him of little account, for every one remembered the brilliance of Lord Hugh, who was looked upon as the political genius of the Cecil family. There was a hazy impression that Lord Robert was a negligible factor. The impression was increased by the fact that Lord Robert was at first unobtrusive, and, though a very regular and punctual attendant of the House, spoke but seldom. But there was a grim resolution behind that unobtrusiveness. Lord Robert never went away in the dullest debates, was always in his place during all-night sittings, and quickly acquired a knowledge of parliamentary routine which enabled him quietly to enter a debate when, with but a few Unionist members present, the intervention of a trained and clever lawyer was a godsend. Gradually he built up his reputation. In two years a great respect had grown up for him in all parts of the House.

As time went on, it became evident that he was the most able and persistent among the younger Unionists. With confidence there came to him a touch of bitterness, which often added piquancy to his speeches. A persistent all-nighter himself, he scathingly described all-night sittings as "a kind of middle-aged lark." On another occasion he said they represented "legislation by competitive endurance." He put the seal on his reputation when early in 1909 he rose in a crowded House and declared in the face of his leaders that he could not accept a policy of fiscal reform. Here was a man who by his great ability was almost certain of position in the next Unionist Government, and who now was deliberately discarding the chance. The House listened in rapt attention, as it always does listen to a strong, courageous member who has views not altogether commendable to either of the great parties.

A tall man, with gaunt, pallid face, his shoulders hunched up towards his ears, Lord Robert made windmill motions with his arms as he explained his position. But his intensity was such that he held the House in the completest silence. He sat down with his chances of office gone, but with his parliamentary fame established.

During the great Budget debates throughout 1909 he played a leading part in criticising the Government's financial proposals. I do not think I missed him on any one day throughout all the discussions. Hour after hour he flung himself into the debate, questions on fact and points of order alternating with fierce criticisms on matters of principle. He would sit in his seat, a hawk-like man with glistening eyes, head sunk in his shoulders, silk hat tilted forward over his forehead, his picturesque personality somehow lighting up his peculiar and extraordinary powers.

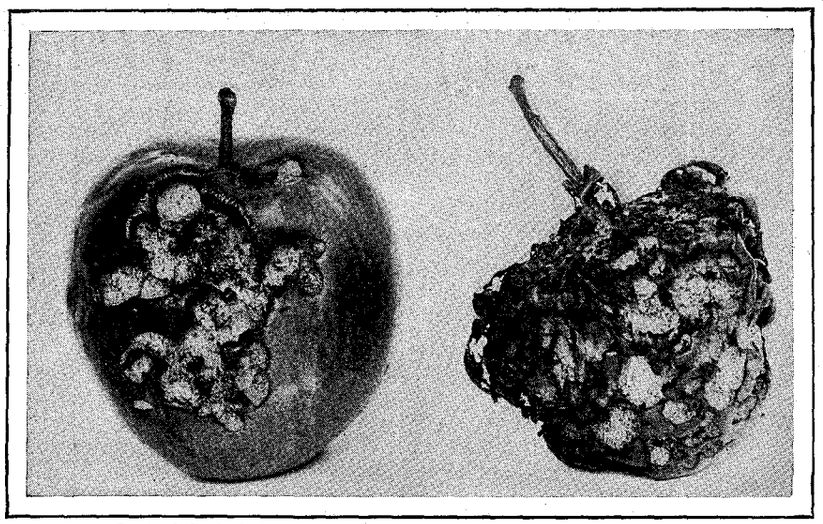
In the war Lord Robert came into prominence as Under-Secretary for Foreign Affairs, which meant, in fact, that he shared with Sir Edward Grey, the Foreign Minister, vast responsibilities. He was repeatedly spoken of during this period as an approaching Prime Minister, but events have shown that he is temperamentally averse from making an effort for popular acclaim. It just is not in him. With his contemptuous scorn for the popularity hunter goes the Cecil independence, which makes it very difficult for him to work in harness with any of the existing parties. He fiercely denies that he is anything but a Conservative, but, as a matter of fact, his ideals are far closer to those of Labor than of any other political section. A curious mixture truly. There are many illustrious names associated with the League of Nations; Robert Cecil is the driving spirit of the organization. The ideals behind the League possess him utterly. The outlook of this scion of a family of empire builders is exampled by a comment I once heard him make at a club dinner to the effect that he, for one, was no prejudiced imperialist, and that if it were necessary for the preservation of peace and the stimulation of happiness among any set of people he would be willing at once to give up British rule over outlying parts of British territory. Bold words, those, for a traditional Conservative. I fancy this ashen-faced man with hooked nose and burning eyes has not yet reached the summit of his usefulness to mankind.

A JAPANESE INVASION OF OUR FIELDS

BY J. L. MILLER

AN insect destructive to almost every kind of vegetation and which in time to come may rank in economic significance with the worst of our pests is steadily intrenching itself in New Jersey and Pennsylvania. The reference is to the Japanese beetle (the *Popillia japonica*) which, accidentally introduced into Burlington County, New Jersey, a number of years ago, threatens to become of National importance.

According to C. H. Hadley, of the Federal Department of Agriculture and entomologist in charge of the Riverton laboratory, the Japanese beetle during the summer of 1922 increased the area of its habitat from 270 to more than 700 square miles, a difference of 430 square miles in the space of a summer.



U. S. Department of Agriculture

APPLES EATEN BY THE JAPANESE BEETLE

The Japanese beetle has been termed by some entomologist the worst and most devastating pest that has ever threatened the fields of any country. The coddling moth and the San José scale restricted their havoc to fruit trees; the Japanese beetle eats everything. The crops of the field and the garden, trees—whether ornamental, fruit, or shade—flowers, weeds, even the grass of the lawns, are alike before its hunger. At least 212 species of plants, comprising practically every economic and non-economic variety to be found growing in the infested territory, have been catalogued as providing food for the beetle. Dr. C. L. Marlatt, Chairman of the Federal Horticulture Board, in his annual report, which was delivered in December, warned that the Japanese beetle threatens large losses to the fruit and forage crops, and that it will ultimately spread throughout the entire country.

The United States Government and

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the Departments of Agriculture of the States of New Jersey and Pennsylvania consider the menace of this insect so formidable that they are spending tens of thousands of dollars yearly for its destruction and control. A laboratory with twenty trained scientists is maintained the year around at Riverton, New Jersey. In the summer the number of men engaged in active field work is nearly 150. Furthermore, two men are now in Japan and one in Hawaii engaged in studying the beetle in its native environment. Its natural insect enemies are being collected and sent to Riverton, that they may be bred and released upon the infested areas of New Jersey and Pennsylvania.

The Japanese beetle was unknown in the United States before August, 1916, and was probably brought into Burlington County a number of years before in grub form, buried in soil attached to azaleas and other perennials imported from Japan. Prior to 1912 there was no inspection of plants brought into the United States from a foreign country, and the pests were allowed to begin life in the New World without let or hindrance. Such an occurrence could not take place so readily to-day, for the Government has grown wiser by experience and now maintains a strict inspection of all nursery importations. Only about a dozen beetles could be found when inspectors from the New Jersey Department of Agriculture first discovered the insects living on nursery stock. Four years later, in 1920, 1,000 quarts of the beetles were collected in a very small area centering about the original point of discovery.

U. S. Department of Agriculture

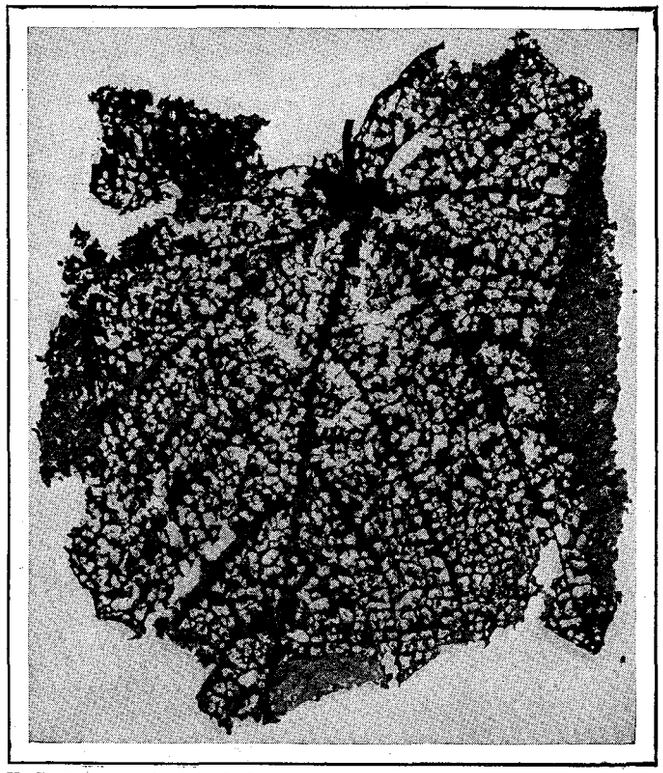
PUPÆ OF JAPANESE BEETLE; AN ENLARGED REPRODUCTION OF THE BEETLE ITSELF APPEARS ON THE COVER OF THIS ISSUE

According to Professor S. I. Kuwana, a prominent Japanese entomologist, the Japanese beetle is known as the bean beetle in his country and is native to practically all the islands making up the Japanese Empire. It is not considered a pest, though it sometimes becomes important in certain areas, causing some loss to such plants as soy-beans, grape, rose, red bean, peanut, prune, apple, and pear. Very little is known of its life history, habits, or enemies in its native country, since there has never been a reason why any attention should be paid it. It is probable that the soil, the climate, and enemies serve to keep the insect in check in its native habitat.

All of which goes to show how dangerous it is to remove an insect from its natural environment and place it in one entirely different. There seems to be a perfect balance in nature. The enemies of a certain insect seem to be just sufficiently numerous to allow it to exist without becoming unduly plentiful. Such was the case with the Japanese beetle in Japan, but, once it made its home in New Jersey, circumstances were entirely different. For once in the many years of its existence the insect was allowed to breed unhindered by its hereditary enemies.

The Japanese beetle territory is in the shape of a great circle with Riverton as the center and the lower confines of Montgomery County as the point of its uttermost extension in Pennsylvania. In the autumn of 1916 the infested area covered less than .5 of a square mile. The next year it increased to 2.5 square miles; while in 1918 the beetles were found to have expanded their living space to 6.5 square miles. The next year the infested area was reported to be 48 square miles. In 1920 the insects crossed the river into Pennsylvania, taking up 11 square miles besides the 92 square miles they had infested in New Jersey. In 1921 they further increased their living quarters to 213 square miles for New Jersey and 57 square miles for Pennsylvania. In 1922 the infested area was increased to more than 700 square miles. These figures enable one to prophesy a still larger expansion of habitat for 1923.

The idea of entirely exterminating the Japanese beetle was given up several years ago, though in the beginning large areas were sprayed with cyanide in the



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GRAPE LEAF EATEN BY JAPANESE BEETLE

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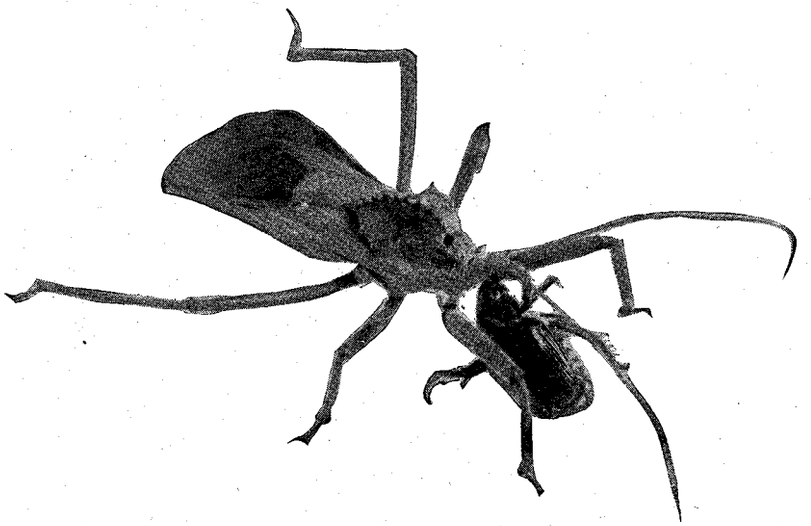

U. S. Department of Agriculture

A NATIVE PREDACEOUS INSECT ATTACKING THE JAPANESE BEETLE

hope of killing the larvæ, while boys were paid 60 cents for every quart of beetles delivered at the laboratory.

The most effective steps that can be taken at present are the devising of methods of combat and the introduction of natural enemies. Already 100,000 insects of the tachinid and tiphia group of insects, the same general family to which belong our bees and our flies, have been received in Riverton from Hawaii and Japan. These were shipped while in that stage of their existence best suited to journeying. Usually they were grubs. The largest shipment aggregated 2,800 pounds dead-weight and came in the cooled hold of a ship and in a refrigerator car, just as though it had been a consignment of vegetables.

The insects upon being received are rigidly observed to determine their reactions to the new conditions. A number of them were found unsuited to the climate and died, while others propagated rapidly and have been released. Needless to say, it is too early to tell what their effect will be in checking the ravages of the Japanese beetle; but if they do the work in Japan, why can they not do it here?

The Japanese beetle is a strong flier and is able to disseminate itself at the rate of from five to ten miles a year, and there seems to be no practical way of cutting down this rate of movement. This is partly due to the natural breeding-places spread out so profusely over the infested areas. The network of fence lines, roads, and creeks, all more or less liberally supplied with host plants, such as smartweed, grape, elder, ivy, and sassafras, permits the steady march of the pest.

A danger is the ease with which the beetle can be carried into new areas in infested nursery stock; in green stuffs such as sweet corn, cabbage, lettuce, and similar products; even by flying from trees into passing automobiles. A strict quarantine maintained by the States, plus an inter-State quarantine enforced by the Federal Government, serves to cut down these possibilities to a minimum. Permits have to be obtained for the moving of farm, garden, and nursery products.

The Japanese beetle is practically omnivorous. The leaves of the tree are skeletonized until they turn brown and drop. In the case of flowers the work of the beetle resembles the devastation of the common rosebug or chafer, only it is more severe and the feeding continued for a longer time. Forest, ornamental, and fruit trees and shrubbery are attacked with equal alacrity, and, while they do not die at once, the repeated loss of their foliage finally causes them to wither away. Peach and apple trees suffer severely from the ravages of the beetle. Not only are the leaves riddled and eaten, but the fruit itself disappears before the inroads of the insects. It is not an uncommon sight in a badly infested peach orchard to come upon a tree bearing nothing but pits, the edible parts of the fruit being entirely consumed. Apples fare little better. Plums are attacked similarly. Sweet corn is eaten from the tip, the beetles working down through the rows of tender grains.

A study of the following list of plants attacked will impress upon the mind the importance of controlling the ravages of the Japanese beetle: grape, raspberry, blackberry, apple (foliage and fruit), sweet potato, lima bean, string bean, corn (foliage, silk, pollen, and ear), red clover (foliage and flowers), alsike clover, alfalfa, Virginia creeper, rose, althea, Japanese rose, Japanese flowering cherry, hollyhock, fern, canna, elm, oak, willow, horse-chestnut, smartweed, Indian mallow or velvet-leaf mallow, evening primrose, sensitive fern, mercury weed, wild rose, milkweed (flowers only), sassafras, wild fox grape, wild summer grape, elder, wild cherry, and alder.

"The life history of the Japanese beetle is one year. During March and April the half to full grown grub, having passed the winter in a cell two to twelve inches beneath the surface of the ground, comes to within a short distance of the surface and resumes feeding. By late May the older grubs build for themselves a cell from one to three inches beneath the ground and prepare to enter the pupæ stage. In two weeks they have grown to be adults. Before pupating the pupæ are usually dormant for a week or ten days, and it is an equal length of time before the adult emerges into the outer air.

"Upon issuing, the adult Japanese beetle feeds for several days to a week, then mates. Mating and egg-laying continue at irregular intervals, the eggs being laid in humus-packed, moist, but not swampy land, preferably in grassy, uncultivated fields or along weedy roadways. Each female deposits from 30 to 60 eggs in the course of a summer. In two weeks the grubs hatch, and in autumn burrow down into the earth and build a cell in which to pass the winter."

The Japanese beetle is a very good-looking insect, about the size of a potato-bug, only fatter. Its scientific name is *Popillia japonica*. "The head and thorax and legs are of a brilliant bronze green. The elytra or wing covers are brown, tipped with green at the edges. At its sides and at the tips of the abdomen, usually not covered by the wing sheaths, are clearly etched white spots. The grubs, which attain a length little short of an inch when full grown, are curled like the native grub and are of a distinct pale-tan color when in the intermediate or pupal stage."

As yet there have been no very satisfactory or efficient ways developed of controlling the Japanese beetle. Breeding-places may be sprayed with cyanide, but, since the possible habitat of the young insects is so large, the venture is apt to prove a rather expensive one. Then, too, unless all surrounding territory is treated in the same way, the farmer who has cleaned up his land will be troubled with the insects hatched on his neighbors' properties.

Our common arsenical poisons are very useful as a repellent of the Japanese beetle, but they do not kill it; they only chase the ravagers from plants that have been sprayed to those that have not been so treated. Arsenate of lead is the form of poison usually employed. The preparation should be used during the beetle season, great care being taken to see that the foliage is perfectly coated with the poisonous wash.

As yet it is too early to foretell the complete significance of the Japanese beetle. Perhaps the same balance which exists between the insect and its enemies in Japan will be established here; perhaps it will prove one of our greatest pests. Time alone will tell. In the meantime the Japanese beetle must be combated with every means known to science.

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GLEE CLUB NEWS FOR OLD-TIMERS

BY CARLTON P. FULLER

To the old-timer who recalls glee club concerts as second-rate vaudeville shows and excuses for subsequent dancing the seventh annual Intercollegiate Glee Club Contest at Carnegie Hall on March 3 must have proved a surprising revelation of sound advancement. Divorced from the tinkling rhythm of mandolin and banjo, the college glee club presents probably the most serviceable agency at hand for inculcating musical appreciation in men who should in due course become community leaders. That this opportunity has already been improved is evidenced by the high level of performance at the most recent contest, where choral music of worth was sung with intelligent evaluation. Not by one or two contestants, be it noted, but by all ten. When these contests were first developed in pre-war days, it was the rule to find two or three colleges standing far above the rest; this year only 38 points in a possible 300 separated the highest from the lowest, under the rigid marking of such excellent judges as Walter Damrosch, Mme. Sembrich, and H. E. Krehbiel. Each club sings three selections, two of its own choice (subject to approval) known as a "light" song (if Debussy's "Bells" and Morley's "Fire, Fire My Heart" can be termed "light") and a college song, and the other a prize song which all deliver in rotation. It can readily be seen that such an extended programme must be carried through on a high plane to retain the interest of the audience, and it is safe to add that no one found the most recent contest tiresome. Clarity of enunciation, precision of attack, have become almost invariable features of this college singing; delicacy of expression grows more noticeable each year. Inasmuch as the judges mark on tone, pitch, diction, ensemble, and interpretation, the increasing competition has directly fostered superior execution of the pieces undertaken and has toned up the whole level of glee club singing.

It is most encouraging that with the raising of standards has come so great a widening of interest in the contests that regional plans have been worked out for 1923: twelve Mid-Western colleges competed at Chicago in February; ten Ohio colleges gather at Columbus in May; seven Pacific coast universities meet at Los Angeles in April; and next year a Southern group converges on Atlanta. Eventually it is hoped to stage a winners' contest in New York; in fact, the Mid-Western victor, University of Wisconsin, appeared at Carnegie Hall on March 3. Thus there are definite centers of influence at work all over the country raising the character of glee club singing. By stimulating general interest, this influence is extended beyond the clubs themselves to the colleges and, in a lesser degree, to outside communities.

Not content with these ambitious undertakings, the leaders of the movement (and here it should be stated that Albert F. Pickernell, Harvard '14, conceived the idea and pushed it to achievement almost single-handed) have spread their gospel of more and better music to preparatory schools. This is a sound development, for schools act as feeders for colleges, and the boys have matured sufficiently to take an intelligent interest in singing and to be equipped with more or less reliable vocal organs. Already a meet with seven contestants has been arranged for New York on April 21. Working toward the same end of stimulating better singing in the schools, Dr. Davison, of Harvard, has a practical scheme for shifting the emphasis of College Board entrance examinations in music from perfunctory knowledge to real appreciation. There is, then, this leaven of higher standards working down from the colleges.

Moreover, it is working upward, though, with less cohesive material to concentrate on, results must become apparent more slowly. Most widespread will be the radiating influence of individuals who have imbibed musical ideals in college; it may be expected that they will appear as organizers of community song festivals, or active choruses, or volunteer choirs. Occasionally a group of them will be able to combine forces, after the example of the University Glee Club of New York City, whose 125 members represent over 40 colleges. This particular organization has behind it a successful career of twenty-eight years. From October to April weekly rehearsals lead up to two annual concerts in the Metropolitan Opera House—one in January, the other, with an entirely new programme, in April. Although these concerts are not open to the public, friends of the members and the many associate members fill the large auditorium. While it is true that sociability plays an important part in the Club's activities, Dr. Woodruff and Mr. Marshall Bartholomew have insisted upon high technical achievements and have conducted with a musical insight that could not but be reflected in the Club itself. The example of its performance is not altogether hid under the bushel of private concerts, since this is the organization which has sponsored the intercollegiate contests; also visits to prominent New York clubs and near-by university precincts provide a little missionary work for the cause of choral singing.

After-college singing, preparatory school enthusiasm, intercollegiate contests—all this activity gives evidence of solid development back at the universities. It need not surprise us, then, to find one college glee club, that of Harvard University, engaged to sing with the Boston and Cleveland Symphony Orchestras and appearing in concerts accompanied by Fritz Kreisler and Frieda Hempel. The long road to these heights started fifteen years ago when Dr. Davison, '06, as organist, choir-master, glee club coach, and Professor of Music took up the fight for good music among undergraduates. At that time the glee club was almost purely a social institution; he had faith that young men could be interested in more worthy ends, and proceeded to demonstrate his theory through the chapel choir, which conquered Palestrina and became enthusiastic adherents of pure music. To this day the Appleton Chapel choir provides as fine church music as can be heard in the large metropolitan churches. But this clarification of an eddy in college life left the main current untouched; the glee club could be coached to technical excellence without any possibility of developing a real musical body as long as it was united with the inherently unmusical banjo and mandolin. Not until the spring of 1919 did the time seem ripe for divorcing the vocal from the instrumental. Despite the local furor at the time, events have justified the action; not particularly because a European trip was successfully completed in 1921, but because the Glee Club has achieved a position in the musical world and 125 rehearsing members are learning to make their own the best of music. There have been various ramifications of this movement in Cambridge, but it is only essential to point out that an upward trend exists there and has accomplished definite results.

In other university centers the same tendency has been fostered in varying degrees. Professor Dann gave Cornell a glee club of unusual accomplishments and through an annual festival aroused keen interest in things musical. At Princeton, always famed for her collegiate singing, higher ideals have been implanted by Professor Russell. Although methods may vary at these colleges, the universal aim is better appreciation of better music.

Is there any way of estimating the influence this movement may have on the more popular side of American music? Men trained in the pursuit of sound ideals at an age when such ideals sink in should inevitably spread abroad interest in good music from whatever positions of eminence they may reach. Recent progress in college singing will attain final fulfillment in the influence individual lives exert among widely scattered communities.

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