are affected by their surroundings. Their condition tells much of the soil and its effects.

It is well known that an oak or a maple standing in the open in rich soil speedily develops into a well-shaped good-sized tree. The beautiful rounded head is due to abundant light on all sides, and the size is proportional in a general way to the richness of the soil. The same tree growing in a woodland may suffer greatly from competition. The growth is slow, frequently one-tenth that of the tree in the open. There is a much reduced top, possibly one-tenth of that of a tree in the open. Both are due to the crowding or competition of adjacent trees. In these cases, the amount of food and light are determining factors.

Trees show marked adaptations to various soils. Some trees do best in light, well-drained soil. They usually have deep root systems. Others are adapted to saturated earth with its abundant organic matter. The roots of these are mostly near the surface. The rhododendron, a lover of peaty, acid soil frequently provides striking illustrations of soil effects. It thrives in moist, acid conditions. When growing in somewhat lighter soil, especially if located near a concrete structure or wall laid up in mortar. the rich green foliage of rhododendron gradually becomes unhealthy, usually a yellowish-green, due to leaching of the lime. The excess of alkali is rather easily corrected by the addition of aluminum sulphate. The rhododendron is a gross feeder which responds quickly to abundant plant food. It belongs in a group with the azaleas, blueberries and other shrubs with similar requirements. Conversely, the ornamental box does best in an alkaline or lime soil.

A knowledge of the soil requirements of ornamentals is necessary if one would secure the best results. The right materials, as well as the proper amounts are essential.

What shall be done with a tree, especially valuable because of its age or historical associations?

This is a fair question and judging from recent reports in the press, there are a variety of solutions. One of the more satisfactory was adopted by the Elks of Reno, Nevada. It was an elm grown from a slip secured by a former Reno resident from the famous Washington elm at Cambridge, Mass. It could not remain where it was planted because a building was to be erected on the site. A solution was found in moving the elm to the campus of the University of Nevada where presumably it will be given the care and protection due to a tree of such honorable lineage.

At St. Louis, Missouri, a stately and ancient elm on school grounds was cut down to make way for a large outdoor sign board. This particular land was sold by the school authorities because it was not used. Now there is a large signboard in spite of protests by residents of the neighborhood.

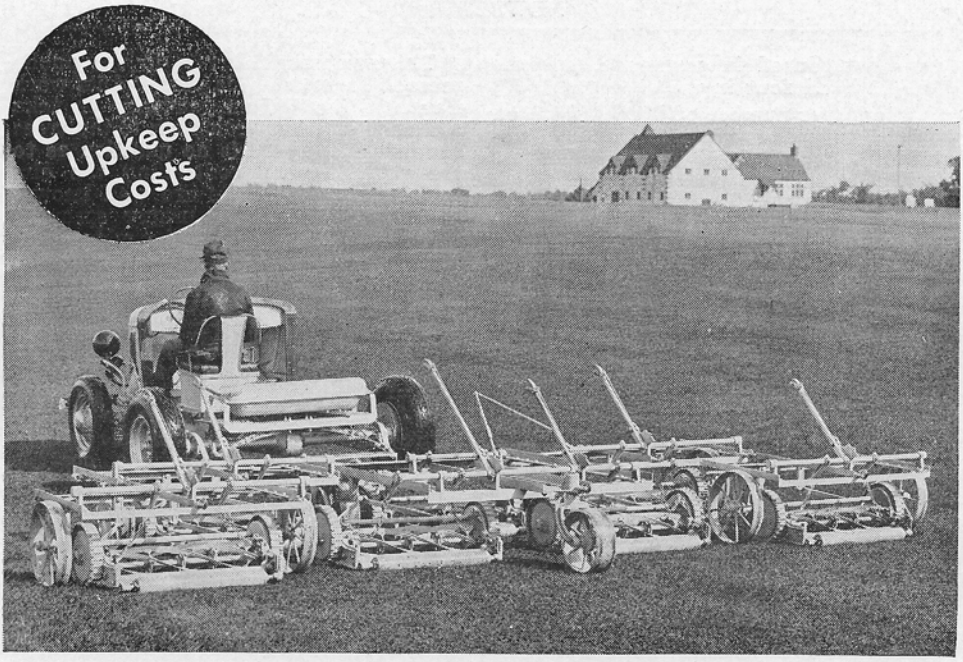
Possibly the most interesting case was at Great Neck, Long Island. An ancient oak ninety feet high and with a trunk diameter of four feet, was brought to the attention of village authorities through a resident asking that certain dead limbs extending over his property be removed. The authorities evidently considered the tree dangerous and during the absence of two adjacent land owners, the tree was cut down. These parties allege that the removal of the tree has damaged their properties to the extent of $25,000 and have started suits to recover the loss. Irrespective of how the case may be settled, it is certain that the value placed upon this tree comes well toward the maximum.

The occurrence of dead branches in a large tree does not necessarily indicate that the tree must be cut down. Pruning and feeding frequently makes it possible to keep such trees in an attractive condition for many additional years. This is surely preferable in the case of cherished trees.

It is frequently good policy to save the tree and thus add to the attractiveness of the community.

Here are some new facts in support of the possibility of actually **protecting** trees from the Dutch elm disease.

Four years ago we ventured an opinion to the effect that spraying elm branches with poison early in the season might be important in protecting elms and checking the spread of the Dutch elm disease. It was tentative in nature and based upon work with the related hickory bark beetle. This season some most interesting data have been secured. Two small elms were potted and enclosed in cages. One hundred and six European elm bark beetles



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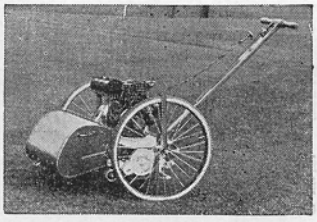

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were introduced in one cage and one hundred and four in the other.

The larger number of beetles were on a sprayed elm now practically unharmed. There is a marked contrast between this tree and the other which was not sprayed. The bark on the latter tree was so badly eaten that all the foliage has fallen and the tree is dead. A similar condition exists on another elm, likewise unsprayed, caged with but sixty-two instead of over one hundred beetles. The beetles on both of the sprayed trees lived about as long as those on the unsprayed trees. It is significant that the unsprayed trees were killed while the sprayed tree was uninjured.

These data indicate a marked degree of protection for poisoned elm twigs and justify the qualified recommendation of four years ago, namely, that when spraying valuable trees in areas where the Dutch elm disease occurs, it is advisable to poison the twigs so far as possible. Subsequent experience may prove that in this simple modification of spraying practices we have a most important control for this disease. Think what it would mean if a relatively simple procedure could be relied upon to protect the valuable elms on estates and in community centers. These possibilities could be thoroughly tested on a large scale.

It is vastly better to protect trees than destroy them. The above shows a possible way out for the elms of America.

Recent newspaper clippings indicate considerable injury by the elm leaf beetle in many communities of southern New England and New York State.

This insect is now widely distributed in the United States and although local in habit, it has turned up in a number of far western localities, presumably transported by automobile and various public conveyances. The beetle is one of the better known destructive shade tree pests. For over forty years it has seriously injured elms in the Hudson River Valley and in southern New England in particular, most of the damage being caused by the grubs feeding on the under surface of the leaves. This season the injury was somewhat later than usual and the ugly brown of the skeletonized leaves did not become conspicuous until late July and in August.

The numerous laments in the public press in regard to this pest and its work illustrate the human tendency to take a chance and then complain if the trees are injured. There is no question as to the possibility of controlling the elm leaf beetle. Its habits are well known. It is easily killed by proper spraying with arsenate of lead. The widespread injury occurring this year should be charged to local indifference to the welfare of the elms. In some cases this may be neglect. Too many people fail to appreciate the value of trees until they are severely damaged. A realization of the importance of elms as community assets should result in annual appropriations which will permit reasonably thorough spraying. The cost is not excessive compared with the value of the trees. Neglect through a series of years means weakened elms and inevitable loss of many large trees. Not infrequently irreplaceable historic trees fall victims to this scourge. Your village or your city is favorably and widely known if the streets and parks are adorned with thrifty trees. They contribute much to a desirable type of publicity. Does your community participate?

It is too late for effective spraying for elm leaf beetle this year. Planning for satisfactory control another year is by all means advisable.

A Fall blooming elm is unusual when compared with our native species.

The introduced Chinese elm is a small tree attaining a height of 45 to 70 feet. It is remarkable that the flowers appear in August or September, whereas, as is well known, our native elms blossom before the leaves appear, and the fruit ripens early in the season. This unusual habit of the Chinese elm illustrates one of the variations which may occur among related species which have developed in different sections of the world.

There is another interesting phase of this situation. The far-eastern Siberian elm is likewise an introduced species and a small tree which attains a height of about 45 feet. Both the Chinese and the Siberian elms have slender branches and small leaves though the leaves of the Siberian elm are larger and somewhat lighter colored. The two are so similar in appearance that one may be easily deceived as to the identity of these elms. The twigs of the Siberian elm are a little more slender and the

bark decidedly lighter colored than is the case with the Chinese elm. The latter is somewhat more ornamental in appearance. The Siberian elm has been planted extensively in the Southwestern states since it thrives in areas where there is a relatively small rain fall.

These two introduced elms can not be compared in majesty and beauty with the generally admired and widely grown white or American elm. They provoke curiosity because of the striking differences from our native elms. They are believed to be immune or resistant to the Dutch elm disease and on this account they have a special interest though the Dutch elm disease work in America is shaping up in such a way as to encourage the belief that a large degree of protection from this trouble may be possible for our elms.

The elms in their varied characteristics are well worth knowing. This is true of native as well as of introduced species.

This is the season when native woody vines are calling for attention. The birds love the shelter of vines and many enjoy their fruit.

The Virginia creeper or woodbine is one of the earliest to assume bright colors. Its brilliant red on the trunk of an elm, along a slender branch or in a tangle of evergreens attracts the eye. It is one of our most beautiful vines in the fall, a continual invitation to those wishing to take bright tinted leaves into the home. Be sure the bright red foliage has five leaflets, some would call them leaves, on one stalk, or the enthusiastic collector may gather an armful of beautiful red and yellow leaves, each stalk with three leaflets or leaves and capable of producing a bad case of ivy poisoning. Five leaves to a stalk means safety, three leaves indicate possibly days of suffering. Both of these vines are abundant. The Virginia creeper is more commonly found on trees and in shrubby growths. The poison ivy, especially in southern New England, adorns literally miles of walls and fences and frequently partly covers the trunks of elms.

The native grapes, there are several species, are conspicuous features with abundant foliage, which turns about this time. There is also the yellowish attractive fruit. Wild grape vines occur commonly on fences and overrun trees and shrubs, in some cases almost smothering them.

The green briars occur in much the same locations as wild grape vines, prefering moist ground. They are more common from southern New England southward. The thick nearly circular green leaves shelter numerous vicious thorns, the latter barring passage of the hunter or at least suggesting care in traversing such tangles. Incidentally, this vine forces attention to the going, since it makes a difference whether one is caught in a tangle of grape or green briar.

Comparatively few realize that our native woody vines are attractive ornamentals and may frequently be used to great advantage.

The well-known bulletin "Lawn Management" by Prof. Lawrence S. Dickinson, has been revised, and is now known as Leaflet 85, and is still issued by the Extension Service of the Mass. State College. This leaflet should be in your files, and is a fine help to the home owner who is trying to have a good lawn. Recommend it to the next member who asks you for turf advice!

Just a Juvenile Slicker

"Auntie, can you change a dime for me?"

"How do you want it changed, dear?"

"Well, if convenient, I'd like for you to change it into a quarter."

(Bank Notes)

"Your husband suffers from voluntary inertia."

"And, to think, I accused him of being lazy!"

(Bank Notes)

Good-will, like a good name, is got by many actions, and lost by one.

"What you haven't the nerve to say to his face is far better not said at all."

"Fire the man who isn't big enough to praise his fellow workers."

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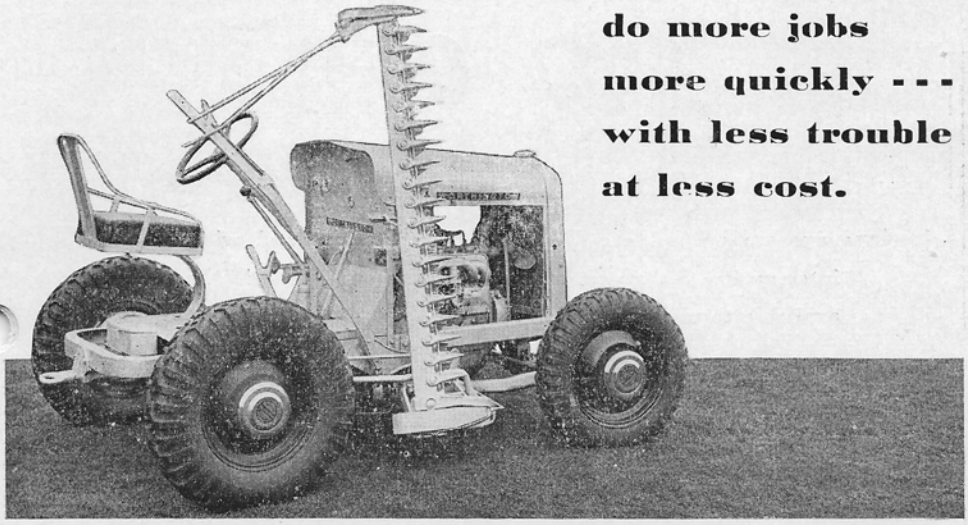

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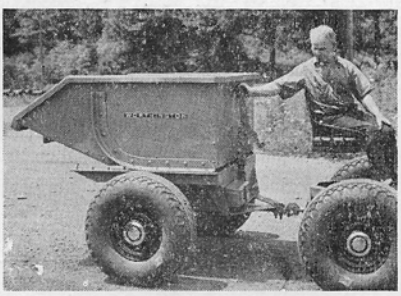

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