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A LIST OF APHIDS OF NEW YORK

by

MORTIMER DEMAREST LEONARD, Ph.D.
Washington, D. C.

In Memoriam
FRED RAETZ

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The Rochester Academy of Science, on behalf of Members who will enjoy the intriguing presentation of aphid biology and of entomologists who will value the completeness of the records in Dr. Leonard's A List of The Aphids of New York, *extends its thanks to the Shell Chemical Company, whose interest and generosity help make possible its publication.*

A LIST OF THE APHIDS OF NEW YORK

MORTIMER DEMAREST LEONARD, Ph.D.
Washington, D. C.

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ACKNOWLEDGMENTS

In the fall of 1932, while I was spending a few weeks on vacation at Cornell University, Professor C. R. Crosby of the Department of Entomology suggested that I take up the collection and study of aphids. A little sample collecting around Ithaca revealed plant lice to be abundant on many kinds of plants at the time. This experience and the extensive bulletin of Hottes and Frison on "The Aphiidae, or Plant Lice, of Illinois", which had just appeared, aroused my attention. This interest has continued, albeit somewhat intermittently, throughout these 30 years.

Because of my prior interest in the insects of New York, my principal objective at once became a study of the distribution and food plants of the New York aphids. During the first 4 years—until Professor Crosby's death early in 1937 and cessation of my own frequent trips into the state—both Crosby and I collected aphids, together and separately, at every opportunity and rather widely in New York. In these ways I got started on the work leading to this paper.

I want to thank Dr. Clyde F. Smith, Head of the Department of Entomology, North Carolina State University. He has made or verified determinations of over 750 collections from New York during 1959 and 1960. His cooperation is greatly appreciated; he is identified in the text as CFS.

Miss Louise M. Russell, specialist in the identification of aphids in the Agricultural Research Service, United States Department of Agriculture, has made many determinations and supplied many records of New York aphids and has given much help in unravelling problems of synonymy. She has reviewed the manuscript of this paper. Her help has been invaluable. She is identified in the text as LMR.

Dr. Geddes W. Simpson, Head of the Department of Entomology, University of Maine, has supplied a number of valuable early records of aphids from New York determined by Dr. Edith M. Patch.

My sincere thanks are due to Mr. Paul Russell, Collaborator, Crops Research Division, Agricultural Research Service, United States Department of Agriculture, who has reviewed most of the botanical and common names of the plants in the food plant list. He is not responsible, however, for changes of a few of the names or for errors that may have crept in.

I cannot refrain from expressing to my wife my appreciation for her never-failing encouragement of my interest in aphids and for her creating and maintaining an environment in which I have been able to pursue their study.

I acknowledge with many thanks a grant from the Grace H. Griswold Fund of the Department of Entomology, Cornell University, to aid in the preparation of the manuscript of this paper.

INTRODUCTION

This paper lists as completely as possible the species of aphids known to occur in New York and to record their distribution within the state and the plants on which they feed and breed. The extent of the damage done by those which are injurious is described. For general interest there is also included a discussion of the remarkable and often complicated life histories of aphids together with certain other pertinent information about them.

The aphids, or plant lice, belong to the Family Aphidae of the Suborder Homoptera, which is one of the two major groups of sucking bugs. They are rather small insects, ranging in size when full-grown, from a little less than 1 millimeter to a little over 5 millimeters in length—about 1.5 to 2.5 millimeters being an average size. They feed by extracting the juices from plants and often become so abundant that the plants are stunted or even killed. Wherever ferns and flowering plants grow in the world, aphids have been found feeding and breeding on a large number of them. All parts of plants are subject to infestation.

Although aphids have been recorded as feeding on many hundreds of kinds of plants throughout the world, many other plants are surely yet to be found supporting aphids. New plants are continuously being added to the list and further collecting will undoubtedly add more. Theoretically almost all plant species are potential aphid food plants. Some aphids are confined to only one species of plant; some to several plants of the same family; others are more general feeders and some have been found on several hundred plant species belonging to varied plant families.

It is difficult to say how many different kinds of aphids there are in the world. New species are being named and described each year from many countries. There has been confusion of names and identities so that the present number of valid species cannot be stated with certainty. However, Mr. V. A. Eastop of the British Museum (Natural History) estimated in 1961 that the total of known species is about 2700.

The number of aphid species actually occurring in New York is also difficult to determine. However, judging from the number recorded from several other states which have been extensively collected, and considering the topography, climate and flora of the state, it might not be surprising if at least 450 eventually should be found. New York lies in a region of almost optimum climatic conditions for the development of aphids and this is combined with a rich and varied flora. The whole state is well watered with many rivers, streams, lakes and ponds. It also contains a number of swamps and bogs

which, although at a low altitude, show much more northern plant and insect characteristics.

Within New York's nearly 50,000 square miles lies the great region of the Adirondack Mountains, which are as high as 5,300 feet. Those which are higher than 3,500 feet rise into the Hudsonian zone and present conditions much like those of Labrador. The tops of at least three peaks are Alpine in character. On the other hand the Coastal Plain, which comprises Long Island, Staten Island and the vicinity of New York City, contains many southern elements. The number of flowering plants in the state is estimated to be about 3,000 species and subspecies, distributed in about 800 genera. Aphids have been determined, at least to genus, from a little over 700 plants distributed in a little over 300 genera, although they have been collected from a somewhat larger number of plants. It is thus seen that a great many more plants are yet to be examined for the possibility of their harboring specific or general aphid guests.

Aphids have been collected in New York with any real intensity in only four sections—the extreme three or four western counties near Lake Ontario; south of Buffalo around Dunkirk, Sheridan and Fredonia near Lake Erie; at Ithaca and in its general vicinity in Central Western New York; and on Long Island, especially the eastern end and to a somewhat lesser extent just north of New York City at West Nyack, Mt. Kisco and Yonkers. However, aphids known to occur in each of these areas can be presumed to be widely distributed in the state wherever their food plants occur. Aphids are almost unknown from the whole region of the Adirondacks and north of there to the Canadian border. This area should be explored.

The present list gives records of 303 aphids specifically determined as occurring in New York. There are 14 others determined with a query and still 34 others determined only to the genus. Assuming each aphid in this last group to be a different species and to be in addition to the others, the grand total indicates that 351 aphids are now known to occur in New York. Of these 51, 15% of the total, are recorded only twice and 127, 36% of the total, have been recorded but once. It is thus seen that a great deal more collecting and study will be required before any really adequate idea can be had of the occurrence and distribution of aphids in the state. All available records through 1960 are included.

SOME ASPECTS OF APHID BIOLOGY

LIFE HISTORIES

The life histories or life cycles of aphids, taken as a whole, are so intricate that it is rather difficult to prepare a concise and under-

standable account of their remarkably intriguing habits. In rereading the summary of the life histories of aphids published by Hottes and Frison in their well-known "Aphiidae, or Plant Lice of Illinois" (Bull. Nat. Hist. Surv. 19:130–135, 1931), it struck me as being so well done that I do not feel I can improve upon it. Since too, every statement they make about Illinois aphids applies equally to those of New York, and since all the species of aphids they cite as examples also occur in New York, their account is quoted in full:

"Aphids have so many and varied ways of existence that no one generalized account can cover all of their interesting and often complicated life histories. Information about the life history of a species all too often begins and ends on a given host, leaving us in complete ignorance of the events transpiring between the time in the spring or early summer when the species leaves the host on which it overwinters and the time when it returns to the same host again in the fall after a summer's sojourn, upon some unknown host. Thus in the past, and even now perhaps, it has happened that a species of plant louse was known by one name when taken on its winter (primary) host and by another name when taken on its summer (secondary) host. This has been particularly true of those migratory species in which structural differences exist between the various forms of the same species and it is especially in such cases as these that biological studies are indispensable to a thorough and accurate picture of the relationships or classification of these insects. Dr. Edith M. Patch (in 1920) has admirably stated the difficulty: 'To attempt to epitomize the life cycle of the aphid is like trying to draw an orderly sketch of chaos. But after all, the confusion may be more seeming than real and certain rules, beset though they may be with exceptions, govern the life of even the aphid.'

"An aphid's behavior is governed very largely by its food preferences. A species that passes its entire life history on one host is said to be monophagous. If, however, a species requires two or more kinds of food, it may change its diet in early summer by migrating from the host on which it overwinters to a new host, called the summer or secondary host, and such a species is said to be polyphagous. Some aphids, such as *Myzus persicae* (Sulzer), are practically omnivorous in that they accept as a secondary host almost any plant which offers sufficient nourishment and succulence for their ever-increasing numbers. Strangely enough, this ability to live on many different secondary hosts does not carry over to the sexual forms, for at the approach of cold weather in temperate and northern climates, such plant lice return to their specific primary hosts like so many tourists returning to their homes from vacations spent in foreign places.

"Generalized Life Cycles

"In Illinois [as well as in New York] most aphids under natural conditions spend the winter in the egg stage. As a rule, the primary host upon which the eggs are laid is a tree or shrub, the woody twigs or branches of which offer a greater degree of permanence for the preservation of eggs than the more fragile, pithy stems of annual and herbaceous plants, which are often broken off at the ground and carried away by various agencies. The eggs, which are small, ovoid, and usually black, are laid either on the twigs near the dormant buds, or upon the bark of the limbs, or in some cases even on the trunk. The hatching of the eggs in spring is usually correlated with the opening of the buds of the host.

"If the species is a leaf-feeding form, the newly hatched aphids, which are called stem mothers, wander about on the stems and branches until they reach the opening buds. Once they find these, they settle down and begin to feed. This feeding continues for about two weeks (the exact time depending on the temperature and species), and during this period the young aphids find it necessary to molt or shed their skins four times in order to provide for their rapidly increasing size. At the end of the fourth molt these first aphids appear to become full grown.

"The stem mother is almost invariably apterous (wingless) and gives birth to living young parthenogenetically (without fertilization, there being no males at this time of the year). The production of living young is known as viviparous reproduction. A stem mother normally lives for about thirty days and gives birth to numerous young during this time. These progeny, when they become mature, closely resemble the stem mother and also give birth to living young parthenogenetically.

"The third and fourth generations may or may not be apterous. Usually, however, especially if the species is migratory (polyphagous), a large proportion of the aphids are winged (alate) and are called spring migrants. If the species is not migratory, continuous generations of agamic females, either alate or apterous, are produced until the appearance of the sexual forms. The time of appearance of the sexual forms varies in accordance with the seasonal adjustments of the various species but usually they are produced in the fall of the year.

"If the species is migratory, the spring migrants fly to the secondary host of the species and there establish themselves and their progeny for the summer. Usually a migrating species entirely deserts its primary host for the summer, but occasionally the spirit of the wanderlust fails to develop in all individuals, so that some of them remain upon the primary host throughout the year. On the

secondary host several generations of alate and apterous females are produced during the remaining portion of the summer, each generation passing through the various stages of nymphal life before becoming mature. Summer generations usually require less time to mature than the stem mothers, and some individuals may become adults on the sixth or seventh day after birth. Each of them may produce from 60 to 100 progeny before dying at an age of 20 to 30 days. In the fall of the year alate females, known as fall migrants, and occasionally alate males, are produced on the summer host. These alate females return to the primary host and there give birth to oviparous females (egg-laying females) and males in case the latter are not produced on the secondary host. The oviparous females, after mating, lay fertilized eggs as described above, and in this stage the species usually over-winters.

"The cabbage aphid, *Brevicoryne brassicae* (Linn.), may be cited as a good example of an economic species with a rather generalized or orthodox life history. In Illinois this plant louse passes its entire life history, that is, from stem mothers in spring to sexual forms and eggs in autumn, on cabbage or related plants. There is no true or rhythmic migration from, or desertion of, the spring food plant, but simply a dispersion of individuals from time to time to other cruciferous plants.

"Many other aphids, such as the various species of *Cinara* that feed on pine and certain species inhabiting oaks and birches, do not migrate from their primary host plants to secondary ones, but spend the entire life upon a single host or at least upon very closely allied hosts. The alate forms of these monophagous aphids serve only to distribute the species, and not to satisfy a desire for a change in diet as do those of polyphagous species. Certain species, such as *Myzus essigi* Gillette and Palmer, living on larkspur, find their hosts becoming unsuited for them very early in the summer, but instead of developing a migratory habit to more suitable hosts they meet this adversity by producing sexual forms, and laying eggs, at an early date.

"A step further, but still a more or less generalized life cycle, is presented by the rusty plum aphid, *Hysteroneura setariae* (Thomas). This plant louse, which over-winters on plum, migrates in early summer to various grasses upon which it spends the remainder of the summer. In fall certain alate viviparous females, the fall migrants, again return to plum in order that the life cycle may be completed on the primary host. Other examples of species with secondary hosts but still with more or less generalized life histories are: *Rhopalosiphum prunifolii* Fitch [*R. fitchii* Sand. is here referred to—note by MDL], which migrates between apple and cereal crops;

Hyalopterus pruni Geoffroy [now called *H. arundinis* (Fab.)]; and *Aphis illinoisensis* Shimer, which migrates between viburnums and grapes.

"Specialized Life Cycles

"Many plant lice have gone so far in the development of generations living under difficult conditions, that the forms frequenting the secondary host have changed structurally and are markedly different from those on the primary host. For example, most of the plant lice producing galls on the primary host plant have very complicated life histories. Some of the common species producing galls in spring and early summer on poplars (*Pemphigus populi-transversus* Riley and *P. populicaulis* Fitch) migrate to the roots of various grasses for at least part of the summer. The alate females which return to the poplars in late fall or early spring are called sexuparae and give birth to odd appearing sexual forms.

"Very complicated life histories are exhibited also by several species in Illinois which migrate between distinctly related plants. Among these may be named *Hamamelistes spinosus* Shimer, *Hormaphis hamamelidis* (Fitch) and *Prociphilus tessellata* (Fitch), which is one of the few aphids known to hibernate in temperate climates as nymphs.

"*Hamamelistes spinosus* Shimer hibernates on white birch in the form of greatly modified individuals resembling coccids more than they do aphids; descendants of these hibernating coccid-like aphids fly in early spring to witch-hazel, upon which the sexual forms are produced. The eggs are soon produced but do not hatch until May or June of the following year. Descendants of the individuals hatching from the over-wintering eggs on witch-hazel migrate to birch, where other generations soon modify themselves into the coccid-like individuals mentioned above. Thus the species spends the winter on both of its hosts but in two different ways.

"*Prociphilus tessellata* (Fitch) migrates between maples and alders. The sexual forms are produced on maples by migrants leaving the alders in fall. The over-wintering eggs produce stem mothers in spring, which produce generations (*acerifolii* Riley) destined to return in summer to alders. Although interrupted on its probable original host, the maple, the life cycle may continue on alders until the colony is destroyed by accident, disease, death of the host plant, or attack by enemies.

"In warm climates, and under greenhouse conditions in colder climates, the life histories of aphids may be so modified that they may go on indefinitely reproducing viviparously for years. Certain subterranean species, too, like *Geoica squamosa* Hart [Palmer calls this *G. utricularia* (Pass.)—note by MDL], have become modified to an entirely subterranean type of life, so that the aerial forms have dropped out of existence, at least in certain geographic areas."

PRODUCTION OF WINGED FORMS

It is a matter of common observation that in a colony of wingless aphids some of them will begin to develop wings. It was long supposed that this was a defense mechanism for survival produced by overcrowding. If the aphids continued to reproduce, their numbers would become so great that the individual shoot or even the whole plant upon which they were feeding would die and consequently they themselves would die also. However, overcrowding alone does not entirely explain this since dense colonies can often be found persisting up to the time of wilting of the plant without producing alates. It has been found that certain changes of the sap of the leaves and stems, no longer healthy due to excessive feeding, somehow tend to trigger the production of winged forms. It appears, however, from recent observations that the principal factor is the duration of sunlight in combination with temperature. There is some evidence to indicate that if the aphids are subjected to less than 12 hours of sunlight per day in combination with a temperature lower than 68 degrees F., they will start to produce winged forms irrespective of other factors such as crowding or the condition of the plants.

ECONOMIC IMPORTANCE

Aphids are among the most serious pests of agricultural crops as well as of shade, woodland and forest trees and of flowers and ornamental plants. They not only suck the juices but infect many plants with virus diseases. Their capacity for rapid and enormous reproduction under favorable conditions of temperature and moisture permit them frequently to cause serious losses. These amount annually to many millions of dollars in the United States to food crops such as fruits, vegetables, grains and grasses and forage crops. Cotton, tobacco, sugarcane and fibre plants are also attacked. So persistent and wide-spread are aphids that great losses still occur even with the use of our highly effective and economical modern insecticides and efficient ground and air equipment with which to apply them. The annual cost of these control measures plus the still inevitable losses sustained, is very considerable. A number of crops must be regularly treated for aphids every year, using from one to several applications; certain other crops only require control measures when aphids threaten to become too abundant.

From the extracted plant juices aphids excrete quantities of a sticky liquid called "honeydew". When they become abundant on the shade trees of city streets, such as maples, elms, lindens, oaks and others, the production of honeydew may become so great as to disfigure the sidewalks and automobiles parked under the trees. Honeydew, when deposited in large quantities becomes a serious

hindrance in harvesting certain crops, such as alfalfa and sorghums, and the sooty mould which grows in it interferes with photosynthesis and with the normal pollenation of flowers.

PRODUCTIVITY OF APHIDS

It is not surprising that aphids are so frequently able to increase to epidemic numbers. An extreme form of viviparity prevails in most aphids. Embryonic development of her young begins before the mother's birth in the grandmother's body. Post embryonic development is correspondingly rapid and so is oviposition, which begins soon after the last moult. Individual fecundity of the viviparous females is modest, 100 offspring being quite a high total. It is the telescoping of the generations which gives aphids their unequalled rates of multiplication. To quote Hottes and Frison again: "The short time that it takes these insects to mature associated with their tremendous reproductive capacity (there may be ten or more generations a year, even outdoors in temperate climates) led Huxley [in 1958] to the calculation that the progeny of a single stem mother would by the fall of the year after 10 generations equal in weight the total weight of the population of China." The statement was made in respect to the common rose aphid, *Macrosiphum rosae* (L.). As Hottes and Frison suggest: "This, fortunately, is purely hypothetical and never happens because enormous numbers of aphids are destroyed by other insects depending upon them for food, by unfavorable weather conditions and by many other means."

HOW APHIDS FEED

A great deal of attention has been paid to the way in which aphids feed. One of the reasons for the extraordinary productivity of aphids is their feeding method, shared by a group of Homopterous insects including the Psyllidae and Coccidae. This is a tapping of the plant's own nutrient sap stream in the phloem sieve tubes. In a turgid plant the sap is under pressure. When the beaks of three common aphids—*Aphis fabae,* the bean aphid, *Myzus persicae,* the green peach aphid and *Lachnus salignus,* the giant willow aphid—were severed while the aphids were feeding, sap was observed to exude from their stylet stumps left in the plant. Mittler (J. Exptl. Biol. 34:334–341, 1957), working in England, found that the rate of exudation in this way was not appreciably less than the rate of honeydew output by the intact aphids feeding on the same stems. The flow is maintained for hours or even days. The term "Sucking Insects" thus appears to be a misnomer for most aphids. A plant cell tapped by *L. salignus* is refilled by its neighbors approximately 100,000 times per

hour. The work done by this remarkable and little-understood plant pump in the plant accounts for the very high rates of food ingestion recorded for some aphids compared with that of some of the most voracious of the chewing insects. For example: the weight ratios of food to insect for a fourth instar cabbageworm and a fourth instar giant willow aphid has been found to be about 2 and 10; for the first instar willow aphid it was up to nearly 320 (Ann. Rev. Ent. 4:141, 1959). Plant sap is deficient in protein so that aphids have to take up large quantities to get enough. Since the sap is rich in sugars, there is a filter system in the walls of the gut which enables the aphid to retain amino acids and excrete the sugars as honeydew.

Excretion is accomplished at the anus as honeydew—this substance is not exuded through the cornicles as had earlier been supposed. In fact, the cornicles used to be called "honey tubes"; however, rather recent experiments have shown that the oily droplets they pass from time to time have some repellent effect upon insect enemies. Cornicles are peculiar to aphids. The technical reader will find the paper by F. C. Hottes interesting: "Concerning the structure, function and origin of the cornicles of the family Aphididae." Proc. Biol. Soc. Wash., 41:71–84, 1928.

APHIDS AS VECTORS OF PLANT VIRUSES

Many aphids have been shown to be responsible for the transmission of numerous kinds of plant viruses in various parts of the world. The damage to the plants by the diseases these viruses cause may often be greater than that produced by extensive feeding. The vector role played by aphids is an insidious one since the feeding of only a few aphids for a short time is all that is required to effectively innoculate the plants

In order to provide some indication of how widespread is the problem caused by aphid transmission of plant viruses there follows a list of some of the aphid virus vectors that occur in New York. (Source is V. F. Eastop's "A Study of the Aphididae (Homoptera) of East Africa"). Their general distribution is given along with the number of viruses known to be transmitted by each in some parts of its range. Several of these aphids have been shown to transmit viruses of potatoes, cereals, strawberries, raspberries, etc. in New York.

Anuraphis cardui (L.) A vector of the yellow dwarf virus of onions in the United States.

Anuraphis helichrysi (Kalt.) World-wide distribution—5 virus diseases.

Anuraphis tulipae (Fonsc.). World-wide distribution—a vector of 2 tulip viruses.

Aphis fabae Scop. Almost world-wide—about 30 virus diseases.

Aphis gossypii Glov. World-wide—about 40 viruses.
Aphis nerii (Fonsc.). World-wide—a vector of sugarcane mosaic.
Breviocoryne brassicae (L.). World-wide—about 23 virus diseases.
Hysteroneura setariae Thos. Occurs only in America and West Africa, a vector of 2 virus diseases.
Idopterus nephrelepidis Davis. Circumtropical distribution and in greenhouses in temperate regions; in California suspected to be a vector of a fern virus.
Macrosiphoniella sanborni (Gill.). World-wide distribution; a vector of a potato virus.
Macrosiphum dirhodum (Walker). Occurs in Europe, North America and East Africa; a vector of cereal yellow-dwarf virus in North America.
Macrosiphum euphorbiae (Thos.). World-wide—about 35 virus diseases.
Macrosiphum granarium (Kirby). Occurs in many parts of the world; a vector of cereal yellow-dwarf virus in North America.
Macrosiphum pisi (Harris). World-wide—about 25 virus diseases.
Macrosiphum rosae (L.). Present throughout the world almost everywhere that roses are grown; a vector of 5 plant viruses.
Myzus circumflexus (Buckton). Occurs in Europe and North America (in greenhouses) and in South America and Indonesia; a vector of about 30 viruses.
Myzus persicae (Sulz.). World-wide—100 virus diseases.
Myzus porosus (Sand.). Occurs in North and South America, the Middle East, Taiwan, Indonesia, Europe and East Africa; a vector of a strawberry virus.
Myzus solani (Kalt.). World-wide—about 30 virus diseases.
Nasonovia ribisnigri (Mosley). Occurs in Europe, North and South America and in Indonesia; a vector of 2 virus diseases.
Pentatrichopus fragaefolii (Ckll.). Occurs in North America (widespread), Argentina, Europe, Africa and New Zealand; a vector of 8 or 9 viruses; of major importance in transmitting those affecting strawberries.
Pentatrichopus minor (Forbes). Occurs in all of the states east of the Mississippi River and in Missouri, Arkansas and Louisiana; in Canada it occurs in New Brunswick and British Columbia; of major importance as a vector of strawberry viruses.
Pentatrichopus thomasi (H.R.L.). Occurs throughout North America except in the southeastern states; of major importance as a vector of strawberry viruses.
Rhopalosiphum maidis (Fitch). Widespread in North and South America and throughout the warmer parts of the world; a vector of 10 virus diseases.
Rhopalosiphum nymphaeae (L.). Occurs in North America, Europe, Africa and New Zealand; a vector of 5 virus diseases.
Rhopalosiphum pseudobrassicae (Davis). Almost world-wide in its occurrence; a vector of 14 virus diseases.

Toxoptera graminum (Kirby). In the wheat-growing areas of North America, Russia and Africa; a vector of sugarcane mosaic, cereal yellow-dwarf virus and wheat mosaic.

Toxoptera violae (Perg.). Occurs in North America, New Zealand, Bermuda, and in South and East Africa; a vector of celery calico virus in violets.

Four other aphids: *Aphis rubicola* Oestl., *Amphorophora rubi* (Kalt.), *Amphorophora sensoriata* Mason and *Masonaphis rubicola* (Oestl.), have been shown to transmit, to a greater or less extent, raspberry mosaics in New York.

NATURAL CONTROLS AND ANTS

There are many natural factors which tend to limit the numbers of aphids. Without their action the practical reduction of the crop losses they cause would be very much more costly, if not indeed sometimes impossible. Cool rainy weather slows reproduction and encourages the development of several fungous diseases which can rapidly wipe out enormous numbers of aphids. Hot dry spells are also unfavorable to reproduction. Parasites and predators are nearly always present among colonies of aphids and often become so abundant as to entirely eliminate them. Only a few of these tiny wasp-like parasites (mostly Chalcids and Braconids) have been so far reared and identified from aphids in New York. The predators are chiefly various species of the ladybird beetles and their larvae, nabid bugs, syrphus fly larvae and the larvae of lacewing flies and of ant-lions. Many kinds of birds feed on aphids and their eggs thus tending to keep their numbers down.

In a 3-year (1958–60) as yet unpublished study of the ecology of *Macrosiphum euphorbiae* (Thos.) and *Myzus persicae* (Sulz.) on potatoes at Riverhead, Long Island, W. A. Day and W. A. Rawlins observed the predators which were feeding on these two aphids. They have kindly given me the names of these for inclusion in this paper. Coccinellids (ladybird beetles) made up most of the total, the dominant species of which were *Coccinella 11-punctata* L. (55%) and *C. 9-notata* Hbst. (19%). Other insects observed were: lacewing flies (Chrysopidae), *Chrysopa* spp. (*plorabunda* group); the nabid bug, *Nabis ferus* (L.); and the flower-flies or Syrphidae, *Mesograpta marginata* (Say) and *Metasyrphus weidemanni* (Johnson). The potato aphid was parasitized to a much greater extent than the peach aphid; but fungi, *Entomopthora* spp., attacked the green peach aphid almost to the exclusion of the potato aphid.

The close association of aphids and ants has long been known and almost every account of the habits of aphids mentions them as the ants' "cows". The ants feed on the sweet honeydew secreted by the aphids and often carry them to other parts of the plant, or even to other plants, and so aid in the destruction of the host. Some aphids are said to be

entirely dependent upon ants. For example, in the case of the corn root aphid, the association is so close that the ants even care for its eggs during the winter. Although ants associated with colonies of aphids have been collected from time to time in New York, few of these insect husbandmen have been determined.

SOURCES OF INFORMATION

Many persons over a period of many years have contributed to our knowledge of the aphids of New York. Those who have done only incidental collecting or have only occasionally made observations are mentioned in the text in connection with individual records. There follows the names of those who have paid more than superficial attention to aphids in the state with a brief statement of the nature of the contribution of each. These are given chronologically in order to show the historical sequence of their activities. The appreciation of the writer is here expressed to all of those, past and present, who have made this List possible.

C.S.R. Rafinesque. The earliest aphids studied in New York, and indeed in the United States, are those collected by the brilliant young French naturalist, Constantine Samuel R. Rafinesque (1783–1840). He was living at the time near Newburgh in the lower Hudson River Valley and his collections were made in that vicinity and on western Long Island. As a result he described 36 new species in two papers in the American Monthly Magazine and Critical Review—species Nos. 1 to 12 under the title of "Specimens of several new American species of the genus aphis.", in Vol. 1 No. 5:360–361, 1817; and species Nos. 13 to 36 under the title of "A second memoir on the genus aphis containing the descriptions of 24 new American species.", in Vol. 3 No. 1:15–18, 1818.

Dr. F. C. Hottes has carefully analyzed Rafinesque's two papers in an attempt to determine the validity of these species. The results of this study were published in a paper entitled "Notes concerning the first papers dealing with the aphid fauna of America.", (Proc. Biol. Soc. Wash. 44:61–69, 1931). Hottes concluded that 9 species are unrecognizable aphids and one is not an aphid. Thirteen of the remaining 26 names he considered to be synonyms, so that the net number of definitely or probably valid species becomes 13.

Asa Fitch, M.D. (1809–1878), when acting as State Entomologist, was the next to pay some attention to aphids in New York. He described 39 new species, all except 3 of which are recognizable. In many instances he gave detailed observations on their habits or injuriousness. This was done in his "Catalogue of the Homoptera of New York", 1851; and in his First & Second Reports (combined), 1856; Third Report, 1856; Fourth Report, 1858; Fifth Report, 1859, and the Thirteenth Report,

1870. Louise M. Russell of the United States Department of Agriculture has clarified the references to Dr. Fitch's Reports and Catalogues in her valuable paper in Ann. Ent. Soc. Amer. 53 (3):326–327, May 1960.

Paul Hayhurst (1878–1946), while a graduate student in entomology at Cornell, 1905–1906, made about 50 collections of aphids mostly around Sheridan, Fredonia and Dunkirk on Lake Ontario in western New York. These were determined in 1936 by Dr. A. N. Tissot of the University of Florida. About 36 species were involved, 10 of which had not previously been known to occur in New York.

C. P. Gillette, Ph. D. (1859–1941) of Colorado State University, collected aphids at several localities in New York in 1909. He gave notes on about 34 species, several of which are our earliest records for the state, in the Jour. Econ. Ent. in 1909 and 1910.

Chris E. Olsen (1880–) when on the staff of the American Museum of Natural History, collected aphids during the seasons of 1913 and 1914 around his home at Maspeth, Long Island. Determinations were made for him by J. J. Davis and the late Edith M. Patch. He published these records in the Bull. Brooklyn Ent. Soc. 16:14–19, 1921. Here are listed 53 species, together with their food plants, several of which have not since been collected in the state. Slides are in the American Museum of Natural History.

At the writer's suggestion he resumed collecting in 1947 and 1948, this time at his home in West Nyack. During these years, and again in 1958 through 1960, he made at least 75 collections. Slides are in Cornell University.

Harold Morrison, Ph.D. (1880–), while a graduate student in entomology at Cornell University, collected aphids at Ithaca and vicinity from the fall of 1912 into the summer of 1914. This work involved about 30 valid species; several first records, or early records, for the state were included.

Ephraim Porter Felt, Ph.D. (1868–1943), when State Entomologist of New York, started about 1914 to compile the list of aphids for the proposed "List of the Insects of New York". Although this was not finally published until 1928 ("A List of the Insects of New York", Cornell Univ. Agr. Exp. Sta. Mem. 101, 1928), the basic list of aphids is Dr. Felt's, even though it was later modified by Baker and Mason, Patch and Leonard. This was the first attempt to inventory the aphids of the state. In it 128 species are treated (pp. 184–192).

Grace H. Griswold, Ph.D. (1872–1946), a member of the Department of Entomology at Cornell University, started collecting and studying aphids around Ithaca in 1921 and continued until her tragic death early in 1946. She also encouraged members of the staff and graduate students to collect. She made hundreds of slides and many determinations (often

verified by Patch and Essig). It is quite probable she made a greater over-all contribution to knowledge of the aphids of New York than any other single person.

John L. Horsfall, Ph.D. (1888–), while at the Boyce Thompson Institute for Plant Research at Yonkers, collected about 18 species (on 87 slides). These are among the earliest records for Westchester Co.

M. D. Leonard, Ph.D. (1890–) and *C. R. Crosby, B.S.* (1879–1937), starting in the fall of 1932 and continuing through 1946, made more than 300 collections, separately and together, in several parts of the state. Most of these were determined by Dr. A. N. Tissot of the University of Florida and represented about 80 species. The records were published by Leonard in a paper entitled "Additions to the New York State List of Aphids with notes on other New York Species.", (Jour. N. Y. Ent. Soc. 44:177–185, 1936). In this, 42 species are recorded as new to the state, thus bringing the total up to 170. Slides are in Tissot's collection and that of Cornell University.

Franklin S. Blanton, Ph.D. (1902–) made about 50 aphid collections while stationed for the United States Department of Agriculture at Babylon, Long Island in 1932–34. Determinations were made by P. W. Mason and A. N. Tissot and slides are in the collections of Tissot, United States National Museum and Cornell University.

Kenneth E. Maxwell, Ph.D. (1908–) while on a special assignment made a number of collections in and near Locust Valley, Long Island in 1934–36. Tissot and the writer made the determinations and the slides are in the collections of Tissot and Cornell University.

Paul J. Chapman, Ph.D. (1900–) and *Foster L. Gambrell, Ph.D.* (1900–), of the New York (Geneva) Agricultural Experiment Station, made about 35 collections from woody shrubs and shade trees in and near Geneva in 1946. About two-thirds of these represented different species, several of which had previously been little known in the state. Mason made the determinations and the slides are in the United States National Museum.

Roy Latham (1880–), of Orient, Long Island, is a vegetable grower and a self-taught naturalist. He has operated an extensive truck farm at Orient for most of his adult life. In addition, starting as a young man, he has built up enormous collections covering the whole fauna and flora as well as the archaeology of Eastern Long Island. Although he had long collected a few aphids from time to time, the writer induced him to pay particular attention to these insects in 1946. During this year through 1949 and from 1957 through 1960, Roy Latham made something over 1,200 collections. These represent about 140 determined species of aphids on about 250 plants from which aphids have been determined. A number of his collections still remain to be determined. About 40% of the aphids

known to occur in New York have been collected by Latham on Long Island. His contribution to our knowledge of the aphids of New York is certainly second only to that of Grace Griswold. The slides are mostly in Cornell University but many from his 1959 and 1960 collections are also in the collection of Dr. Clyde F. Smith. (It may be of interest to note that during 1961 Roy Latham made about 340 additional collections, almost entirely around Orient, with most of the others at Greenport, less than 10 miles to the west).

Laverne L. Pechuman, Ph.D. (1913–) when residing in Lockport, collected aphids in the northwestern part of the state, chiefly in Niagara, Genesee, Orleans and Monroe Counties, from 1958–1960. During these three years he made nearly 600 collections, representing about 114 determined species (32% of the total), on a great many plants in a section of the state from which only a few aphids had previously been recorded. Many of his aphids and their food plants were new to New York and a number of others were little known. Most of this material has been determined or verified by Dr. C. F. Smith and the slides are in his collection and that of Cornell University. Dr. Pechuman, as of July 1962, is Curator of Insects at Cornell University.

John Graham, M.Sc. (1930–), while a graduate student in biology at Cornell University, made a few collections at Ithaca in 1958 and in 1959 at Mount Kisco and at Shackleton Point on Lake Oneida. His collections contain several things of interest, including the first record for the state of *Periphyllus americanus* (Baker). In 1960 he collected further at Mt. Kisco and on Shelter Island, Long Island. In all he made about 85 collections. Slides are in the collections of Dr. C. F. Smith and of Cornell University.

Edwin Rundlett, B.S. (1896–), for sometime past has been Horticulturalist for the Parks of Staten Island. Because there were so few records of aphids from Staten Island, the writer induced him to make some collections. Although he only started in October 1960 he made about 15 collections from several different plants in addition to more than 50 alates in a Moericke trap. Slides are in Cornell University.

John A. Wilcox, M.Sc. (1921–) of the Office of the State Entomologist of New York, made 14 collections of aphids in 1959 from Albany and vicinity and from Catskill and vicinity, and several others in 1950, 1951 and 1955. The records are of value largely because so little collecting has been done around Albany or in the Catskills. Slides are in Cornell University.

LIST OF APHIDS

In the following notes a general attempt has been made to arrange the records for each aphid geographically, starting in the western part of the state, working eastward and then down the Hudson River Valley, ending

up with Staten Island and Long Island. Within this pattern, the records are generally given chronologically. Consistency in such an arrangement, however, has not been adhered to when logical factors intervene.

The names of the aphids are arranged alphabetically, by genera and by species in each genus. The listing thus provides its own index, although the List of Food Plants appearing after the aphid list may sometimes offer a quicker way to find many of the species.

The following abbreviations are used in the listing: Cornell University, CU—Long Island, LI—Staten Island, SI—United States National Museum, USNM—Special Survey of Ports of Entry by the United States Department of Agriculture Plant Quarantine Inspection, Sp Port Surv—New York List of Insects 1928, NYL- American Museum of Natural History, AMNH—United States Department of Agriculture, USDA.

Amphorophora crataegi (Monell) Four-spotted Hawthorn Aphid

ITHACA 18 Sept 1934, CAYUTA LAKE 13 Sept 1934 (oviparous females present) and BARRINGTON 19 Sept 1934, on leaves of *Crataegus* sp., (all Leonard and Crosby coll). ITHACA 8 Oct 1933, common on *Crataegus* sp., (Crosby coll). SI: PORT RICHMOND 1 Sept 1943, on leaves of *Crataegus* sp., (Sp Port Surv). LI: GREENPORT 27 Sept 1957, 22 Jl 1958, SOUTHOLD 17 Oct 1957 (males present), on *C. crusgalli,* 13 Jl 1958, on *C. anomala,* and GREENPORT 2 Aug 1959, on *C. macrosperma,* (all Latham coll—det MDL).

> W. H. Wellhouse (Cornell Univ. Agr. Exp. Sta. Mem. 56:1063–4, 1922) states: "The apterous females of *Macrosiphum crataegi* [syn.] may be found from late May until October on the native hawthorns at Ithaca, and during July and August the species may become so abundant as to seriously injure the trees. During the summer of 1919 the writer saw a small *Crataegus pruinosa* tree killed and a very large *C. punctata* tree almost entirely defoliated due to the sucking of the sap by myriads of these aphids. They are rather large, yellowish-green aphids, with long cornicle, and their most recognizable character is the presence of four dark green spots arranged in a rectangle on the dorsum of the abdomen. The entire life history is passed on *Crataegus* trees. The black winter eggs are placed on the twigs and the smaller branches. They begin to hatch in May, after the leaves are well opened. The young aphids move to the lower surface of the leaves, and their feeding, as the colony increases, causes the leaves to curl downward. In late June an alate brood appears and migrates to nearby branches or trees to start new colonies. It is after this appears that the species becomes so injurious."

Amphorophora laingi Mason

SHERIDAN Jl 1905, on *Onoclea sensibilis,* (Hayhurst coll; PARACOTYPE in USNM marked "Hayhurst No. 209, Pergande No. 9986"). TONAWANDA INDIAN RES. Erie Co. 9 Aug, on *O. sensibilis,* 18 Jl 1960, on *Pteretis nodulosa,* (Pechuman coll—CFS det).

Amphorophora nabali Oestlund

LI: EAST HAMPTON, SAG HARBOR 22 Sept 1946, on *Prenanthes trifoliata,* (Latham coll).

Amphorophora nervata Gillette?

LI: RIVERHEAD 27 Sept 1946 (1 alate and several nymphs), on *Arctostaphylos urvi-ursa*, (Latham coll).

Amphorophora rhododendronia Mason?

LI: FARMINGDALE 7 Dec 1948, on *Rhododendron* sp., (G. V. Johnson coll; 1 slide in USNM det with query).

This species was described from a single slide bearing 4 apterae which were collected by Dr. Edith M. Patch at Orono, Maine, 21 Jl 1922. There are apparently no other records of its occurrence.

Amphorophora ribiella (Davis) Ornamental Currant Aphid

ITHACA 18 Sept 1936, on *Ribes nigrum*, (Crosby coll—LMR det).

Amphorophora rossi Hottes and Frison

LI: MATTITUCK 10 Jl 1958, ORIENT 30 Jl 1959, on *Geum canadense*, (Latham coll).

Amphorophora rubi (Kaltenbach) European Raspberry Aphid

"HUDSON RIVER VALLEY" no date, on raspberry, (S. W. Harman coll ex Patch; 1 slide in USNM), 23 Apr, 5 Jl, on red raspberry, (W. H. Rankin coll; 1 slide in USNM). NEW PALTZ, HIGHLAND 5 Ju 1924, on red raspberry, (W. H. Rankin coll; 1 slide in USNM). GENEVA 30 Sept 1922, on red raspberry, (2 slides in USNM), 18 Apr, 1, 8, 15, 29 and 31 May 1925 (W. H. Rankin coll; 4 slides in USNM) and 20, 21, 24 and 26, Oct 1947 (F. G. Mundinger coll; 6 slides in USNM). NORTH FAIRHAVEN 2 Jl 1939, on *Rubus ideaus* var. *strigosus*, (Griswold coll—Griswold and Essig det; 1 slide of 1 aptera verified by LMR). ORIENT 26 Jl 1951 (Latham coll—LMR det), 22 Jl 1960, on *R. phoenicolasius*, (Latham coll—det CFS with query).

From L. M. Cooley, N.Y. (Geneva) Agr. Exp. Sta. Bull. 655:4–5, 1936, during a study of raspberry mosaics in Western New York (1931–35): "*Amphoraphora rubi* (Kalt.) was found to be the chief vector . . . maintaining a steady population in most of the red raspberry stocks [*Rubus idaeus* principally *strigosus*] quite in contrast to its widely fluctuating populations on cultivated raspberries . . . . On wild raspberries peak infestation was reached in mid-June each season with a secondary peak in October . . . . Counts made near Brant and North Collins June 12, 1933, showed 23 *A. rubi* per shoot on extra vigorous wild red raspberries growing in partial shade, 8 per shoot on medium growth, and only 3 per shoot on low stunted growth in an open pasture lot.

"Wild black raspberries [*Rubus occidentalis*] appear to be much less favorable hosts of this aphid. Single specimens and small colonies were found occasionally on young shoots in late May and early June of each season, but strong colonization of this host was never observed, and in no instance was the infestation on a given plant seen to survive through the summer. No winged forms were found. No *A. rubi* were ever observed occurring naturally on wild blackberries [mostly *Rubus allegheniensis*]. A number of attempts to transfer the aphids artificially from cultivated red raspberries to the tips of wild blackberry shoots failed to establish colonies."

Amphorophora sensoriata Mason

ITHACA 12 Aug 1933, 9 Sept 1934, FREEVILLE 15 Sept 1934, on wild raspberry canes, (Leonard and Crosby coll). RINGWOOD Tompkins Co. 24 Sept 1933, on wild raspberry, (Crosby coll).

> As a result of a study of virus diseases of raspberries in western New York from 1931-1935 L. M. Cooley stated that *Amphorophora sensoriata* was found only occasionally. It was observed only on the undersides of trailing black raspberry shoots (*Rubus occidentalis*) in late summer and fall, feeding only on the canes proper. He did not consider it an important factor in general mosaic spread in western New York.—N.Y. (Geneva) Agr. Exp. Sta. Bull. 665:5, 1936.

Amphorophora sonchi (Oestlund) Sowthistle Aphid

In Can. Ent. 94 (7): 781, 1962 W. R. Richards gives this species as a synonym of *Nasonovia* (*Hyperomyzus lactucae* (L.)), following V. F. Eastop in Aphididae of West Africa, p. 35, 1961.

ITHACA 9 Sept 1933, on *Lactuca canadensis*, (Crosby coll), 17 Sept 1934, on *Sonchus asper*, (Leonard coll), 9 Oct 1932, on currant, (Leonard and Crosby coll) and 29 Jl 1939, on *S. oleraceus*, (Griswold coll). GENEVA 20 Oct 1946 (male, and a female ovipositing), on ornamental *Ribes* sp., (P. J. Chapman coll—Mason det). LOCKPORT 9 Aug 1958, 12 Jl 1959 and 16, 23 Ju 1960, on *Sonchus oleraceus*, 9 Aug 1958, on *S. asper*, 8 Oct, on *Ribes dowingiana*, 17 Oct, on *R. hirtellum*, 9 Oct 1959, on *R. sativum*, (fall migrants included in *Ribes* collections) 4, 23 Oct 1959 (fall migrants), on *Saxifraga* (*Bergenia*) *crassifolia* and 16 Ju 1960, on *Sonchus oleraceus*, (all Pechuman coll—CFS det). ALBION 20 Aug 1959, on *S. arvensis*, 5 Oct 1959 (fall migrants), on *Saxifraga* (*Bergenia*) *crassifolia*, (both Pechuman coll). LI: ORIENT 14 Jl 1946, QUOGUE 10 Oct 1948, on *Sonchus oleraceus*, (Latham coll).

> On 22 May 1960 Dr. Pechuman wrote of the Lockport collections that these species of *Ribes* "are covered with the aphids and those on *R. hirtellum* cover the terminal growth but none are present on the terminals of *R. sativum*, being restricted to the leaves".

Anoecia corni (Fabricius)

ITHACA Aug, Sept 1932, 1934, on *Cornus stolonifera*, *C. amomum*, 4 Sept 1933, on roots of *Dactylis glomerata*, (Leonard and Crosby coll). WEST DANBY Oct 1932, on *C. amomum*, ETNA Oct 1932, on *C. stolonifera*, (Leonard and Crosby coll). MCLEAN, CAYUTA LAKE and BARRINGTON Sept 1934, on *C. candidissima*; BATAVIA Sept 1934, TAUGHANNOCK 4 Sept 1933, on *Cornus* sp., (Leonard and Crosby coll) and 26 Sept 1938, on *C. candidissima*, (Griswold coll). GENEVA 20 Sept 1946, on *Cornus* sp., (Chapman coll—Mason det). LOCKPORT 16 Sept 1946, 17, 25 and 29 Oct 1959, 10 Oct 1960 (with query) and 1 Nov 1958, ZOAR VALLEY Erie Co 20 Sept 1959 and OAKFIELD 11 Sept 1958 "very abundant", all on *Cornus stolonifera*, (all Pechuman coll). LOCKPORT 10 Oct, on *C. florida*;

OLCOTT Keg Creek 5 Oct, on *C. rugosa,* and GASPORT 24 Sept 1960, on *C. alternifolia,* (Pechuman coll; det CFS with query). SI: CASTLETON CORNERS 20 Nov 1960 (1 fall migrant and 1 summer alate in "Moericke trap"; Rundlett coll—J.O. Pepper det).

Anoecia querci (Fitch)

NYL – Ithaca, very common on leaves of red oak.

ITHACA 3 Sept 1933, on roots of foxtail grass, (Leonard and Crosby coll). GENEVA 17 Oct 1945, on *Cornus foemina,* (Gambrell coll—Mason det). LI: WESTBURY 12 Apr 1935, on oak, (Bartlett Tree Res. Labs.); ORIENT 12 Oct 1958, on roots of *Eleusine indica,* (Latham coll).

Fitch's original account of this aphid is as follows: "306, Oak Blight, *Eriosoma querci,* new species. (Homoptera, Aphidae). A species of blight, or a woolly aphis on oak limbs, puncturing them and exhausting their sap, was met with in Northern Illinois, but I have never seen it in New York." (Fifth Rept., p. 804, 1859).

Anuraphis bakeri (Cowen) Clover Aphid

EAST AURORA 10 Aug 1933, on clover, (Leonard and Crosby coll). ITHACA 24 Oct 1932, alates on apple leaves, (Leonard coll—Tissot det), 1 Dec 1938, on clover *Trifolium* sp. in greenhouse, (Griswold coll; in CU). GENEVA 18 Oct probably 1918, from apple, (F. H. Lathrop coll—Patch det; Me. Agr. Exp. Sta. Lot Book). YONKERS 21 Ju 1921, on *Trifolium hybridum,* (J. L. Horsfall coll). GRAND ID. Erie Co. 7 Ju 1959, on *Crataegus* sp., (Pechuman coll—CFS det). MT. KISCO 1 Aug 1960, on *Trifolium pratense,* (John Graham coll—det MDL with query). LI: DELWOOD 28 Jl 1933, on clover, (Leonard coll—Tissot det); SHELTER ID. 28 Jl 1960, on *Trifolium pratense,* (Graham coll—CFS det).

Presumably widely distributed in the state and probably locally common on red clover and also occurring on apple but few substantiating records.

Anuraphis carduella (Walsh)

ITHACA – about the middle of October 1913 (winged males and oviparous females were obtained on *Cirsium vulgare;* often occurred in company with *A. cardui* L.; presumably the first record of this aphid in the state, Morrison coll).

Anuraphis cardui (Linnaeus) Thistle Aphid

NYL – In addition to annotated localities given below SCHOHARIE Ju and RENSSELAER are also listed.

RICHFIELD SPRINGS 2 Sept (male and ovip. female in copula), 1, 6 Oct 1887 (? Pergande coll; in USNM), 27 Aug 1887, on plum, (Wm. D. Alwood coll; in USNM). ONEIDA 18 May 1889, on plum, (J. Lawrence coll; in USNM). SHERIDAN Jl 1905, on *Cirsium (Cnicus) vulgare,* (Hayhurst coll). GENEVA 29, 30 Ju 1909, on *Carduus* sp., (Gillette,

J. E. E. 3(5) : 404, 1910). ITHACA about middle and last of October 1913 (winged males and oviparous females were present), on *Cirsium vulgare*, (Morrison coll), 18 Jl 1928, on *Centaurea* sp., (Griswold coll—Patch det). ST. REMY 26 May 1921, on Burbank plum, (Crosby coll; in USNM). NORTH FAIRHAVEN 2 Jl 1939, on Italian prune *Prunus domestica*, (Hansberry coll—Essig det). ITHACA 13 Ju 1939, on *Onopordum acanthium*, (Griswold coll—Russell det, 1960). WILSON 13 Ju 1946, on *Prunus domestica*, MEDINA 10 Jl 1958, on *Cirsium vulgare*, (Pechuman coll). LYNDONVILLE 28 Sept 1960, on *Prunus armeniaca*, (Pechuman coll—CFS det). LI: ORIENT 8 Jl 1959, 23 Jl 1960, respectively on unopened buds and in top of plants of *Cirsium vulgare*, GREENPORT 17 Jl 1959, on *C. vulgare*, 1 Sept 1957, on *C. discolor*, (all Latham coll).

Quaintance and Baker (US Farmer's Bull. 1128, p. 14, 1926 revise) state that in some localities this aphid is abundant on plum trees and that trees have been observed in the vicinity of Washington, D. C., with the underside of nearly every leaf thickly covered with the insects. Although widely distributed the thistle aphid has not been recorded as becoming abundant on plums in New York.

Anuraphis helichrysi (Kaltenbach) Leaf-curl Plum Aphid

LI: ORIENT 12 Ju 1958, on *Erigeron annuus*, (Latham coll—LMR det).

Anuraphis maidiradicis (Forbes) Corn Root Aphid

NYL – ALBANY, on *Aster* sp..

ITHACA 12 Aug 1933, on roots of yellow sweet clover, (Leonard and Crosby coll). LI: HICKSVILLE 27 Sept 1943, on beet roots, (Tuthill coll—Mason det; Sp Port Surv); ORIENT 7 Sept 1947, on roots of *Cosmos bipinnatus*, (Latham coll); WEST NYACK Nov 1960 (many "pupae", several apterae, 3 alates), on roots of carrot, (Olsen coll—MDL det).

Anuraphis persicaeniger (Smith) Black Peach Aphid

OLCOTT 17 Nov 1892, on stems and roots of peach trees, (J. O. Lockwood coll—Tissot det; in CU). IRONDEQUOIT 14 Jl 1938, on roots of *Prunus persicae*, (E. M. Hildebrand coll—Essig det).

"A correspondent in Niagara Co. has introduced this pest into his orchard from a nursery in Delaware. So far as we know this is the first instance of occurrence of the insect in the state"; (M. V. Slingerland, Cornell Univ. Agr. Exp. Sta. Bull. 49, 1892). The Lockwood slide substantiates this statement. L. E. Strickland reports on 19 June [year looks like 1921] "normal abundance" of this aphid in Niagara Co.. "Found on peach in small numbers in Ulster Co." (C.C. Wagoner, May 24, 1924). R.G. Palmer, 15 Jl 1923 reports "quite abundant this season" in Monroe Co.. Sidney Jones, 14 May 1928 reports "Black peach aphid found quite abundantly on young peach trees near Warwick". E. E. Frane reports 10 Jl 1928 that this aphid was not observed in Wayne Co.

Anuraphis rosea Baker Rosy Apple Aphid

Stroyan in "The British Species of Sappaphis Matsumura", p. 24, 1957, states that the correct name of this species is *plantaginea* Passerini (1860), which he places in the genus *Sappaphis*. Because it is so thoroughly entrenched in American economic literature Baker's specific name is here retained.

It appears that the earliest reference to the occurrence of the rosy apple aphid in New York is by Prof. J. H. Comstock in the Report of the Entomologist, Cornell Univ. Agr. Exp. Sta. Ann. Report 6 (1893): 20–21, 1894. It is here stated that "work is now in progress on a monographic account of the apple aphids (*A. mali*) [=*Aphis pomi*] and the apple leaf aphis (*A. sorbi?*) [=*Anuraphis rosea*]; the latter has heretofore been treated as a variety of *A. mali* in this country. Both species have been carefully traced on the apple tree and all the forms occurring there studied." Dr. Robert Matheson (Cornell Univ. Agr. Exp. Sta. Mem. 24: 720, 1919) says in regard to this statement: "His reference to *Aphis sorbi* is given with a question mark. However, through the kindness of J. J. Davis, who has recently examined the Monell Collection, the writer can state that the species to which Comstock referred is *Aphis sorbi* Kalt. Mr. Davis found specimens of this species sent by M. V. Slingerland in September, 1893 to Monell and Comstock's reference is certainly to this material."

The rosy apple aphid is undoubtedly present every season on apples wherever they occur in the state and in some years is a serious pest in commercial apple orchards. It is the most important aphid attacking the fruit and foliage of the apple. To quote Quaintance and Baker (U.S.D.A. Farmers' Bull. 1128, pp. 3–4, 1926, rev.): "The rosy aphid infests especially the foliage surrounding the blossom or fruit clusters and causes the leaves to curl badly. The insects when abundant also infest the fruit stalks and newly set fruit. The little apples on the infested fruit spurs often fail to thin out, remain small, and as the season progresses become knotty and distorted according to the degree of infestation. In the fall these 'aphid apples' may be much in evidence, especially on the lower parts of the tree, during worst aphid seasons amounting to from 15 to 30 per cent of the crop." Very young trees are often twisted and deformed from excessive feeding on the young shoots.

The seasonal history of this injurious aphid in New York may be summarized as follows: After producing three or four generations on apple, winged forms begin to appear which migrate, usually late in June at Ithaca, to their summer food plants, the narrow-leaved plantain or ribgrass (*Plantago lancolata*) and the broad-leaved or common plantain (*P. major*), the former being much preferred in New York. At least six generations are produced on plantain following which special winged forms appear which return to the apple. These consist of viviparous females and males. In the region of Ithaca they begin to appear late in September, the winged females developing first, and continue to return to the apple throughout the whole of October, reaching the maximum about the middle of the latter month. Production of oviparous females soon begins on the apple. The males begin appearing somewhat later and continue migrating to the apple well into November. Mating soon occurs and the resulting eggs are attached to the bark of the twigs and sometimes the branches where they remain until hatching time in the spring. (The foregoing is taken from "A Study of the plant lice injuring

the foliage and fruit of the apple" by Robert Matheson; Cornell Univ. Agr. Exp. Sta. Mem. 24, June 1919).

In July 1961, Dr. P. J. Chapman, Entomologist of the New York (Geneva) Agricultural Experiment Station, wrote me in respect to this aphid in New York on apples: "Generally but unevenly distributed throughout the state; varying widely in annual abundance. Seriously dwarfs fruit and may render up to 90% of crop unsaleable in outbreak years. Susceptible apple varieties receive 'preventive' control measures annually."

Anuraphis rumexicolens Patch

NEW YORK Botanical Gardens 17 Jl 1932, on *Dahlia* sp., (Philip Brierley coll—? Mason det; in USNM).

Anuraphis tulipae (Fonscolombe) Tulip Bulb Aphid

ALBANY 18 Jl 1908, on gladiolus bulb, (Felt coll—Patch det; Me. Agr. Exp. Sta. Lot Book). NEW YORK Botanical Gardens 21 Oct 1932, on *Dahlia* sp., (Philip Brierley coll; in USNM). SI: Mar or Apr 1954, 1 Oct, 7 Nov 1960, on leaf bases of bearded iris; also 2 in Moericke trap 1, 7 Nov 1960 (E. A. Rundlett coll—J. O. Pepper det). LI: BAYSIDE 16 Apr 1932, on *Iris susianna,* (Fields, Plummer and Griffith coll; Sp Port Surv); BROOKLYN 7 Apr 1932, on bulbous iris *Hollandia hispanica,* (USNM), 19 Nov 1938, abundant in leaf sheaths and on surface of leaves near ground of *Iris* spp. including *I. ensenata,* (L. Gordon Utter coll—Mason det); BABYLON 27 Oct 1939, on iris bulbs in storage, (Blanton coll—Mason det; in USNM); ORIENT 7 Nov 1947, on bulbs, roots and leaves of *Gladiolus gandevensis* var., (Latham coll); FARMINGDALE 30 Nov 1948, on bulbous iris, (G. V. Johnson coll; in USNM).

Described by Dr. Felt under the name of *Aphis gladioli* n. sp. from Berlin on gladiolus (24th Rept. N.Y. State Ent. for 1908, p. 19, Sept 1909). In J.E.E. 1:330, 1908 Dr. Felt says "large numbers on base of bulbs around origin of roots starting in spring in storage house—gets very abundant."

Anuraphis viburnicola (Gillette) Snowball Aphid

ITHACA 17 Oct 1932 (Leonard coll), 18 Sept 1934 (Leonard and Crosby coll), on *Viburnum opulus;* 15 May 1939, on *V. lentago,* (Hansberry coll), 20, 24 May and 1, 10 Ju 1936, on *V. acerifolium,* (Otelia Francis coll—Patch det; Me. Agr. Exp. Sta. Lot Book). FREEVILLE 15 Sept 1934, on *V. dentatum, V. lentago,* (Leonard and Crosby coll). NEW YORK Central Park 18 May 1941, on *V. opulus,* (AMNH). HAINES FALLS 17 Jl 1959, on *V. recognitum,* (J. A. Wilcox). LI: MASPETH 21 Ju 1914, on *Viburnum* sp., (Olsen coll); BABYLON 31 May 1939, common on wild *Cornus* sp., (Blanton coll); ORIENT 26 May 1959, on *Viburnum plicatum,* 4 Jl 1959, on *V. dentatum,* MATTITUCK 8 Nov 1947, on *V. opulus,* (all Latham coll).

Undoubtedly occurs throughout the state, curling the leaves of the snowball on which it spends the winter.

Anuraphis viburniphila (Patch) Viburnum Aphid

ITHACA 12 Ju 1936, NORTH FAIRHAVEN 21 Ju 1936, on *Viburnum acerifolium*, (O. Francis coll—Patch det; Me. Agr. Exp. Sta. Lot Book). ITHACA 22 May 1939, McLEAN 27 Ju 1939, on *V. dentatum*, (Hansberry coll—Essig det). SCARSDALE Ju 1925, on *Viburnum* sp., (S. W. Bromley coll). GENEVA 20 Oct 1946 (scarce, ovipositing), on *V. dentatum*, (Chapman coll—Mason det). ROCHESTER 1943, on *V. opulus*, (Gambrell coll—Mason det). LOCKPORT 8 Ju 1959, on *V. opulus*, (Pechuman coll—CFS det). LI: ORIENT 21 Ju 1946, common on *V. opulus*, (Latham coll); MT. KISCO 8 Jl 1960, on *V. recognitum*, (Graham coll—CFS det).

Aphis spp.

The following records, though incomplete, are here included because of the uniqueness or rareness of the plants as aphid food hosts:

ITHACA 29 Jl 1929, on Shasta daisy *Chrysanthemum maximum*, (Griswold coll—MDL det; 1 slide with 5 apterae in CU); only aphid record on this plant for NY; I find none elsewhere.

ITHACA 20 Jl 1939, on caraway *Carum carvi*, (Griswold coll; 3 slides with alates and apterae in CU); only aphid record on this plant for NY; very few elsewhere.

LI: ORIENT 19 Jl 1959, on watercress *Nasturtium officinale*, (Latham coll—MDL det); I find no record of an *Aphis* on watercress elsewhere in this country.

LI: GREENPORT 26 Jl 1929, on roots and base of stem of *Sanicula canadensis*, (Latham coll—MDL det); only NY record on this plant; elsewhere I find only *Aphis signatus* H. and F. in Illinois described from *Sanicula* sp.

On August 26, 1916, M. D. Leonard wrote Edith M. Patch as follows: "I am sending you under separate cover a small vial containing a few specimens of a plant louse which I found very abundant in large golden seal patches at Fulton, N. Y. (these were cultivated plantings grown under slats), and although they do not seem to be injuring the leaves to any appreciable extent I should like to know very much what this species is." In Miss Patch's reply of Sept 1, 1916, she states that "the species is new to me and is apparently undescribed for America at least." She gave it the manuscript name of *Aphis hydrasticolens*. Unfortunately the slide made from this material was later discarded by Miss Patch so that the true identity of the aphid can never be determined. There seems to be no other record of an aphid occurring on golden seal, *Hydrastis canadensis*.

Aphis armoraciae Cowen Western Aster Root Aphid

ITHACA 7 Aug 1933, on roots of phlox, (MDL coll—det Tissot as *middletoni* but with a query since all specimens were immature). LI: ORIENT 7 Jl 1959, on roots of *Rumex obtusifolia* and *Erigeron canadensis*;

MATTITUCK 16 Oct 1959, on roots of *Aster laterifolius* and *A. simplex*, (Latham coll).

Essig, in Hilgardia 1(9): 473, 1938, states that this species occurs in New York although the source of this information is not given.

Aphis asclepiadis Fitch

Fitch, as a n. sp. in Cat. Homop. N. Y., p. 65, 1851: "on lower surface of young leaves of the common silk-weed. No. 845, male." Three slides from Fitch collection are in the USNM.

SHERIDAN Jl 1905, 1906, on *Asclepias syriaca* (*cornuti*), (Hayhurst coll). GENEVA 1 Jl 1909, on *Asclepias* sp., (Gillette, J. E.E. 3(5): 404, 1910). EAST AURORA 10 Aug, ITHACA 12 Aug 1933, on milkweed, (Leonard and Crosby coll). ITHACA 14 Jl 1939, on *Asclepias syriaca*, (L. Cutcomp coll—Essig and Griswold det), 1934, on *Apocynum cannabinum*, (Nellie C. McAllister coll—Patch det; Me. Agr. Exp. Sta. Lot Book). LYNDONVILLE 5 Jl 1960, on *Asclepias syriaca*, (Pechuman coll—det CFS with query). LI: BRIGHTWATERS 13 Jl 1934 on *Asclepias* sp., (Blanton coll; in USNM); GREENPORT Ju 1958, Jl 1959, ORIENT 1 Jl 1958, on *Apocynum cannabinum*, 3 Jl 1959, on *Asclepias syriaca*, and MATTITUCK 18 Ju, 2 Jl 1959, on *A. syriaca*, (all Latham coll).

Aphis asterensis Gillette and Palmer Little Black-veined Aster Aphid

LI: GREENPORT 17 Jl 1957, on *Aster novae-belgi* in flowerheads, (alates and apterae; Latham coll). This beautiful little aphid is presumably recorded elsewhere only from Colorado on *A. ericoides*, rather rare.

Aphis cephalanthi Thomas

W. SHELBY 6 Sept, TONAWANDA INDIAN RES. Erie Co. 9 Aug, 3 Sept, LOCKPORT 1 Oct, GASPORT 24 Sept and BARRE Burma Woods 1960, all on *Cephalanthus occidentalis*, (all Pechuman coll—CFS det). LI: WADING RIVER 30 May 1913, on *C. occidentalis* (Olsen coll); SOUTHOLD 11 Aug, EAST HAMPTON 8 Sept, SAG HARBOR 8 Sept 1946, GREENPORT 27 Sept 1957, 27 Jl 1958, ORIENT 31 Jl (on twigs), RIVERHEAD 11 Ju, AQUEBOGUE 11, 17 Jl and FLANDERS, EAST QUOGUE 17 Jl 1959, all on *C. occidentalis*, (all Latham coll).

Aphis cerasifoliae Fitch Chokecherry Aphid

TYPE from Fitch Collection (as *A. cerasivora* Fitch) on 1 slide in the USNM, mounted by Pergande. Described as a new species by Fitch in First and Second Reports, p. 131, 1856.

NYL – gives ALBANY Ju, in addition to several of the localities listed in more detail below.

GENEVA 29, 30 Ju 1909, "Very abundant on *Prunus pennsylvanica*", (Gillette, J. E. E. 3(5):405, 1910). ITHACA 8, 11 Ju 1914, common on

chokecherry *Prunus virginiana*, curling the leaves severely, (Morrison coll). YONKERS 16 Ju 1927, on chokecherry, (J. L. Horsfall coll—MDL det).

Probably widely distributed in the State and often abundant on chokecherries, the leaves of the terminal twigs often being severely curled. By midsummer this aphid is said to leave the chokecherries on which it has spent the winter, and according to Quaintance and Baker (U.S. Farmers' Bull. 1128, p. 17, 1926 revise), migrate to grains and grasses where they remain until fall and then return to their winter plants. This aphid has been identified in New York only from chokecherry.

Aphis coreopsidis (Thomas)

SHERIDAN Aug 1905, on *Bidens frondosa*, (Hayhurst coll; also 3 slides in USNM, no date, det as *A. frondosa* Oestlund). ITHACA Sept 1930, on *Cosmos* sp., (Griswold coll—MDL det; 10 slides in CU), 4 Sept 1933, on *Bidens* sp., (Leonard and Crosby coll). LYNDONVILLE 17 Ju 1959, on *Nyssa sylvatica* "extremely abundant, tree and ground below soaked with honeydew", 20 Ju 1959, also on *N. sylvatica* "this aphid produces an interesting distortion and variegation of the foliage of the host plant", (both Pechuman coll). In checking determinations CFS notes that the *Nyssa* material is atypical—has long cornicles. WEST NYACK 10 Oct 1960, on *Bidens frondosa*, (Olsen coll). LI: MASPETH 2 Aug 1914, on *B. frondosa*, (Olsen coll); MATTITUCK 5 Jl 1946, ORIENT 11 Aug 1946, 4, 23 Jl 1958 and 3 Jl 1959 and GREENPORT 18 Jl 1959, all on *Baccharis halmifolia*, (all Latham coll); GREENPORT 28 Ju, 2 Aug 1958, ORIENT 5 Jl 1958, 26 Ju 1959, all on *Nyssa sylvatica*, (Latham coll); GREENPORT 18 Jl, ORIENT 30 Aug 1959, common on stems of *Bidens frondosa*, and ORIENT 10 Aug 1959, common on stems of *B. vulgata*, (Latham coll).

Aphis cornifoliae Fitch Dogwood Aphid

Fitch as n. sp. "On the under surface of the leaves of *Cornus paniculata* (now *racemosa*). No. 846, female." (Cat. Homop. N. Y., p. 65, 1851). A slide in USNM is labelled "Type – Fitch 846" and another slide is marked by Pergande (9020 – 157/3) as "Type, on *Cornus paniculata*."

EAST AURORA 10 Aug 1933, on *Cornus* sp., BARRINGTON 9 Sept 1934, on *C. candidissima*, (Leonard and Crosby coll). N. FAIRHAVEN 2 Jl 1939 (Griswold coll—Essig det). ROCHESTER 11 Oct 1945, on *Cornus* sp., (F. L. Gambrell coll; 1 slide in USNM). LYNDONVILLE 20 Jl 1959, on *C. rugosa*, (Pechuman coll). LOCKPORT 1 Oct 1960, on *C. stolonifera*, (Pechuman coll—CFS det).

Aphis coweni Palmer?

LI: GREENPORT 6, 28 Ju 1958, 22 Jl 1960, on *Veratrum viride*, (Latham coll—MDL det).

Aphis craccivora Koch Cowpea Aphid

Recent studies by European workers indicate that *Aphis medicaginis* Koch, the Cowpea Aphid, has been misidentified in American collections and that all such records should be assigned to *A. craccivora* Koch, since *A. medicaginis* occurs only in Europe. In further support of this Dr. Clyde F. Smith wrote me on Oct. 3, 1960 that he had checked all of his material of *"medicaginis"* from legumes, as well as other hosts, against the key by Eastop in his paper; "A Study of the Aphididae of East Africa" (1958), and "according to this key, all of my material falls into *craccivora*." Therefore all records of *medicaginis* in New York have been transferred to *craccivora*.

WEST NYACK 26 May 1959, on a golden chain tree *Laburnum anagyroides (vulgare)*, 7 years in garden, (Olsen coll—MDL det). ITHACA Dr. Gyrisco of Cornell University wrote in April 1961 that this aphid gives trouble on *Lotus* spp. in the greenhouse but that he has never seen it on *Lotus* in the field. ITHACA CU campus 4 Jl 1959, on *Chenopodium album*, (Graham coll—det MDL with query). ILION Aug 1960, a heavy infestation on *Ch. album* growing in a cabbage-cauliflower field, (A.A. Muka—MDL det). SI: NEW BRIGHTON 31 Aug 1943, on *Gleditsia trichanthos*, (Tuthill coll—Mason det; Sp Port Surv). LI: RIVERHEAD 20 Jl 1933, on lima beans, (Leonard coll—det Tissot as *laburni* Kalt.); PECONIC BAY 5 Aug 1943, on lima beans, (Anderson coll—Mason det; Sp Port Surv); CARLE PLACE 1 Oct 1943, on *Bouvardia* sp., (Plummer coll—Mason det); JACKSON HEIGHTS 30 Ju 1939, abundant on *Deutzia scabra*, (MDL coll); ORIENT 22 Jl 1958, 18, 30 and 31 Jl 1959, on twigs of *Robinia pseudaccacia*, (Latham coll—MDL and CFS det); ORIENT 31 Jl 1959, on *Thalictrum revolutum*, 23 Jl 1960, on branches of *Mirabilis jalapa*, 1 Dec 1960, on flowers of *Lepidium virginicum*, and 20 Jl 1960, on lima beans "whole plants covered", (all Latham coll); BABYLON 3 Jl 1938, on *Chenopodium album*, (Ed. Kurtz coll; slide in USNM); MINEOLA 18 Jl 1917, on beans (Gerson Garb coll—Patch det; Me. Agr. Exp. Sta. Lot Book); E. MARION 1 Jl 1959, on *Ch. album*, (Latham coll); GREENPORT 26 Jl, ORIENT 23 Jl 1959, on twigs of *Robinia viscosa*, 29 Jl 1960, common on tips of branches of *R. pseudaccacia*, 22 Jl 1960, on lima beans, and 28 Jl 1960, on twigs of *R. pseudaccacia*, (all Latham coll); ORIENT 18, 30 Jl 1959, on *R. pseudaccacia*, (Latham coll—CFS det); RIVERHEAD 12 Aug 1959, on tips of bracts of *R. pseudaccacia*, (Latham coll); SHELTER ID. 28 Jl 1960, on *Trifolium arvense*, (Graham coll—CFS det).

The "Cowpea Aphid" has been collected at only two localities in western New York (Ilion and Ithaca) but has been taken in the lower Hudson River Valley (West Nyack), on Staten Island and a number of times on Long Island. It is probably distributed throughout the state since it has a number of widely differing food plants. It has not been collected on cowpeas in New York, nor for that matter, has any other aphid. Slides in the USNM indicate this aphid to be widely distributed in the United States and that it occurs widely also in the rest of the world.

Aphis crataegifoliae Fitch Long-Beaked Clover Aphid or Hawthorn Aphid

Fitch, as n.sp. "On the leaves of *Crataegus punctata,* corrugating them. No. 847, male." (Cat. Homop. N.Y., p. 66, 1851).

ITHACA 20 Sept 1918, on *Crataegus macrosperma,* (Wellhouse coll—Patch det; in Me. Agr. Exp. Sta. Lot Book), 19 Oct 1932, 18 Sept 1934, on *Crataegus* sp., (Leonard and Crosby coll). FREEVILLE 10 Oct 1932, BARRINGTON 19 Sept 1934 and CAYUTA LAKE 13 Sept. 1934, all on leaves of *Crataegus* sp., (all Leonard and Crosby coll).

"In early May 1918 the *Crataegus coccinea* trees at Ithaca began to show the terminal rosettes of curled leaves caused by *Aphis crataegifoliae.* The rosettes turned red and the aphids within them were also red. The infested branches remained deformed and somewhat stunted throughout the season, although the aphids departed from the trees about May 20 to seek leguminous hosts. No aphids of this species were observed the next year." (W. H. Wellhouse, Cornell Univ. Agr. Exp. Sta. Mem. 56, p. 1064, 1922).

Aphis decepta Hottes and Frison

MCLEAN 15 Sept 1934, a "drift on *Cornus* sp., (Leonard and Crosby coll).

Aphis euonymi Fabricius

LI: ORIENT 29 May 1925, on *Oenothera biennis,* (Latham coll—Mason det; in USNM).

Aphis fabae Scopoli Bean Aphid

This black aphid is widespread and at times is abundant on a number of kinds of plants in New York. For many years it was identified as *A. rumicis* until it was shown that the latter is confined to dock, *Rumex* spp..

Records in the Insect Pest Survey files of the U.S. Dept. of Agriculture indicate that it has been observed in New York on lima beans for more than 40 years and that in some seasons during that period it has been moderately to sometimes very injurious in Erie, Wayne, Livingston, Cayuga, and Nassau Counties and especially so in Suffolk County. Its occurrence on other kinds of beans has been but rarely recorded. Among its more favored food plants, on which it often becomes abundant, are burdock, lamb's quarters or pigweed and *Euonymus.* It can usually be found to some extent on the stems and flowers of garden nasturtiums to which it often becomes injurious, especially in the latter part of the season. Latham states that it is very common on *Yucca filamentosa* all over Eastern Long Island.

Fitch, in his 13th report, on pp. 495–512, 1870, gives a long account of "the bean aphis, *Aphis rumicis* L." This consists mostly of its activities in England on various plants. Assuming that records on plants other than *Rumex* refer to *A. fabae* Scop. the following New York notes by Fitch are quoted:

"I suppose this to be also the aphis which sometimes invades our buckwheat, *Polygonum fagopyrum* Linn?, *Fagopyrum esculentum* of our present botanists [now called *F. saggittatum*], completely covering particular stalks of this grain and so exhausting them of their juices that probably none of their

kernels become filled. The middle of September 1866 a letter from the late Robert Howell of Nichols, Tioga County, stated that in that vicinity many of the stalks of the buckwheat were then covered with aphids, which were of different sizes, some of them having wings. [The only other record on buckwheat in New York is by Crosby, who reported that this aphid was badly infesting buckwheat at Elmira in Sept 1925].

"Upon that common weed in our gardens and plowed fields, the pigweed *Chenopodium album*, it has occurred to my notice very much oftener than on any other plant. During the latter part of the season a slight search anywhere will usually reveal some of these weeds infested with these aphids . . . crowded compactly together and covering all the upper part of the stalks . . . .

"Shepard's Purse, *Thlaspi* (*Capsella*) *bursa-pastoris*. Next to the pigweed I have most frequently met with this insect upon this plant. The stalks of this weed and the underside of its leaves may be frequently seen towards the close of the summer, coated over and black with lice; ants also being usually present with them.

"An aphis has infested a thrifty young burning bush or spindle tree *Euonymus americanus* growing in my yard [Salem, N.Y.] whereby I have enjoyed a most favorable opportunity for studying it and observing its habits the whole season through. It is clearly the species named *Aphis euonymi*, by Fabricius . . . and it is also the *Aphis rumicis*, the insect now under consideration."

Dr. Fitch describes in great detail the peculiar and characteristic manner in which this aphid distorts the leaves.

The bean aphid has been recorded from a little over 50 plants in New York. About half of these are from Long Island, due mostly to Latham's collecting. On all but about 10 of the total plants this aphid has been recorded only once or twice. The food plants are as follows:

Arctium lappa, *A. minus*, *Armoracia lapathifolia* (horseradish), *Atriplex patula*, *Beta vulgaris* (beet), *B. vulgaris* var. *cicala* (Swiss chard), *Brassica napobrassica* (rutabaga), *Calendula* sp., *C. officinalis*, *Campsis radicans*, *Capsella bursa-pastoris*, *Celastrus orbiculatus*, *C. scandens*, *Chenopodium* sp., *Ch. album*, *Cosmos* sp., *Cynara cardunculus* (cardoon), *Dahlia* sp., *D. pinnata*, *Daucus carota* var. *sativa* (garden carrot), *Erechtites hieracifolia*, *Euonymus* sp., *E. atropurpureus*, *E. europaeus*, *Fagopyrum saggitatum* (buckwheat), *Gladiolus* sp., *Hibiscus moscheutos*, *H. syriacus*, *Hypericum* sp., *Lepidium virginicum*, *Ligusticum scothicum*, *Malus pumila* (apple), *Matricaria matricariodes*, *Onopordum acanthicum*, *Phaseolus lunatus* (lima bean), *Ph. vulgaris* (kidney bean), *Philadelphus hirsutus* var. *intermedius*, *Philadelphus* sp., *Polyanthes tuberosus*, *Polygonum aviculare*, *P. cuspidatum*, *Rheum rhaponticum* (rhubarb), *Sambucus canadensis*, *Sium* (*cicutaefolium*) *suave*, *Tithonia* (*tagetiflora*) *rotundifolia*, *Tropaeolum majus*, *Valeriana officinalis*, *Viburnum lentago*, *V. opulus*, *V. opulus* var. *americanum*, *V. plicatum*, *Yucca filamentosa* and *Tulipa* sp. (in greenhouse).

Aphis feminea Hottes (*tuberculata* Patch) Red and Black Cherry Aphid

This colorful and rare little aphid was described from Maine (in Me. Agr. Exp. Sta. Bull. 233, p. 261, 1914). As far as I know it has been reported elsewhere only from Mass., D. C. and Ill..

SI: 31 Aug 1943, on bark of *Prunus serotina*, (C. S. Tuthill coll—det

Mason as *tuberculata* with query: Sp Port Surv; 1 slide in USNM). LI: BAY VIEW 10 Oct 1960, clustered thickly around the young stems of *P. serotina,* ("no alates; red with black heads and look like very young potato beetle larvae; none on leaves"; Latham coll).

Aphis folsomii Davis

ITHACA 12 Ju 1939, on Virginia Creeper *Parthenocissus tricuspidata,* (Hansberry coll—Essig det; in CU).

Aphis forbesi Weed Strawberry Root Aphid

LI: MASPETH 13 Ju 1914, on *Fragaria virginiana.* "This was found abundantly scattered in a strawberry patch in common with *Myzus fragaefolii* Ckll." (Olsen coll).

Aphis frangulae Kaltenbach

LI: RIVERHEAD 21 Jl 1933, on *Nepeta cataria,* (Leonard coll—det Tissot as *A. rhamni* Boyer).

Aphis gossypii Glover Cotton Aphid, Melon Aphid

This plain little aphid is yellowish-green to dark mottled green in its wingless stages and only about 1 to 1.8 mm. in length.

It can undoubtedly be found in every part of the state and is a serious pest of cucumbers and melons; in some seasons it does great damage to commercial plantings of these crops. It has also been recorded as severely infesting celery. When infesting greenhouse crops it is known as the familiar "black fly". Eastop stated in "A Study of the Aphididae (Homoptera) of East Africa", p. 73, 1958, that throughout its world-wide range this aphid has been recorded as a vector of about 40 plant virus diseases.

The method of spending the winter of this common and widespread aphid was unknown until recently when Kring (Ann. Ent. Soc. Am. 52 (3): 284–286, 1959) working in Connecticut, was able to show that it overwinters as eggs on catalpa and rose-of-sharon but it has been found on these plants in New York only during the active growing season. In this connection the following note by the writer is of interest: Washington, D.C., on 30 April 1959 a long, head-high rose-of-sharon hedge still had, since the first growth in mid-April, almost every terminal shoot with young leaves encrusted with this aphid; only an occasional alate was present. Two-spotted ladybird beetles were abundant. On Nov 20 1961 a few sexual alate males and wingless oviparous females were found on the underside of some of the few leaves still remaining on this hedge.

The melon aphid has been collected on at least 40 plants in New York. All except about 10 of these represent one collection each and, except for melon and cucumber, on the rest the aphid has been taken only from 2 to 5 or 6 times. Besides on melons and cucumbers the melon aphid has been collected about 60 times in New York. Of these, almost 40 collections have been made on Long Island, mostly by Latham, from about half as many plants. The remaining 20 or so have been made on about as many plants. There follows a list of the food plants within New York:

Ambrosia sp., *Anthemis cotula, A. tinctoria, Apium graveolens* var. *dulce* (celery), *Asclepias syriacus, Begonia* sp., *B. semperflorens, Brassica*

oleracea var. *gonglyodes* (kohlrabi), *Capsella bursa-pastoris, Catalpa bignonioides, Chenopodium album, Chrysanthemum* sp., *Cicuta maculata, Citrullus vulgaris* (watermelon), *Cucumis melo* (muskmelon), *C. sativa* (cucumber), *Cucurbita maxima* (squash), *C. moschata* (cushaw), *C. pepo* (pumpkin), *C. pepo* var. *ovifera* (a gourd), *Dahlia* sp., *Daucus carota* var. *sativa* (garden carrot), *Erigeron canadensis, Eupatorium aromaticum, E. maculatum, E. purpureum, Galium aparine, Gerbera* sp., *Hibiscus esculentis* (okra), *H. syriacus, Lycopersicon esculentum* (tomato), *Petroselinum crispum* (parsley), *Phaseolus lunatus* (lima bean), *Philadelphus hirsutus* var. *intermedius, Plantago lanceolata, Pyrus communis* (pear), *Raphanus sativus* (garden radish), *Valeriana officinalis* and *Zanthoxylon americanum.*

Aphis helianthi Monell

NYL – ITHACA [1913 or 1914], on sunflower, (Morrison); BLISSVILLE Oct, Nov, on *Helianthus rigidus.* Probably widely distributed.

ITHACA 1913 or 1914, on *Helianthus* sp., probably the cultivated sunflower, curling the leaves very badly and was thickly clustered over the undersides; presumably the first record for the state, (Morrison coll); 9 Sept 1935, on *H. annuus,* (CU).

LI: BLISSVILLE 17 Oct 1914, 6 Sept 1913, on *Helianthus rigidus,* (Olsen coll). The name *H. rigidus* cannot be substantiated.

Aphis heraclella Davis? Wild Parsnip Aphid

LYNDONVILLE 1 Jl 1959, on *Heracleum lanatum* very abundant on a single leaf, (Pechuman coll—det MDL with query). LI: ORIENT 24 Sept 1957, on *H. lanatum,* (Latham coll—det MDL with query).

Aphis illinoisensis Shimer Grapevine Aphid

NYL – TROY Jl (Leonard), MIDDLETOWN Aug (Chapman).

MIDDLETOWN Ju 1921, on grape, (CU coll—Tissot det). ITHACA 24 Aug 1938, on grape, (Crosby coll). ALBANY CO. 13 Jl 1935, on wild grape, (Wilcox; in NYSM). MILTON 13 Jl 1938, on *Vitis* sp., (J.A. Evans coll). YONKERS 16 Ju 1927, on grape, (J. A. Horsfall coll). LI: MASPETH Ju, Jl 1913, 1914 "Sometimes injurious to grape" (Olsen coll); BABYLON 1932–4, on grape, (Blanton coll—Mason det), 3 Jl 1939 (Kurtz coll; in USNM); BROOKLYN Jl 1933 (Sigalow Bros. coll; in USNM); MATTITUCK 11 Jl 1959, GREENPORT 14 Sept 1958, on *V. aestivalis,* and GREENPORT 2 Aug 1959, on *V. labrusca,* (all Latham coll). KINGS PARK, PORT JEFFERSON STATION 10, 12 Aug 1943, on young stems and leaves of grape, (J. A. Herrick coll—Mason det; Sp Port Surv).

This large dark brown aphid infests the tender shoots and leaves of the grape and sometimes the fruit clusters, which may cause the berries to drop. It is undoubtedly found throughout the state on the cultivated grape and wild species of *Vitis* but apparently is not of much economic importance. Accord-

ing to Baker (Jour. Agr. Res. 11(3): 184, 1917) it spends the winter in the egg state on the black haw, *Viburnum prunifolium*, but the spring forms have not been identified from this plant in New York.

Aphis impatientis Thomas

Although Hottes and Frison (Aphiidae of Illinois, p. 185, 1931) give this as a synonym of *A. cephalanthi* Thomas, Clyde F. Smith considers it as distinct.

ITHACA 13 Sept 1934, TAUGHANNOCK 4 Sept 1933, on *Impatiens* sp., (Leonard and Crosby coll). GASPORT 24 Sept (7 collections), W. SHELBY 6 Sept, LYNDONVILLE Jl 15, Sept 2, TONAWANDA INDIAN RES. Erie Co 18 Sept, 8 Oct and BERGEN SWAMP Genesee Co. 2 Aug, all 1960, on *I. biflora*, (all Pechuman coll—CFS det). LI: GREENPORT 2 Aug 1959, in clusters on underside of leaves, 30 Sept 1960, on *I. biflora*, (Latham coll); SOUTHOLD 11 Oct 1960, on *I. biflora*, (Latham coll—CFS det).

Aphis ligustici Fabricius ?

LI: ORIENT 4 Oct 1959, on *Ligusticum scothicum*, (Latham coll—det MDL with query).

Aphis maculatae Oestlund

SHERIDAN Jl 1905, on *Salix* sp., (Hayhurst coll). ITHACA 12 Aug 1933, on poplar leaves and shoots, (Leonard and Crosby coll). LI: BROOKLYN 12 Jl 1921, on *Populus* sp., (L.C. Griffith coll; 1 slide in USNM labelled as *A. davisi* Patch); HEMPSTEAD PLAINS 6 Jl 1941, on *Populus* sp., (AMNH).

Aphis medicaginis Koch Cowpea Aphid

See *A. craccivora* Koch.

Aphis monardae Oestlund

ITHACA 10 Ju 1938, on *Monarda didyma*, (V.T. Phillips coll—Essig det). LOCKPORT 14 Ju 1958, on *M. fistulosa*, (Pechuman coll—MDL det).

Aphis nasturtii Kaltenbach (*rhamni* Fonsc., *abbreviata* Patch)
Buckthorn Aphid

ITHACA Oct 1936 (Hayhurst coll), 18 Sept 1934 (Leonard and Crosby coll) and 30 May 1938 (Griswold coll), on *Rhamnus cathartica*; Ju, Jl 1952, alates "near potato fields", (S. H. Kerr coll). WILLIAMSON 24 Sept 1924, on celery, ("There are many more of these aphids than I have ever seen, which probably accounts for an increase in celery mosaic over the previous season."; Crosby coll—Mason det). GENEVA 19 Oct 1946, 29 Oct 1949, on *Rh. cathartica*, (Chapman coll; slides in USNM). RINGWOOD Tompkins Co. 10 Sept 1934, on *Epilobium coloratum*, (Leonard and

Crosby coll). CAYUTA LAKE 13 Sept 1934, on *Crataegus* sp. leaves, (alates only; Leonard and Crosby coll). CROSBY 13 Sept 1934, on *Oenothera biennis,* (Leonard and Crosby coll). BARRINGTON 19 Sept 1934 on *Crataegus* sp. leaves, (alates only; Crosby coll). YONKERS Nepera Point 23 Sept 1931, on *Dahlia* sp., (Philip Brierley coll). NEW YORK N.Y. Botanic Gardens Jl, Aug and Sept 1931, on *Dahlia* sp., (Philip Brierley coll; slides in USNM). LI: BAITING HOLLOW Wildwood State Park 23 Jl 1933, on leaves of cat brier *Smilax* sp., (a number of alates taken singly; M.D. and D. P. Leonard coll); RIVERHEAD 21 Jl 1933, on *Nepeta cataria,* (Leonard coll); PECONIC May 1959, on *Rhamnus cathartica,* (many alates included; coll by Latham, who writes: "Buckthorn is an extremely rare plant around here now. I have not seen a tree before in 30 years. It used to grow in woods near this farm [Orient Point] but the woods were cleared off years ago. I found this tree in the border of woods.")

The winter and spring host of this aphid is the buckthorn (*Rhamnus* sp.) from which the migrant forms spread in the spring to a large number of summer food-plants, only a few of which have been determined as hosts to this aphid in New York.

Dr. Karl H. Fernow, Dept. Plant Pathology, Cornell University, wrote me in October 1961 that this aphid "is not very often encountered on potatoes, but I have seen rather severe infestations in the neighborhood of low swampy areas." Two instances of such occurrence were near Waterloo on muck soil, where on 23 Aug 1926 he inspected a one acre field of early Ohios and noted: "Vines mostly dead. Impossible to detect disease. Aphids very abundant." In the same year and on the same date he inspected another field of 9 acres of Irish coblers and noted: "Conditions for inspection poor. Aphids very abundant. Counted 700 on one leaf. In another field, inspected the same date, I recorded aphids as few. This agrees with my recollection that the occurrence of this particular type of aphid was rather localized." It seems reasonably certain that Dr. Fernow is referring to the buckthorn aphid even though no specimens were preserved to substantiate this. Fernow says this aphid is a vector of leaf roll of potatoes in Maine but not a very efficient one because it does not move about much.

Aphis neogillettei Palmer

LYNDONVILLE 20 Jl 1959, on *Cornus rugosa,* (Pechuman coll—CFS det).

Aphis nerii Fonscolomb (*lutescens* Mon.) Oleander and Milkweed Aphid

ITHACA Sept 1921, on oleander, (Leonard coll—Baker det; in USNM). MEDINA 8 Jl 1959, on *Asclepias syriaca* "abundant on flowerheads, a few on leaves", (Pechuman coll—MDL det). LI: WINFIELD 8 Ju 1913, on *A. syriaca,* (Olsen coll).

Aphis nostras Hottes

ITHACA Brooklawn, CAYUGA HEIGHTS 4 Aug about 1914, on joepye-weed *Eupatorium maculatum,* (O. A. Johannsen coll—Patch det; in Me. Agr. Exp. Sta. Lot Book as *Aphis eupatorii* Oestl. to which Hottes gave the name *A. nostras* in his "Homonyms"—Biol. Soc. Wash. Proc. 43:180, 1930). This appears to be only the second record of this aphid.

Aphis oenotherae Oestlund

FREDONIA no date but year is probably 1905, on *Oenothera biennis*, (Hayhurst coll; 1 slide in USNM). GRAND ISLAND Erie Co. 2 Ju 1959, GENESEE Co. 4 Aug 1959, on *Oenothera* sp., (Pechuman coll—CFS det). CATSKILL 17 Jl 1959, on *Oenothera* sp., (J. A. Wilcox coll—MDL det). LI: MATTITUCK 5 Jl 1946, 18 Ju 1959, GREENPORT 22 Sept 1957, 28 Ju, 25 Sept 1958 and ORIENT 24 Ju 1959, all on *O. biennis*, (Latham coll).

Aphis oestlundi Gillette

FREDONIA Ju 1904 or 1905, on *Oenothera biennis*, (Hayhurst coll). TAUGHANNOCK 4 Sept 1933, on *O. biennis;* ITHACA Forest Home 4 Sept 1934, on *Oenothera* sp., (Leonard and Crosby coll). LYNDONVILLE 20 Jl 1959, BARRE Burma Woods 22 Ju 1960, on *Oenothera* sp., (Pechuman coll—CFS det). MT. KISCO 21, 22 Aug 1960, on *Oenothera* sp., (Graham coll—CFS det).

Aphis pomi DeGeer Apple Aphid

The earliest record for New York is by Fitch as follows: "*Aphis mali* (Fab). Common on the underside of the leaves and the tips of the young branches of the apple tree." (Cat. Homop. N.Y., p. 65, 1851). There are 5 slides in the USNM numbered 9749 from apple from the Fitch collection.

The next specific one is by Sirrine (14th Rept. N.Y. (Geneva) Agr. Exp. Sta. for 1895, p. 602, publ. 1896), who in reference to Long Island says: "The Apple Louse (*Aphis mali*) has occurred in injurious numbers on apple, quince, hawthorne and Spiraea. Messrs. Kearne and Foulk of Flushing treated part of their apple stock."

A note which undoubtedly refers to the apple aphid in New York is given by Chapman and Avens (J.E.E. 41(2):190, 1948) who state that Lodeman (N.Y. (Cornell) Agr. Exp. Sta. Bull. 60:292–293, 1893) conducted spraying experiments against "the common green plant louse" on quince. There is a slide in the USNM presumably by Pergande from Zena, 7 Jl 1897, from apple.

> Central New York (W. H. Wellhouse, "The Insect Fauna of the Genus Crataegus", Cornell Univ. Agr. Exp. Sta. Mem. 56, p. 1065, 1922): "During June and July the succulent sprouts of European and native hawthorns are badly infested by green apple aphids. Whenever the weather becomes unfavorable for their enemies they increase rapidly and infest entire trees or hedges, but fair weather checks them again."
>
> The apple aphid is undoubtedly present wherever apples grow and often does considerable injury in commercial apple orchards, so that control measures are required every season. The aphids infest the tender terminal growth, causing the leaves to curl. In young orchards the leaves and shoots may be so infested that growth is checked. Much damage is done to apple nursery stock in this way. The entire year may be spent on the apple although in the summer many of the winged aphids migrate and produce summer

colonies on several other plants, chiefly *Crataegus* spp., *Prunus* spp., pear and certain other Rosaceae.

Dr. P. J. Chapman, Entomologist of the New York (Geneva) Agricultural Experiment Station, gave me the following statement (Jl 1961) as to this aphid in respect to apples in New York: "The apple aphid, *Aphis pomi* DeG. is generally distributed and present almost every year on nursery stock and in commercial apple plantings that are maintained in a strong vegetative state; often requiring control measures in midsummer."

Available records as to the occurrence of this aphid on plants other than the apple are as follows:

TONAWANDA INDIAN RES. Genesee Co. 5 Jl 1958, on *Malus coronaria*, (Pechuman coll—MDL det). LOCKPORT 31 May 1959, on Van Eseltine crab *Malus* sp., 6 Ju 1959, on Bechtel's crab *M. ioensis* var. *plena*, (Pechuman coll—MDL det). LYNDONVILLE 1 Jl 1959, on *Mespilus germanica*. (Pechuman coll—MDL det). OWLENBERG Catt Co. 20 Ju 1959, on chokecherry *Aronia melanocarpa*, (Pechuman coll—MDL det). WEST NYACK 7 Aug 1947, on flowering quince *Chaenomeles* sp., (Olsen coll—MDL det). HAMLIN 2 Aug 1959, on pear, (Muka coll). MCLEAN 27 Ju 1959, on *Aronia arbutifolia*, (Hansberry coll—MDL det). LI: WESTBURY 11 Jl 1934, on crab apple, (Blanton coll; in USNM); ORIENT 25 Ju 1946, on *Crataegus intricata*, 23 Ju 1958, on *Pyrus communis*, 21 Ju, on *Malus baccata*, 22 Ju 1959, on crab apple *Malus* sp., 30 Ju 1959 (many specimens), on *Sorbus americanus*, 11 Ju 1960, on *Crataegus chrysocarpa*, and 28 Ju 1960, on new leaves of pear, GREENPORT 21 Ju 1959, on pear, 20 Aug 1960, on twigs and new leaves of *Cydonia oblonga*, (all Latham coll).

Aphis sp. near **pomi** DeGeer

LYNDONVILLE 15 Jl 1960, on *Clethra barbineovis*, (Pechuman coll—CFS det). "From terminal touching apple tree with infestation of green aphids; if this is same aphid as on apple, mother aphid may have made a mistake but colony large and apparently doing very well." (Note by Pechuman).

Aphis pseudohederae Theobald Ivy Aphid

NEW YORK May 1933, on ivy plants in a window box, (Mrs. B. Blanks coll; 1 slide in USNM). LOCKPORT 19 Oct 1958, 13 Sept 1959, on *Hedera helix*, (Pechuman coll—MDL det). SI: CASTLETON CORNERS 7 Nov 1960, on *H. helix*, outdoors, (Rundlett coll—MDL det). LI: BABYLON 7 May 1932, Ju 1933, on English ivy, (Blanton coll); WANTAUGH 10 Apr 1948, on *H. helix*, (F. F. Smith coll; 1 slide in USNM).

Not too common in this country.

Aphis rociadae Cockerell Russet-colored Larkspur Aphid

LOCKPORT 5 Jl 1958, 11 Jl, 11 Oct 1959, on *Delphinium* Cult., (Pechuman coll).

Aphis rubicola Oestlund

NYL – ASHOKAN RESERVOIR, Ju [1920 or 1921], abundant on wild raspberry plants affected with mosaic, (Leonard and Crosby coll—det Patch as *Rhopalosiphum rubiphila*).

GENEVA 30 Mar 1923, on cultivated red raspberry in greenhouse, (det Patch as *A. rubiphila* which Louise Russell determines as *A. rubicola;* slide in Me. Agr. Exp. Sta.), 14 May 1925, on cultivated red raspberry, (Rankin coll—LMR det). ERIE Co. Aug 1928, reported by M.N. Taylor as less abundant than usual and in Nov. 1932 Crosby and Taylor reported no severe damage to raspberries in Erie Co. during the year (Insect Pest Survey Reports to USDA). ITHACA 3 Ju 1939, on *Rubus idaeus, R. idaeus* var. *strigosus,* (Griswold coll), 23 Ju 1939, on *R. idaeus,* (Hansberry coll).

ULSTER Co. 5 Jl 1925, on red raspberry, (Rankin coll—LMR det). TONAWANDA INDIAN RES. 3 Jl 1959, on *R. occidentalis,* (Pechuman coll—det LMR with query). POUND RIDGE Westchester Co. Aug 1960, on *Rubus* sp., (Graham coll—det LMR with query).

> During a study of raspberry mosaics in western New York (1931–35) it was found that *A. rubicola* was the sole vector of the leaf curl diseases. These diseases, however, were rather rare. In the wild brambles only four widely separated instances were found: three in red raspberries (*R. idaeus* var. *strigosus*) and one in black raspberries (*R. occidentalis*). (L. M. Cooley, N. Y. (Geneva) Agr. Exp. Sta. Bull. 665:10, 1936).

Aphis rubifolii (Thomas)

ITHACA 6 Aug 1933, badly curling blackberry leaves, (MDL coll—Tissot det). ALTAMONT 28 Aug 1937, on blackberry, (Griswold coll—Essig det). SCARSDALE 31 Aug 1958 (Olive coll—CFS det). POUND RIDGE Westchester Co. Aug 1960, on *Rubus* sp. in tightly curled leaves, (Graham coll). LYNDONVILLE 14 Sept, 29 Oct 1959, on blackberry, (Pechuman coll—det LMR with query). LI: MASPETH 28 Ju 1914, on wild blackberry *Rubus* sp., (Olsen coll—Patch det; verified by LMR); MATTITUCK 16 Oct 1959, on *R. laciniata,* (Latham coll—det LMR with query); ORIENT 15 Jl 1946, on *R. frondosus,* CALVERTON 31 Aug 1946, on *R. argutus,* (Latham coll); RIVERHEAD 7 Jl 1933, bad curling of blackberry leaves in a good sized patch, (MDL coll—Tissot det).

> This minute yellowish green aphid is widely distributed in New York. It twists and curls the leaves of both cultivated and wild blackberries, sometimes injuring the foliage to a considerable extent.

Aphis rumexicolens Patch

LI: BABYLON 23 May 1933, on *Rumex* sp., (Blanton coll—Tissot det).

Aphis rumicis Linnaeus Dock Aphid

The earliest record of this aphid in New York appears to be by Fitch. In his Thirteenth Report he included in a long account of the "bean aphid",

pp. 495–512, 1870: "I have seen the stalks of *Rumex acetosella,* the common field sorrel or "red top" of the country, covered with it."

Although this black aphid is probably widely present on its exclusive food plants, species of *Rumex* which it often heavily infests, the only available records are the following:

ITHACA Sept 1945, on *Rumex crispus,* (H. Aburto coll; in CU). ALBANY 27 Sept 1951, on *R. crispus,* (J. A. Wilcox coll—MDL det). LOCKPORT 6 Ju 1959, on *R. crispus,* (Pechuman coll). SHACKELTON POINT Oneida Co. 10 Jl 1959, on *R. obtusifolius,* (Graham coll). SI: CASTLETON CORNERS 19 Nov 1960, on *R. crispus,* (Rundlett coll). LI: BABYLON May 1932, Ju 1933 and 5 May 1934, on *Rumex* sp., (Blanton coll); ORIENT May 1946, on *R. crispus,* 26 Ju 1946, 18 Sept 1957, on *R. obtusifolius,* 24 Ju 1959, on *R. crispus.* RIVERHEAD 6 Ju 1949, on *R. obtusifolius,* (all Latham coll).

Aphis saliceti Kaltenbach — Green and Pink Willow Aphid

GENEVA 30 Ju (sexual forms; Gillette coll; Can. Ent. 50:89, 1918). ALBANY 1 Jl 1909, on willow as *A. salicicola* Thos., (Gillette, J.E.E. 3(5): 403, 1910). ITHACA 9 Ju 1924, on *Salix* sp., (Hebert Pack coll—Patch det; Me. Agr. Exp. Sta. Lot Book). LI: ORIENT 16 Sept 1946, on *S. lucida,* MANORVILLE 12 Ju 1948, on *S. humilis,* (Latham coll).

Aphis sambucifoliae Fitch — Elder Aphid

As a n.sp. "on the underside of the leaves of the elder. No. 850, male." (Fitch Cat. Homop. N.Y., p. 66, 1851).

ITHACA 13 Sept 1933 (Crosby coll), 18 Sept 1934 (Leonard and Crosby coll), both on *Sambucus canadensis;* 6 Oct 1937, on *S. racemosa,* (Griswold coll—MDL det). LI: ORIENT 18 Oct 1947, 3 Jl 1951 (slide in USNM), 17 Oct 1958 and 29 Jl 1959, on *S. canadensis,* (Latham coll); RIVERHEAD 30 Ju 1949, GREENPORT 7 Sept 1957 (alate viviparae and oviparae; Latham coll).

Aphis sanborni Patch — Green Gooseberry Aphid

E. WILLIAMSON 20 Sept 1933, 13 Oct 1933, on celery, (? Crosby coll—Tissot det). LI: MASPETH 20 May 1914, on *Sambucus canadensis,* (Olsen coll).

> Patch who studied the biology of this aphid in Maine states that it alternates between *Ribes* and *Epilobium.* It is probable that our records on celery are only accidental.

Aphis sedi Kaltenbach — Sedum Aphid

ITHACA 26 Ju 1939, on *Sedum telephium* var. *purpureum,* (M. E. Phillips coll—Essig det; 2 slides in CU), Nov 14, 1935, on *S. hispanicum* in greenhouse, (Whetzel coll—det Tissot as *gossypii*). LI: ORIENT 26

Ju 1946, GREENPORT 7 Jl 1947, 8 Jl 1948, on *S. purpureum*, E. MARION 22 Jl 1960, on *S. telephium* var. *purpureum*, (all Latham coll).

In sending the Whetzel specimens for determination Crosby notes: "The lice were depositing many eggs among the leaves on *Sedum*. I looked the sample over very carefully under the microscope and was able to get only a single winged form."

Aphis near **signatus** Hottes and Frison

LI: GREENPORT 26 Jl 1959, on roots and base of stem of *Sanicula canadensis*, (Latham coll—MDL det).

Aphis solidaginifoliae Williams

ITHACA 13 Aug 1933, on *Solidago* sp., (Leonard and Crosby coll).

This aphid causes the leaves of goldenrod to fold longitudinally and become pod-like and since they retain their green color, infested plants are apt to be overlooked. It should be found in more localities in the state.

Aphis spiraecola Patch Spiraea Aphid

The available detailed records are as follows: GENEVA, ALBANY and NEW YORK 29 Ju to 2 Jl 1910 (Gillette, J.E.E. 3(5):440, 1910). ITHACA 25 Ju 1937, 24 Ju 1938 and 19 Jl 1927, on *Spiraea vanhouttei*, (Griswold coll), 6 Ju 1939, on *S. prunifolia*, (Cutcomp coll). GENEVA 20 Oct 1946, abundant and ovipositing on *S. vanhouttei*, (Chapman coll—Mason det). SODUS 13, 14 Jl 1950 on ? wild cherry, (2 slides in USNM). REMSEN 11 Oct 1953, on *S. prunifolia* and *S. vanhouttei*, (G.N. Wolcott coll—Russell det). LOCKPORT 5 Jl 1958, 25 May 1959, on *S. vanhouttei*, (Pechuman coll). LYNDONVILLE 19 Ju 1959, on *Amelanchier laevis*, 1 Jl 1959, on *A. sanguinea*, *A. florida*, *Acanthopanax sieboldiana* and *Zanthoxylum americanum*, (Pechuman coll—CFS det). LI: ORIENT 26 Ju 1946, common on *Spiraea japonica*, 12 Ju 1946, on *Cosmos bipinnatus*, 6 Ju 1958, 26 May 1959, on *Spiraea vanhouttei*, 8 Jl 1959, on *S. bumalda* var. *Anthony Waterer* and 8 Jl 1959, on *Cosmos bipinnatus*, (Latham coll—some det CFS some MDL); GREENPORT 21 Sept 1957, on *Phytolacca americana*, 4 Jl 1959, on *Apocynum cannabinum*, and 23 Jl 1959, on *Spiraea bumalda* var. *Anthony Waterer*, (Latham coll); SOUTHOLD 16 Ju 1947 (common), E. MARION 27 Ju 1959, on *S. vanhouttei*, (Latham coll); MATTITUCK 4 Ju 1959, on *S. prunifolia*, 18 Ju 1959, on *Celastrus scandens*, (Latham coll—the latter det by MDL with query); BABYLON 10 Ju 1936, on *Spirea* sp., (Blanton coll; 1 slide in USNM).

G. N. Wolcott writes me it occurs also at Clinton, Whitesboro, Forestport, Boonville and Steuben Hill (presumably on *Spiraea* spp.).

This little greenish or yellowish-green aphid undoubtedly is generally distributed throughout the state. It occurs on a number of different kinds of plants but often becomes so abundant on the tender shoots and twigs of ornamental *Spiraea* as to interfere with the new growth and the flowers. It is so closely related to the apple aphid as to be almost indistinguishable in its viviparous forms. It is usually considerably smaller.

Aphis spiraephila Patch Brown Spiraea Aphid

ITHACA 16 Ju 1939, on *Spiraea latifolia,* (T.R. Hansberry coll—Essig det; slides in CU).

Aphis varians Patch Variable Currant Aphid

FREDONIA Ju 1905, on black currant, (Hayhurst coll).

Aphis vernoniae Thomas?

LYNDONVILLE 20 Jl 1959, on *Eupatorium maculata,* (Pechuman coll).

Asiphonaphis pruni Wilson

ITHACA 9 Jl 1937, on *Prunus virginiana,* (Essig coll—Griswold det).

Asiphum pseudobyrsum (Walsh) Poplar Leaf-purse Gall

LI: ORIENT 26 Sept 1946 accidental since only 2 alate fundatrigenae were collected, on *Acer platanoides,* (Latham coll).

Brevicoryne brassicae (Linnaeus) Cabbage Aphid

The earliest record of the cabbage aphid in New York is by Fitch (Cat. Homop. N.Y., p. 65, 1851) who states: "common on the underside of cabbage leaves". He later writes: "On the leaves of cabbage and rutabaga throughout the season. . . . J. L. Edgerton of Waverly, N.Y. states (Country Gentleman, July 1857, p. 80) that his patch of cabbage the year before, comprising 350 large, thrifty plants, were attacked by lice just before they were beginning to head, and in three weeks every plant was covered by the vermin, and he lost the whole. . ." (Eleventh Report, p. 55, 1867).

An early account of this injurious aphid in New York is by Herrick and Hungate (Cornell Univ. Agr. Exp. Sta. Bull. 300, 1911 entitled "The Cabbage Aphis"), who state: "In 1890, 1903 and 1908, this aphid was very numerous, widespread and destructive in New York, the year 1903 being particularly an aphis year. Moreover, our records show we received more inquiries during 1909 and 1910 regarding the cabbage aphis than any other insect pest. It was exceedingly abundant and seriously injurious in nearly all parts of New York State during the season of 1909. It appeared again in 1910, but did not prove nearly so injurious as during the preceding year. Not only were large numbers of cabbages actually destroyed by it, but many fields of cabbage were either abandoned or plowed up early in the season of 1909 from apparent inability to cope with the pest . . . ."

The cabbage aphid is undoubtedly generally distributed on plants of the family *Cruciferae.* It is seasonally or locally abundant on the cultivated species and often does great damage especially to cabbage, cauliflower, broccoli, and Brussels sprouts. Before the availability of modern insecticides and efficient equipment for applying them, in some seasons great losses were incurred by commercial growers of these crops. It also infests to some extent radish, kohlrabi, kale and rutabaga. Although it is known to infest turnip elsewhere, no definite record seems to be available on this plant for New York.

The winter is passed in the egg stage on old cabbage stumps and the tougher parts of other crucifers that remain in the field. The lice that hatch

out in the spring migrate to the growing plants and the waxy colonies they establish may become so thick that in past years growers have often plowed them under early in the season.

Available records other than on cabbage are as follows: CROSBY 19 Sept 1934, on *Brassica nigra,* (Leonard and Crosby coll). ITHACA 14 Sept 1934, on *B. kaber (arvensis),* (Leonard and Crosby coll), 26 Aug 1938, on *B. napus* in greenhouse, (Griswold coll) and 3 Mar 1939, on *Mathiola incana,* (Griswold coll—MDL det). SKANEATELES 17 Sept 1934, on broccoli, (Leonard and Crosby coll). ERIE Co. 1957, on broccoli and cauliflower, (Muka coll). LOCKPORT 14 Aug 1959, on broccoli, 1 Oct 1960, on *Brassica nigra* and 5 Jl 1958, on *B. rapa,* (Pechuman coll). TONAWANDA INDIAN RES. Genesee Co. 3 Sept 1960, on *B. nigra,* (Pechuman coll—CFS det). LI: MASPETH 17 Sept 1913, on *Raphanus sativus,* (Olsen coll); ORIENT 28 Ju 1946 (common), 28 Nov 1957, 29 Sept 1958, 11 Ju 1959, 1, 8 Jan and 8 Nov 1960, common on Brussels sprouts, 16 Oct 1957, on *Brassica nigra,* 28 Nov 1957, on *Raphanus raphanistrum,* 12 Nov 1958, very common on broccoli, 13 Nov 1958, common on rutabaga, 11 Jl 1958, on *R. sativus,* 21 Jl 1959, on kohlrabi, 30 Aug 1959, 12 Jl 1960, on kale, and 1 Jl 1947, on *Thlaspi arvense,* (all Latham coll).

Calaphis alnosa Pepper

Described from many specimens at State College, Pa. in 1950. It is a rather small (about 1.5mm.), very pale green (alates) or creamy white apterae aphid with antennae and legs black. Dr. Pepper says that apterae adhere closely to the midrib and other larger veins on the underside of the leaves and are difficult to see.

TONAWANDA INDIAN RES. Erie Co. 29 Oct 1960, on *Alnus rugosa,* (Pechuman coll—Ole Heie det).

Calaphis betulae (Buckton)?

ALBANY Jl, GENEVA Ju 1909, probably this species and presumably on *Betula* sp., (Gillette in J.E.E. 3(4):369, 1910).

Calaphis betulaecolens (Fitch)

Aphis betulaecolens n.sp. "Birch inhabiting Aphis. No. 848, male." (Fitch, Cat. Homop. N.Y. p. 66, 1851).

BUFFALO, ROCHESTER, POUGHKEEPSIE, NEWPORT and GENEVA Ju 29, 30 1909, on *Betula pendula* var. *gracilis,* (by Gillette).

NYL – besides most of the foregoing reported also from E. GREENBUSH, KARNER Aug 1923, on gray birch, (Leonard coll—Patch det). NEWARK, CRANBERRY LAKE Ju, on yellow birch, (Osborn).

ITHACA 15 Ju 1937, on *Betula* sp., 9 Jl 1957, on *B. populifolia,* (Griswold coll—Essig det). GENEVA 1 Sept 1939, on *B. papyrifera,* (Griswold coll—MDL det). ALBANY 17 May 1930, on *B. populifolia,* (K. F. Chamberlain

coll—MDL det). SODUS 14 Jl 1950, an alate on ? wild cherry, (S.H. Kerr coll—Granovsky det 1958; 1 slide in USNM). LYNDONVILLE 15 Jl, on *B. papyrifera*, 28 Sept 1960, on *B. maximowicziana*, (Pechuman coll—CFS det). BARRE Burma Woods 1 Aug 1960, on *B. lutea*, (Pechuman coll—Ole Heie det). LI: DIX HILLS 11 Jl 1934, on *B. nigra*, (Blanton coll); LOCUST VALLEY 26 Jl 1936, on *Betula* sp., (Maxwell coll—MDL det); GREENPORT 4 Oct, ORIENT 3 Oct 1946 and RIVERHEAD 13 May 1949, on *B. populifolia*, (Latham coll).

Calaphis betuelella Walsh

GENEVA 20 Oct 1946, abundant and ovipositing on *Betula papyrifera*, (Chapman coll—Mason det).

Calaphis castaneae (Fitch)

"Chestnut Gay-Louse, *Callipterus castaneae*, new species. On the underside of the leaves [chestnut], puncturing them and sucking their juices in August and September." (Fitch – Third Rept., p. 471, 1856).

NYL – ALBANY. ITHACA 1–12 Ju 1914, very common on the underside of the leaves of *Castanea dentata*. (Morrison coll).

BROOKTONDALE 17 Jl 1939, on *C. dentata*, (M. E. Phillips coll—Griswold det). TONAWANDA INDIAN RES. Genesee Co. 3 Sept 1960, on *C. dentata*, (Pechuman coll—CFS det). MT. KISCO Westchester Co. 10, 11 Jl 1960, on *C. dentata*, (Graham coll—CFS det). LI: HUNTINGTON, 6 Aug 1934, a "drift" on hickory foliage, (Blanton coll—Tissot det).

Calaphis granovskyi Palmer

NEW YORK Central Park 27 Ju, 28 Aug 1958, on *Betula* (*verrucosa*) *pendula*, (Granovsky coll and det; 2 slides in USNM). LYNDONVILLE 19 Ju 1959, 28 Sept 1960, on *B. maximowicziana*, 15 Jl 1960, on *B. papyrifera*, (Pechuman coll—Ole Heie det).

Calaphis n.sp. Granovsky

ITHACA 23 Ju 1952, alate "near potato fields", (S. H. Kerr coll; 1 slide by Granovsky in USNM). SI: NEW SPRINGVILLE 15 Sept 1943, no plant recorded, (coll by Sp Port Surv; 1 slide, by Granovsky det in USNM). LI: DIX HILLS 11 Jl 1935, on *Betula nigra*, (Blanton coll; 1 slide by Granovsky in USNM, previously labelled *C. betulaecolens* (Fitch).

Capitophorus sp.

RINGWOOD Tompkins Co. 9 Oct 1934, on *Monarda* sp., (Crosby and Leonard coll—Tissot det 1936; verified by LMR 1960). One poorly made slide containing 1 alate, 2 apterae and 1 nymph. I can find no other records of a *Capitophorus* on a *Monarda*.

Capitophorus archangelskii (Del Guercio)

LYNDONVILLE 28 Sept 1960, on *Eleagnus angustifolia*, OLCOTT Keg Creek 5 Oct 1960, "accidental" on *Abutilon theophrasti*, (Pechuman coll—Hille Ris Lambers det).

It was suggested by Dr. Smith that these latter were "drifts" from *Eleagnus* but Pechuman says he knows of no *Eleagnus* in the area and it is more likely that they came from *Shepherdia* even though this species had not been identified from this plant.

Capitophorus braggii (Gillette) Oleaster Thistle Aphid

BUFFALO Oct 1897, on *Eleagnus* sp., (3 slides in USNM). SHERIDAN 23 Jl 1905, on *Cnicus arvensis*, (Hayhurst coll—det Tissot as *flaveolus* (Wlk)). WALLACE 10 Sept 1933, on thistle, (? collector—Tissot det). GENEVA 20 Sept 1946, on *Eleagnus multiflora*, (P. J. Chapman coll—Mason det). LOCKPORT 26 Sept 1959, "leaves covered with masses of the aphids" on *Cirsium arvense*, (Pechuman coll—MDL det). LYNDONVILLE 29 Oct 1959, on *Eleagnus angustifolia*, (Pechuman coll; writes: "abundant—I looked at this tree on and off all summer but never found an aphid till this late date."). LI: ORIENT 3 Jl 1959, on stems and leaves of *Cirsium arvense*, (Latham coll).

Capitophorus eleagni (Del Guercio)

LYNDONVILLE 29 Oct 1959, 28 Sept 1960, on *Eleagnus angustifolia;* OLCOTT Keg Cr. 5 Oct 1960 ("abundant – most alates were dead and stuck to leaves."), on *Shepherdia canadensis*, and LOCKPORT 17 Oct 1959, on *Cirsium arvense*, (all Pechuman coll—CFS det).

Capitophorus hippophaes (Walker) Polygonum Aphid

OLCOTT Keg Cr. 5 Oct 1960 ("abundant – most alates were dead and stuck to leaves."), on *Shepherdia canadensis*, (Pechuman coll—CFS det). ETNA 30 Sept 1933, on *Polygonum* sp., (Crosby coll—det Tissot as *gillettei* Theob.). SI: CASTLETON CORNERS 1, 7 and 20 Nov 1960, a number of alate males in a Moericke trap, (Rundlett coll—J. O. Pepper det). LI: MASPETH 19 Sept 1914, on *P. pennsylvanicum* (Olsen); FLUSHING N. Y. World's Fair Grounds, heavy populations frequently built up on a continuous series of potted plants of *P. pennsylvanicum* being grown in wire cages outdoors as food for Japanese beetles in both 1949 and 1950, chiefly during July and August (Leonard).

Capitophorus hippophaes var. **javanicus** Hille Ris Lambers

LOCKPORT 17 Oct 1959, on *Cirsium arvense*, LYNDONVILLE 29 Oct 1959, on *Eleagnus angustifolia*, (Pechuman coll—Hille Ris Lambers determined for CFS).

Capitophorus ribis (Linnaeus) Currant Aphid

NYL – Widely distributed throughout the state and destructive to currants, recorded from St. Lawrence Co. southward to Westchester Co. and across the state.

Fredonia Ju 1905, on currant, (Hayhurst coll). Ithaca found rather commonly on both wild and cultivated *Ribes,* particularly during the spring of 1914, and in the fall, (Morrison). Yonkers 8 Ju 1927, on currant, (Horsfall coll—MDL det). Ithaca 3 Jl 1928, on currant, (R. Matheson coll), 5 Jl 1928, 2 Ju 1938, on *Ribes sativum,* (both Griswold coll) and 9 Oct 1932 (Crosby and Leonard coll). Lockport 19 May 1960, on *R. sativum,* (Pechuman coll—CFS det).

> This aphid causes a characteristic curling and puffiness of the terminal leaves of currants which turn reddish. Badly infested leaves fall and the fruit deteriorates. It is recorded that in the spring some of the winged aphids leave the currants to develop colonies during the summer on other plants, such as motherwort and others, but this has not been observed in New York.

Capitophorus thomasi Hottes and Frison

Medina 11 Oct 1960, on *Potentilla norvegica* var. *hirsuta,* (Pechuman coll—CFS det).

Cavariella sp.

LI: Orient, E. Marion 13, 17 Sept 1960, on *Daucus carota* var. *sativa,* Southold 14 Oct 1960, on *Sium cicutaefolium,* (Latham coll—CFS det).

Cavariella aegopodii (Scopoli)

Sheridan 31 Jl 1904 or 1905, on *Salix* sp., (Hayhurst coll—Tissot det). Ithaca 15 Oct 1925, on *Angelica* sp., (A. S. Mills coll; 1 slide in USNM), 2 Ju 1952, an alate "near potato fields", (S. H. Kerr coll; 1 slide in USNM) and 24 Oct 1939, on carrot, (T. C. Watkins coll—MDL det). Orange Co. 29 May 1937, (W. E. Ewart coll—det Griswold with query; in CU). Poughkeepsie 12 Dec 1936, common on celery in storage, (S. C. Wilbur coll through Crosby—det Tissot as *C. capreae* (Fab.)). Geneva 20 Oct 1946 (ovipositing), on leaves of *Salix* sp., (det Mason as *C. capreae* (Fab.)). Bedford Westchester Co. Ju 1935, on *Salix* sp., (S. W. Bromley). LI: Maspeth 18 Jl 1914, on cultivated parsnips, (as *Siphocoryne capreae* (Fab.); Olsen coll); Lynbrook (L. C. Griffith coll), Elmhurst Nov 1918, on knob celery, (C. Burkhart coll); Riverhead 26 Ju 1949, on *Ozmorhiza claytoni,* (Latham coll); Greenport 15 Ju 1958, on *O. longistylus,* 26 Jl 1958, on carrots and 22 Jl 1960, on *Cicuta maculata,* (Latham coll).

Cavariella essigi Gillette and Bragg

Athens 6 Nov 1935, on *Salix alba,* (Crosby coll—MDL det). LI: Orient 24 Ju 1959, on *Heracleum lanatum,* (Latham coll—MDL det).

Cavariella hendersoni Knowlton and Smith

LYNDONVILLE 5 Jl 1959, on *Cicuta maculata*, (Pechuman coll—CFS det). LI: GREENPORT 26 Jl 1959, on *C. maculata*, (Latham coll—CFS det).

Cavariella pastinaceae (Linnaeus)

RICHFIELD SPRINGS 16 Sept 1887, on wild celery, (Pergande; 1 slide in USNM). ITHACA fall 1914, very common on *Pastinaca sativa*, the males and viviparous females being present in abundance, and both being winged; presumably this species on an ornamental honeysuckle, (Morrison). EAST ITHACA 19 Oct 1913 (Morrison coll; 1 slide in USNM). NEW YORK Botanical Gardens 5 Jl 1921, on parsnip, (Sanford and Griffith coll; 1 slide in USNM). ITHACA 29 Oct 1925, on wild carrot, (A. S. Mills coll; 1 slide in USNM). FREEVILLE 16 Oct 1932, on *Salix* sp., EAST AURORA 10 Aug 1933, probably on *Cicuta* sp., (Leonard and Crosby coll). ORANGE Co. 29 May 1939, on celery under sash, (W. E. Ewart coll—Griswold det). LI: MASPETH 1 Nov 1914, on *Lonicera japonica*, (Olsen coll); ORIENT 5 Jl 1959, on *Heracleum lanatum*, (Latham coll—MDL det).

Cavariella theobaldi (Gillette and Bragg)

GENEVA 1 Jl 1909 (TYPES), on *Heracleum* sp., (Gillette and Bragg; Can. Ent. 50:92, 1918; 1 slide in USNM). GENEVA, ALBANY 29 Ju to 1 Jl (1909) (alate and apterous summer viviparae), on *Heracleum* sp., (Gillette coll). ITHACA 8 Jl 1942, on *H. lanatum*, (Cutcomp coll—Griswold det; slides in CU), 14, 27 Ju 1952, an alate "near potato fields", (S. H. Kerr coll; 2 slides in USNM). LI: ORIENT 4 Jl 1951, 1, 5 Jl 1958, 24 Ju 1959, on *H. lanatum*, (Latham coll; 2 slides in USNM), 9 Jl, on parsley, 17, 31 Jl, on tops and peduncles of cultivated parsnip, (Latham coll); GREENPORT 1, 5 Jl 1958, on *H. lanatum*, (Latham coll). LOCKPORT 18 Sept 1960, on *Geranium robertianum*, *Heracleum lanatum*, (Pechuman coll—CFS det).

Cepegillettea myricae (Patch)

SARANAC LAKE 8 Aug 1959, on *Myrica asplenifolia* [now *Comptonia peregrina* var. *asplenifolia*], (CFS et al coll). LI: CALVERTON 18 Oct 1949, on *M. cerifera*, (Latham coll—det MDL with query; 1 slide with 1 mature and 1 immature aptera); RIVERHEAD 17 Aug 1952, on *M. asplenifolia*, (Latham coll—Granovsky det 1958; 4 slides in USNM).

Cerataphis lataniae (Boisduval) Lantana Aphid

NYL – ITHACA Dec to Mar, annually in greenhouse on *Sobralia macrantha*, (Griswold coll—Patch det).

Chaitophorus sp.

"A small yellowish-green *Chaitophorus* with head a little dusky, was fairly common upon the underside of *Malva rotundifolia* on the grounds of the Experimental Station at GENEVA (28 to 30 Ju 1909). Apterous viviparae only were seen. The body length varies between 1.10 and 1.25 mm. and the antennae between .77 and .90 mm. in the specimens taken. The species seemed rather sporadic in habit." (Gillette in J.E.E. 2(6) :388, 1910).

Chaitophorus betulae Buckton

"ALBANY 1 Jl, GENEVA 29, 30 Ju 1909, very abundant on the leaves of *Betula alba* [now *B. pendula*]. Buckton's description of this species was from fall apterous forms only and does not characterize very correctly the summer form of the louse that I am referring to by this name. I believe it is the only *Chaitophorus* that has been referred to the birch." (Gillette in J.E.E. 3(4) :367, 1910).

Chaitophorus nigrae Oestlund

TUPPER LAKE 8 Aug 1959, on *Salix* sp., (Smith-Smith-Tuatay coll—CFS det). MT. KISCO 14 Aug 1960, on *Salix* sp., (Graham coll—CFS det).

Chaitophorus nigrae subsp. **tranaphoides** Hille Ris Lambers

ITHACA 1 Aug 1959, on *Salix* sp.; TUPPER LAKE 8 Aug 1959, on *Salix* sp., (both Smith-Smith-Tuatay coll—CFS det).

Chaitophorus populellus Gillette and Palmer?

Clear-winged Cottonwood Leaf Aphid

LI: GREENPORT 18 Oct 1957, on *Populus heterophyllus,* (a male?; Latham coll—det MDL with query).

Chaitophorus populialbae Fonscolombe

LYNDONVILLE 20 Jl, 29 Oct 1959, on *Populus alba,* (Pechuman coll—CFS det).

Chaitophorus populicola (Thomas)

Cloudy-winged Cottonwood Leaf Aphid

(Formerly in *Neothomasia* or *Periphyllus. P. bruneri* Wms. is a synonym.)

NYL – KARNER Jl, abundant on the common aspen *Populus tremuloides.*

ITHACA ? Oct 1913, sexual forms on young Carolina poplars and during the next spring at three places on the campus, the winged migrants of the second generation were forming colonies on the stems of the poplar, (Morrison). TUPPER LAKE 6 Sept 1933, on poplar, (H. Dietrich coll—

Tissot det). ALTAMONT 13 Sept 1939, on *Populus tremuloides,* (Griswold coll and det). ALBANY 22 Ju 1956, CATSKILL 17 Jl 1959, on *P. deltoides,* (J. A. Wilcox coll—MDL det; NYSM). ITHACA 12 Aug 1933, 19 Sept 1935, on *Populus* sp., (Crosby and Leonard coll); 30 Ju, on *P. canadensis,* (H. C. Barrett coll) 23 Jl 1938 (Griswold coll) and 13 Jl 1939, on *P. grandidentata,* (Hansberry coll). LYNDONVILLE 19, 22 May, GASPORT 2 Jl 1959, on *P. tremuloides,* (Pechuman coll). SI: RICHMOND 2 Sept 1943, on leaves of balm of Gilead *P. gileadensis* but recorded as *P. balsamifera,* (C. S. Tuthill coll—Mason det; Sp Port Surv). LI: MASPETH 7 Sept 1913, on *Populus* sp., (Olsen coll); ORIENT 25 Ju, GREENPORT 25 Ju, SAG HARBOR 26 Ju, NORTHWEST 26 Ju and RIVERHEAD 11 Ju 1947, on *P. grandidentata,* (Latham coll); ORIENT 31 Jl, GREENPORT 2 Aug 1959, in clusters at base of leaves of *P. deltoides,* (Latham coll). GASPORT 2 Jl 1959, on *P. tremuloides,* 7 Jl 1959 ("drifts"), on *Juglans nigra,* (both Pechuman coll—CFS det). WEST NYACK 11 Ju 1960, on *Populus grandidentata,* (Olsen coll—MDL det). JAY 8 Aug 1959, on *P. balsamifera,* (Smith-Smith-Tuatay coll—CFS det).

Chaitophorus populicola subsp. **patchae** Hille Ris Lambers

TUPPER LAKE 7 Aug, SARANAC LAKE 9 Aug 1959, on *Populus balsamifera,* JAY 8 Aug 1959, on *P. tremuloides,* (Smith-Smith-Tuatay coll—CFS det). TONAWANDA INDIAN RES. 28 May, LYNDONVILLE 19 Ju and OWLENBURG BOG, Catt. Co. 20 Ju 1960, on *P. temuloides;* BARRE Burma Woods 9 Jl 1960, on *P. grandidentata,* (all Pechuman coll—CFS det). WESTCHESTER Co. 11 Jl 1960, on *P. grandidentata,* 1 Aug, on *Populus* sp., *P. tremuloides,* (Graham coll—CFS det). LI: ORIENT 31 Jl, GREENPORT 2 Aug 1959, on *P. deltoides,* (Latham coll—CFS det).

Chaitophorus populifolii subsp. **simpsoni** Hille Ris Lambers

TONAWANDA INDIAN RES. Genesee Co. 4 Aug 1959, on *Populus grandidentata,* 3 Sept, 8 Oct 1960, on *P. tremuloides,* (Pechuman coll—CFS det).

Chaitophorus pusillus Hottes and Frison

LOCKPORT 12 Aug 1959, on *Salix nigra,* (Pechuman coll—CFS det). ITHACA 1 Aug 1959, on *Salix* sp., (Smith-Smith-Tuatay coll—CFS det).

Chaitophorus saliciniger (Knowlton)?

WEST NYACK 11 Ju 1960, on *Salix cordata,* (Olsen coll—CFS det).

Chaitophorus stevensis Sanborn

LYNDONVILLE 19 Ju, 5, 7 Jl and 2 Sept, 1959, on *Populus candicans,* (Pechuman coll—CFS det). MT. KISCO Westchester Co. 1, 10 Aug 1960, on *Populus* sp., (Graham coll—CFS det). LI: GREENPORT 14 Oct 1960, on *P. heterophylla,* (Latham coll—CFS det).

The following records were formerly assigned to *Chaitophorus populifoliae* Oestlund or Davis, the Clear-winged Aspen Aphid:

ITHACA ? Oct 1914 winged males and oviparous wingless females on small Carolina poplar trees, (Morrison). MONTEREY Schuyler Co. 19 Sept 1934 (both viviparous females and males present), on poplar, (Leonard and Crosby coll). AMENIA 27 Sept 1934 (males only), collected on poplar, (Leonard coll—Tissot det). ITHACA Arnot Forest 21 Aug 1927, on *P. tremuloides,* (L. P. Wehrle coll—MDL det; in CU); 21 Jl 1938 (Griswold coll—Essig det) and 15 Ju 1952, an alate "near potato fields", (S. H. Kerr coll; slide in USNM). WATKINS GLEN 18 Ju 1939, on *P. grandidentata,* (Cutcomp coll—MDL det; in CU). CATSKILL 17 Jl 1959, on *P. grandidentata,* (J. A. Wilcox coll—MDL det).

Chaitophorus viminalis Monell

Little Black and Green Willow Leaf Aphid

SHERIDAN Jl 1905, on willow, (Hayhurst coll—Tissot det; in CU also 1 slide in USNM). GENEVA 1 Jl 1909 "both alate and apterous viviparae were taken on willow leaves, specially abundant" (Gillette in J.E.E. 2(6): 388, 1910). ITHACA 6 Aug 1933, on *Salix* sp., (Leonard and Forbes coll—Tissot det), 12 Oct 1939 (males), on *Salix* sp., (Griswold coll—MDL det) and 2 Ju 1952, an alate "near potato fields", (S. H. Kerr coll; 1 slide in USNM). CROSBY 13 Sept 1934, very abundant on basket willow *S. purpurea,* FREEVILLE, on leaves of *Salix* sp., (both Leonard and Crosby coll). SLATERVILLE 24 May 1939, on *Salix* sp., N. FAIRHAVEN 2 Jl 1939, on *S. nigra,* (T. R. Hansberry coll—Griswold det). CADOZIA (near Hancock) 11 Aug 1955, on willow, (J. A. Wilcox coll—MDL det). SHACKELTON POINT Oneida Co. 9 Jl 1959, on *Salix* sp., (Graham coll—MDL det). LYNDONVILLE at Seneca Falls, 8 Jl 1959, 5 Jl 1960 and 10 Oct 1960, on *S. babylonica,* (Pechuman coll—CFS det). SI: PORT RICHMOND 2 Sept 1943, on *Salix* sp., (C. S. Tuthill and Lantz coll—Mason det; Sp Port Surv). LI: GREENPORT 29 Ju 1958, on *S. discolor,* (Latham coll—MDL det).

Chromaphis juglandicola (Kaltenbach) Walnut Aphid

GASPORT 2 Jl 1960, on *Juglans regia,* (Pechuman coll—CFS det).

Cinara sp.

GENEVA 6 Dec 1946, on *Thuja orientalis,* (Gambrell coll—Mason det).

Cinara banksiana Pepper and Tissot

LI: RIVERHEAD 20 Ju 1934, on *Pinus banksiana,* (Crosby coll—Palmer and Hottes det; 1 slide with 3 apterae in CU).

Cinara carolina Tissot

CANANDAIGUA 26 Sept 1946, on *Pinus nigra,* (Chapman coll—Mason det). LI: BABYLON 12 Ju 1939, on *P. rigida,* (F. S. Blanton; in USNM), 1 Jl 1939, on *Pinus* sp., (Ed Kurtz; in USNM).

Cinara costata Zetterstedt

SYRACUSE, TULLY 16 Ju 1955, on Norway Spruce *Picea abies,* (J. O. Pepper coll and det).

Cinara curvipes Patch Bow-legged Fir Aphid

NYL – (as *Lachnus*) OLD FORGE Aug, on balsam, (Felt).

TANNERSVILLE 2 Oct 1951, on balsam fir, (C. W. Maris coll; fr. Wilcox of NYSM; Hottes det).

Cinara hyalina Koch

RYE Ju 1935, on *Picea abies,* (S. W. Bromley coll). It is apparently recorded elsewhere in this country only from Maine and California.

Cinara laricis (Hartig) Larch Aphid

BARRE Burma Woods Orleans Co. 9 Jl 1958, on *Larix laricina,* "on twigs; numerous colonies attended by big black ants; no winged forms present; examined again on Aug 8, fewer smaller colonies but still no winged forms; also same locality 3 June 1959." (Pechuman coll).

Cinara palmerae (Gillette) Spotted Spruce Aphid

TULLY 17 Ju 1955, on Norway spruce *Picea abies,* (J. O. Pepper det and coll). LI: ORIENT 2 Aug 1959, on *P. pungens,* (Latham coll—det J. O. Pepper with query).

Cinara piceicola (Cholodkovsky) Dark Brown Spruce Aphid

GENEVA 29 Ju 1909, on *Picea excelsa,* (Gillette coll—Palmer det; Ann. Ent. Soc. Am. 38(3):447, 1945).

Cinara pilicornis (Hartig)

LYNDONVILLE 19 Ju 1959, accidental on *Juglans* sp., (Pechuman coll—J. O. Pepper det).

Cinara pinea (Mordwilko)

LOCKPORT 6 Ju 1959, on *Pinus sylvestris,* (Pechuman coll—Hottes det).

Cinara pini (Linnaeus)

YONKERS 15 Oct 1935, on *Pinus thunbergi;* TARRYTOWN Ju 1939, on shoots of Japanese table pine *Pinus* sp., (S. W. Bromley coll). LI:

Locust Valley May, on Austrian pine, Glen Head Ju 1936, on needles of red pine *P. resinosa,* (K. E. Maxwell coll—Tissot det).

Cinara pinicola (Kaltenbach)

Geneva 18 Nov 1946, on *Picea glauca,* (F. L. Gambrell coll—Mason det).

Cinara pinivora (Wilson)

"Lectotype alate viviparous female indicated by arrow on slide indicated as 'Type' by Wilson. Host *Pinus* sp. New York 1908. Hopkins 7422. Slide on deposit in the United States National Museum." (Hottes, Proc. Biol. Soc. Wash. 71:191–196, 1958). *C. pinivora* is here redescribed.

Cinara sabinae Gillette and Palmer Rocky Mountain Juniper Aphid

Bedford Westchester Co. 28 May 1935, no plant given, (Bromley). LI: Locust Valley May 1936, on *Juniperus virginiana,* (K. E. Maxwell coll—Tissot det); Westbury 23 May 1928, on red cedar *J. virginiana,* (Bartlett Tree Res. Labs.).

Cinara strobi Fitch White-Pine Aphid

"*Eriosoma strobi* n.sp. Common on the branches of the white pine, giving to the bark of infested trees a peculiar black appearance. Belongs to a nondescript genus, intermediate between this and *Lachnus.* No. 867, male; 868, female." (Fitch, Cat. Homop. N.Y. p. 69, 1851).

West Danby 9 Oct 1932, on *Pinus strobus,* (Crosby and Leonard coll). Ithaca presumably this species on the white pine along Fall Creek Drive, 2 winged have been obtained (?1914), (Morrison); 30 Ju, 19 Oct (ovip. females), on *P. strobus,* (Griswold coll). Geneva 20 Oct 1946 (ovipositing), on *P. strobus,* (Chapman coll—Mason det). Armonk Ju 1935, on white pine, (S. W. Bromley). LI: Wading River 30 Ju 1913, on pine, (Olsen coll); Glen Cove Ju 1936, on *P. strobus,* (Maxwell coll—Tissot det); Babylon 1 Nov 1943, on needles and stems of white pine, (Plummer coll—Mason det; Sp Port Surv).

Cinara tujafilina (Del Guercio)

New York 8 Oct 1922, no food plant given, (Shillers coll; USNM). LI: Westbury 23 May 1928, on red cedar *Juniperus virginiana,* (Bartlett Tree Res. Labs.).

Cinara watsoni Tissot and Pepper

Lockport 6 Ju 1959 (apterae and immatures), on *Pinus sylvestris;* Johnsonburg 5 Ju 1960, on *P. sylvestris,* (both Pechuman coll—J. O. Pepper det).

Colopha ulmicola (Fitch) Elm Cockscomb-gall Aphid

Originally described by Dr. Fitch from New York (without definite locality) as *Byrsocrypta ulmicola* new species.

NYL – Known to occur in ONONDAGA, GENESEE, ERIE, ONTARIO, WASHINGTON, ALBANY, RENSSELAER and WESTCHESTER Counties and probably moderately abundant and generally distributed throughout the state (Felt); also as *Tetraneura graminis* Mon., ALBANY, Sept, on heads of rice cutgrass *Leersia* (*Homalocentrus*) *oryzoides*. Other records are: GENEVA 29, 30 Ju 1909 (as *Tetraneura*) "galls very common, some turning red and in these were many alate lice and pupae; in green galls all were nymphs." (Gillette, J.E.E. 2(5):353, 1909). NEW YORK and vicinity (Beutenmueller). BRONX 2 Ju 1935, on *Ulmus* sp., (P. A. Readio coll; in CU). WEST NYACK Oct 1958, dried galls on leaves of *U. americana*. (Olsen coll). LI: (as *Colopha graminis* Mon.) WINFIELD 8 Ju 1914, MASPETH 25 Ju 1913, 14 Ju 1914, on elm, (Olsen coll); SAG HARBOR 29 Jl 1946, on *Leersia virginica*. (Latham coll—det Russell as *Tetraneura graminis* Mon. with query).

> The account of Dr. Fitch is as follows: "In June, an excrescence or follicle like a cockscomb, arising abruptly from the upper surface of the leaf, usually about an inch long and a quarter of an inch high, compressed at its sides, wrinkley perpendicularly at its summit, irregularly gashed and toothed, of a paler green color than the leaf and more or less red on the sides exposed to the sun; opening on the underside of the leaf by long slit-like orifice; inside wrinkled perpendicularly into deep plates and occupied by one female and a number of her young, some of which are strictly outside upon the upper surface of the leaf. Minute oval yellowish white lice 0.02 [?] long with blackish legs, the female more or less coated with white meal on the back, 0.007 long, oval and pale yellowish with blackish legs and antennae. Though I have not yet met with winged individuals, in all probability they pertain to the genus to which I have referred this species above. The galls may frequently be noticed on elm leaves. By the middle of summer they become tenantless, dry and hard and of a blackish color." (Fitch's 5th Rept. pp. 843–849, 1859).

Colopha ulmisacculi Fitch Elm Sack Gall

NYL (as *Tetraneura*) – KENWOOD May, gall on *Ulmus montana* [now *glabra*], (H. D. House coll—Felt det). LI: MASPETH, ROSLYN Ju 1914, on elm, (Olsen coll).

SHELTER ID. 17 Ju 1914, on English elm, (USNM); FAR ROCKAWAY, no plant, (USNM).

Dactynotus sp.*

ITHACA Brooklawn on Cayuga Heights 21 Aug about 1914, on wild

* Dr. A. T. Olive of the Department of Biology, Wake Forest College, Winston-Salem, N. Carolina, in a study of Macrosiphum-like aphids, has transferred certain species from *Macrosiphum* to *Dactynotus*. Seven of these and one variety in addition to five other species are included in this list, which will be published earlier than Dr. Olive's paper. Dr. Olive has therefore asked me to indicate the "new combinations."

lettuce, (O. A. Johannsen coll—Patch det; record in Me. Agr. Exp. Sta. Lot Book).

Dactynotus sp.

LI: ORIENT 7 Sept 1957, on *Hieracium scabrum,* (Latham coll—Olive det); RIVERHEAD 17 Aug 1957, on *H. pratense,* (Latham coll—Olive det); SAG HARBOR 21 Sept 1946, on *Impatiens biflora,* 16 Aug 1946, on *Aster umbellatus,* (Latham coll—Olive det); ORIENT 7 Sept 1957, on *Prenanthes trifoliata,* (Latham coll—Olive det).

Dactynotus n. sp. No. 5 Olive

TUPPER LAKE 8 Aug 1959, on *Aster* sp.; ITHACA 1 Aug 1959, on *Solidago* sp., (Smith-Smith-Tuatay coll—Olive det). WEST NYACK 22 Ju 1960, on *S. canadensis,* (Olsen coll—Olive det). MT. KISCO 11, 12, Jl 1960, on *Solidago* sp., (Graham coll—Olive det). LI: MATTITUCK 5 Jl 1946, on *S. arguta, S. aspera,* EAST MARION 26 Ju 1946, on *S. rugosa* and QUOGUE 10 Oct 1948, on *Erechtites hieraceifolia,* (all Latham coll—Olive det); GREENPORT 17 Jl, EAST QUOGUE 23 Jl 1959, on *Solidago altissima,* ORIENT 5 Jl 1959, 17 Jl 1960, on *S. altissima,* 13 Jl, 11 Oct 1960, on *S. rugosa,* (all Latham coll—Olive det).

Dactynotus n. sp. No. 7 Olive

ITHACA 18 Sept 1934, on *Lactuca spicata,* (Leonard and Crosby coll—Olive det). LYNDONVILLE 19 Jl 1959, on *Solidago canadensis;* LOCKPORT 10 Aug, 22 Sept 1959, on *Lactuca serriola,* 19 Sept 1959 on *L. sativa;* TONAWANDA INDIAN RES. Genesee Co. 3 Sept 1960, on *Prenanthes alba,* and BARRE Burma Woods 22 Ju 1960, on *Chrysanthemum leucanthemum,* (all Pechuman coll—Olive det). WESTCHESTER Co. 29 Ju, on *Chrysanthemum* sp., 11 Aug 1960, on *Sonchus oleraceus,* (Graham coll—Olive det). LI: GREENPORT 28 Jl 1946, on *Cirsium discolor,* ORIENT 16 Sept 1946, on *Lactuca sativa,* QUOGUE 10 Oct 1948, on *Gnaphalium polycephalum,* LAUREL 19 Jl 1948, on *Lactuca canadensis,* and RIVERHEAD 10 Oct 1948, on *Aster ericoides,* 19 Oct 1948, on *Lactuca serriola,* (all Latham coll—Olive det); BAY VIEW 9 Ju, on *Hypochoeris radicata,* 29 Ju, on *Cichorium intybus* and 10 Oct 1960, on *Gnaphalium polycephalum,* ORIENT 28 Ju, on *Cichorium intybus,* 23 Jl 1960, on Van Fleet cult. rose, (all Latham coll—Olive det).

Dactynotus n.sp. No. 3 Olive

LI: ORIENT 16, GREENPORT 22 Jl 1960, on *Helianthus tuberosus,* (Latham coll—Olive det).

Dactynotus n.sp. No. 1 Olive

LI: MATTITUCK 5 Jl 1946, on *Chrysopsis falcata;* SAG HARBOR 8 Sept 1946, on *C. mariana,* (both Latham coll—Olive det).

Dactynotus n.sp.

ITHACA Comstock Garden 2 Aug 1926 (6 slides, apterae and alates), 22, 26 Jl 1939 (8 slides, apterae and alates), on *Heliopsis helianthoides*, (Griswold coll; in CU). Dr. Olive says this is definitely a new species but he hesitates to describe it without color notes.

Dactynotus ambrosiae (Thomas) n. comb. Brown Ambrosia Aphid

(Formerly placed in *Macrosiphum*.)

This dark blood-red, rather large aphid is common and wide-spread in New York, occurring on a number of different plants. It has often been misidentified with closely related species so that it is difficult to say on just how many plants the true *ambrosiae* is known to occur. It has not been recorded as doing any appreciable injury.

Although *Dactynotus ambrosiae* was described as a new species by Thomas from Iowa in 1878, it had actually been recorded from New York just 60 years earlier. In 1818 Rafinesque, in the American Naturalist and Critical Reviews, Vol. 3:17 described as new an aphid he called *Aphis ambrosia* of which he states: "Found on Long Island on several species of the genus *Ambrosia*. They are raised and bred by a new species of ant, which I have called *Formica fasciata*." This, Hottes says (Proc. Biol. Soc. Wash. 44:67, 1931) is probably a synonym of *A. jacobea-balsamita* Raf. (l.c.) which latter "is unquestionably the first description of the species long since known as *Macrosiphum ambrosiae* (Thomas)." Rafinesque records it on *Jacobea balsamita* and *Senecio jacobea* (both now called *Senecio pauperculus*) and on *Solidago nemoralis*.

For many years numerous collections of aphids in New York, as well as in other states, have been identified as *ambrosiae*. Recent critical studies by Dr. A. T. Olive while at North Carolina State College, working for his Ph.D. under the direction of Dr. Clyde F. Smith, have shown, however, that in many cases closely related species are involved, including two new species. At least 80 collections in New York have been assigned to *ambrosiae*. I have divided these records, which follow, into two categories: those which have been substantiated by Drs. Smith and/or Olive and those which have not been reviewed by them.

The slides upon which the following records are based have been determined by Drs. Smith and/or Olive:

ITHACA 11 Aug 1938, on *Ambrosia trifida*, (H. I. Scudder coll—Olive det). YONKERS 28 Ju 1938, on *Vernonia* sp., (E. P. Imle coll—LMR and Olive det). MT. KISCO Aug, on *Eupatorium perfoliatum*, 22 Aug, on *Ambrosia trifida*, 6 Jl, 6 Aug, on *Rudbeckia hirta* and 1 Aug, on *Solidago sempervirens*, (all 1960 Graham coll—Olive det). TONAWANDA INDIAN RES. Genesee Co. 4 Aug, on *Ambrosia trifida;* ZOAR VALLEY Erie Co. 20 Sept, on *Helianthus decapetalus;* LOCKPORT 26 Sept, on *Cirsium arvense*, and LYNDONVILLE 14 Sept, on *Solidago canadensis*, (all 1959

Pechuman coll—det Olive and/or CFS). ROCHESTER 19 Jl 1960, on *Rudbeckia hirta,* (H. Lou Gibson coll—Olive det).

LI: ORIENT 22 Jl 1946, on *Achillea millefolium,* (Latham coll—Olive det); ORIENT 17 Jl 1960, on *Solidago sempervirens,* SAG HARBOR 30 Ju 1955, on *Eupatorium purpureum* and *Aster macrophyllus,* GREENPORT, ORIENT 17 Jl 1959, common on the tips of the branches of *Iva oraria,* GREENPORT 23 Jl 1958, 3 Jl 1959, ORIENT 25 Ju 1942 are presumably *ambrosiae,* on *I. oraria,* ORIENT 23 Jl 1960, on *Dimorphotheca* sp., 26 Sept 1959, on *Tagetes erecta,* and EAST MARION 17 Jl 1960, on *Solidago sempervirens,* (all of foregoing Latham coll—det Olive and/or CFS); SHELTER ID. 28 Jl 1960, on *Rudbeckia hirta,* (Graham coll—Olive det). GREENPORT 2 Aug 1959, on *Aster novi-belgii,* 22 Jl 1960, on *Rudbeckia laciniata, Cicuta maculata,* (Latham coll); ORIENT 28 Ju 1960, on pear, (Latham coll); (a slide from GREENPORT 25 Ju 1958, on pear, Latham coll, det LMR as "*ambrosiae* complex", is presumably *ambrosiae*).

The following records have not been substantiated by either Dr. Olive or Dr. Smith:

ITHACA 21 Jl 1885, host unrecorded, (E. H. Sargent coll—Tissot det; in CU), 3 Sept, on *Solidago* sp., 9 Sept, on *Arctotis* sp. and *Lactuca* sp., 19 Sept, on *Arctotis* sp., (all 1933 Crosby coll—Tissot det 1936), 13 Sept, on *Aster puniceus,* 14 Sept, on *Eupatorium urticaefolium,* 15 Sept, on *Lactuca* sp., 18 Sept ("with cornicles almost too long for *M. ambrosiae*"), on *L. spicata,* (all 1934 Leonard and Crosby coll—Tissot det 1936), 20 Oct 1932, on *Calendula* sp., (Leonard coll—Tissot det), 11 Aug 1939, on *Eupatorium* sp., (MDL det; in CU), 21 Jl 1929, on *Aster* sp. cult., (Griswold coll; in CU), 20 Oct 1932, on *Calendula* sp., (Leonard coll), 3 Sept 1932, on *Solidago* sp., (Leonard and Crosby coll), 19 Jl 1938, on *S. canadensis* var. *hargeri,* (Griswold coll—Griswold and Essig det; in CU). MCLEAN 15 Sept (at least one male present); on joe pye-weed *Eupatorium* sp.; RINGWOOD Tompkins Co. 10 Sept, on *Aster umbellatus, Lactuca* sp. and everlasting *Helichrysum* sp., (all 1934 Leonard and Crosby coll). SHERIDAN 30 Jl 1905, on *Lactuca serriola,* (Hayhurst coll). ALBANY 8 Oct, on *Ambrosia trifida,* 14 Sept 1959, on *Iva xanthifolia,* (Wilcox coll—MDL det). CATSKILL 17 Jl 1959, on *Rudbeckia serotina,* (Wilcox coll—MDL det). SI: 14 Sept 1943, abundant on seeded lettuce plants, (M. J. Ramsey coll—Mason det; Sp Port Surv). BARNEVELD 12 Ju 1922, on everlasting *Helichrysum* sp., (G. N. Wolcott coll; 1 slide in USNM).

LI: WADING RIVER 30 May 1913, on *Iva oraria,* (as *frutescens;* Olsen coll; det as *Macrosiphum* sp. is presumably *ambrosiae*); HUNTINGTON 6 Aug 1934, on *Lactuca canadensis,* (Blanton and Borders coll—Tissot det 1936); BABYLON 26 Sept 1934, on *Aster* sp., 7 Jl 1935, on *Sisymbrium officinale,* and 3 Jl 1939, on *Veronica* sp., (Blanton coll; 1 slide each in USNM; ? Mason det); BABYLON 25 Aug 1933, on *Ambrosia* sp. and

Lactuca canadensis, (Blanton coll—Tissot det 1936); GREENPORT 2 Jl 1951, on *Aster umbellatus,* (1 slide in USNM), 7 Jl 1959, on *Lactuca serriola,* ORIENT 8 Ju, on *Solidago rugosa,* 27 Ju, on *Lactuca serriola* and 8 Ju, on *S. sempervirens,* MATTITUCK 15 Ju, on *S. altissima,* and PECONIC 9 Jl, on *Rudbeckia hirta,* (all Latham coll—MDL det).

Dactynotus chrysanthemi (Oestlund) n. comb.

(Formerly placed in *Macrosiphum.*)

SHERIDAN Aug 1905, on *Bidens frondosa,* (Hayhurst coll—det Tissot with query). ITHACA 14 Sept 1934, RINGWOOD Tompkins Co. 10 Sept 1934, on *Bidens* sp., (Crosby and Leonard coll—Tissot det). SI: 3 Sept 1943, on stem of *Solidago* sp., (Sp Port Surv; Mason det). MEDINA 23 Sept 1960, on *Bidens frondosa;* GASPORT 24 Sept 1960, on *B. cernua,* OLCOTT Keg Creek 5 Oct 1960, on *B. cernua,* (all Pechuman coll—Olive det). LI: CALVERTON 1 Sept 1947, GREENPORT 22 Sept 1957, on *B. comosa,* (Latham coll); ORIENT 10 Aug 1959, common on stems of *B. vulgata,* (Latham coll).

Dactynotus erigeronensis (Thomas) n. comb. Canadian Fleabane Aphid

(Formerly placed in *Macrosiphum.*)

In 1818 Rafinesque described as new, two aphids which he called *Aphis erigeron-philadelphicum* and *A. erigeron-canadense* (p. 17 No. 34), the latter from Long Island. Hottes (Proc. Biol. Soc. Wash. 44:63 and 67, 1931) considers these to be the same and both the same as *Macrosiphum erigeronensis* (Thomas).

TAUGHANNOCK 4 Sept 1933, on *Erigeron* sp., EGGLESTON'S GLENN 12 Sept 1934, on *E. canadensis,* (Leonard and Crosby coll). ITHACA 9 Oct 1933, on goldenrod, (Crosby coll—Tissot det). YONKERS 30 Ju 1927, on *E. pulchella,* (J.L. Horsfall coll—MDL det). LI: ORIENT 3, 17 Jl 1959, respectively on *E. annuus* and top stems of *E. canadensis.* (Latham coll—det MDL with query), 11 Oct 1960, on *E. canadensis,* (Latham coll—Olive det); RIVERHEAD 24 Jl 1933 (MDL coll—Tissot det).

Dactynotus gravicornis (Patch) n.comb.

(Formerly placed in *Macrosiphum.*)

BATAVIA 14 Sept 1934, on *Arctium lappa,* ITHACA, on *Erigeron annuus,* (Crosby and Leonard coll). ITHACA Cayuga Heights 9 Aug about 1914, on sunflower, (O.A. Johannsen coll—Patch det; slide in Me. Agr. Exp. Sta.). LOCKPORT 8 Oct 1959, on *E. strigosus,* (Pechuman coll—Olive det). ROCHESTER 19 Jl 1960, on *E. speciosus* showy fleabane, plant from Colorado, (H. Lou Gibson coll—Olive det). MT. KISCO 9, 12 Jl, on *E. annuus,* 11 Aug, on *Eupatorium purpureum,* and 21 Aug 1960, on *Solidago juncea,* (Graham coll—Olive det). LI: BABYLON 26 Aug, on *Solidago*

sp., DIX HILLS 11 Jl 1934, on *Erigeron strigosus*, (Blanton coll—Tissot det); RIVERHEAD 21 Jl, on *E. canadensis*, (MDL coll), 29 Jl 1933 on *Erigeron* sp., (Leonard and Crosby coll); GREENPORT 26 Jl 1959, on *E. strigosus*, 22 Jl 1960, on *Hieracium aurantiacum*, (Latham coll—Olive det); RIVERHEAD 18 Sept 1946, on *Solidago puberula*. ORIENT 25 Jl 1946, 3 Jl 1959, on *Erigeron annuus*, BAY VIEW 2 Jl 1960, on *E. annuus*, and EAST MARION 17 Jl 1960, on *E. strigosus*, *Tanacetum vulgare*, (all Latham coll—Olive det); SHELTER ID. 28 Jl 1960, on *Erigeron annuus*, (Graham coll—Olive det).

Dactynotus idahoensis (Miller) n.comb.

(Formerly placed in *Macrosiphum*.)

ITHACA 19 Ju 1927, on *Anaphalis margaritacea*, (Griswold coll—MDL det; in CU).

Dactynotus illini (Hottes and Frison) n.comb.

(Formerly placed in *Macrosiphum*.)

ITHACA 9 Sept 1933, on *Helianthus annuus*, (Crosby coll—Tissot det). LI: BLANTON 8 Jl 1934, on sunflower leaves, (Blanton coll—Mason det; 1 slide in USNM marked "compared with type").

Dactynotus illini var. **sagamonensis** (Hottes and Frison) n.comb.

(Formerly placed in *Macrosiphum*.)

ITHACA 3 Sept 1933 (Leonard and Crosby coll).

Dactynotus impatiensicolens (Patch) n.comb.

(Formerly placed in *Macrosiphum*.)

ITHACA 3, 14 Sept 1934, on *Impatiens* sp., (Leonard and Crosby coll). LI: GREENPORT 16 Sept, SAG HARBOR 21 Sept 1946, on *Impatiens capensis*, (Latham coll—MDL det).

Dactynotus luteolus (Williams) n.comb.

(Formerly placed in *Macrosiphum*.)

MONKEY RUN, Tompkins Co. 10 Aug 1938, on *Solidago* sp., (T.R. Hansberry coll; in CU).

Dactynotus rudbeckiae (Fitch) n.comb. Goldenglow or Coneflower Aphid

(Formerly placed in *Macrosiphum*.)

This is a large brick-red to blood-red aphid which may at times be found clustered on the upper part of the stems of goldenglow with the heads of each individual pointed downwards. Although it is probably widely distributed in New York, available collecting records would indicate that it is not nearly so common as in Illinois.

In 1818 in the American Monthly Magazine and Critical Review, Vol. 3, p. 17, Rafinesque described as a new species, from NEWBURGH, New York, an aphid he called *Aphis gibbosa*. This is considered by Hottes (Proc. Biol. Soc. Wash. 44:66, 1931) to be the same as Fitch's *rudbeckiae*. Rafinesque states that he found it "on several species of *Solidago*, particularly on *S. odora, S. altissima* etc." Fitch described this as "*Aphis rudbeckiae* n.sp. No. 853, male" in his Cat. Homop. N.Y., p. 66, 1851 and states that it "infests the upper part of the stalks of *Rudbeckia laciniata, Solidago* (*serotina*) [now *gigantea*] and *S. gigantea*."

NYL – Probably widely distributed throughout the State. ALBANY, BEMIS HGTS., Ju; NASSAU and several Long Island records by Olsen which are given below. ITHACA, Nov 1913 sexual forms on *Solidago;* (Morrison coll). Leonard states in Jour. N.Y. Ent. Soc. 44:184, 1936: "we have made several collections from Ithaca and vicinity as well as on Long Island from goldenrod, goldenglow and *Aster umbellatus*, (coll Leonard and/or Crosby 1933 and 1934)."

LOCKPORT 1 Jl 1958, on *Rudbeckia laciniata*, (Pechuman coll—MDL det). ITHACA 29 Jl 1926, on *R. laciniata*, (Griswold coll; in CU), 4 Aug 1938 (F.H. Butt coll—Essig det) and 19 Sept 1935 (Crosby coll—det Olive 1961). MICHIGAN HOLLOW Tompkins Co. 11 Aug 1939, on *R. laciniata*, (W.M. Middlekauff coll—MDL det 1960). SI: PORT RICHMOND 1 Sept 1943, on stem below flower of *Cirsium* sp., (C.S. Tuthill coll —Mason det; Sp Port Surv). LI: MONTAUK POINT 30 Jl 1933, on *Rudbeckia laciniata*, (Leonard coll—Tissot det); BABYLON 12 Jl 1934, on *Vernonia noveboracensis*, (Blanton coll; 2 slides in USNM); also on same date, a collection by Blanton on *Pyrrhopappus carolinianus*, det Tissot with a query, but a slide in the USNM with the same data is determined without a query. LI records by Olsen: MASPETH Ju–Nov 1913–14, on *Silene noctiflora*, cultivated aster, goldenrod, *Lactuca* sp., *Xanthium canadense, Rudbeckia laciniata* and cultivated lettuce; at ROCKAWAY BEACH, on goldenrod; WADING RIVER, on *Antennaria neodioica*.

Dactynotus russelae Hille Ris Lambers

TUPPER LAKE 8 Aug 1959, on *Anaphalis margaritacea*, (Smith-Smith-Tuatay coll—CFS det).

Dactynotus sonchellus (Monell) n.comb.

(Formerly placed in *Macrosiphum*.)

ITHACA 30 Oct 1939, on *Taraxacum officinale* in greenhouse, (P.S. Bartholomew coll—Essig det). WEST NYACK 7 Aug 1947, on *Lactuca canadensis*, (Olsen coll). LI: RIVERHEAD 29 Jl 1932, on *Lactuca* sp., (Leonard and Crosby coll), 10 Oct 1948, on *Lactuca serriola*, (Latham coll), 28 Jl 1946, 28 Jl 1948, on *Lactuca spicata*, Oct 1948, 17 Sept 1957 and 24 Aug 1958, on *L. canadensis*, and 19 Oct 1948, on *L. serriola*, (all Latham coll—Olive det).

Dactynotus taraxaci (Kaltenbach) n.comb. Dark Dandelion Aphid

(Formerly placed in *Macrosiphum*.)

ITHACA 25 Ju 1914 (Johannsen coll—Patch det; in Me. Agr. Exp. Sta. Lot Book). GENEVA 29 Ju 1917 (no collector; Patch det; in Me. Agr. Exp. Sta. Lot Book). ERIE Co. Oct 1937 (Henry Page coll—MDL det). LI: MASPETH 27 Ju 1914 (Olsen coll); BABYLON Ju 1933 (Blanton coll). All records for this aphid from *Taraxacum officinale*.

Dactynotus tardae (Hottes and Frison) n.comb.

(Formerly placed in *Macrosiphum*.)

ITHACA (presumably) 22 Jl 1926, on *Helenium* sp. outdoors, (Griswold coll—MDL det; 5 alate slides in CU). Note – only noticeable difference from the Hottes and Frison description is that the cauda is yellowish.

Dactynotus tissoti (Boudreaux) n.comb.

(Formerly placed in *Macrosiphum*.)

LOCKPORT 8 Oct 1959, on *Erigeron strigosus*, (Pechuman coll—CFS det). JOHNSONBURG 5 Ju 1960, on *Aster puniceus*, (Pechuman coll—Olive det). ITHACA 1 Aug 1959, on *Solidago* sp., (Smith-Smith-Tuatay coll—Olive det). MT. KISCO 9, 12 Jl 1960, on *Solidago* sp., 20 Aug 1960, on *S. rugosa* and *S. juncea*, (all Graham coll—Olive det). WEST NYACK 22 Ju 1960, on *S. altissima*, 8 Ju 1960, on *Erigeron annuus*, (Graham coll—Olive det). LI: ORIENT 3 Jl 1959, on *E. annuus*, 13 Jl 1960, on *Solidago rugosa*, GREENPORT 28 Jl 1959, on *Erigeron strigosus*, 22 Jl 1960, on *Solidago rugosa*, and E. MARION 23 Jl 1960, on *S. altissima*, (all Latham coll—Olive det); SHELTER ID. 29 Jl 1960, on *Solidago* sp., (Graham coll—Olive det).

Drepanaphis n.sp. (*monelli* complex)

TONAWANDA INDIAN RES. Niagara Co. 1 Oct 1960, on *Acer nigrum*, (Pechuman coll—CFS det).

Drepanaphis acerifolii (Thomas) Painted Maple Aphid

NYL – A common though rarely abundant species on soft maple leaves, probably widely distributed throughout the state since it has been recorded or reported from ALBANY, DUTCHESS, HERKIMER, RENSSELAER, SARATOGA, TOMPKINS, and WESTCHESTER Counties.

ITHACA 1913 or 1914 ?, very common, but not abundant on the maples in this city, (Morrison), Jl, Aug, Sept 1933, 1937 and 1938, on *Acer saccharinum*, and Ju, Jl 1937, 1938, on *A. rubrum*, (Griswold coll; in CU) and 27 Ju 1959, on *A. rubrum* var. *trilobum* and *A. saccharum*, (Graham coll—CFS det). LOCKPORT 2 Jl 1960, on *A. saccharinum*, (Pechuman coll—CFS det). GENEVA 20 Sept 1946, on *A. saccharinum*, (Chapman coll—Mason det). LI: MASPETH Ju, Oct, on *A. saccharinum*,

(Olsen coll); FLUSHING New York World's Fair Grounds 11 Ju 1939, on *A. rubrum*, (scarce; Leonard coll).

Drepanaphis carolinensis Smith

ITHACA Forest Home Sept 1934, on *Acer saccharum*, (Crosby and Leonard coll). LOCKPORT 5 Sept 1960, TONAWANDA IND. RES. 1 Oct 1960, on *A. nigrum*, MEDINA 22 Sept 1960, on *A. saccharum*, (all Pechuman coll—CFS det).

Drepanaphis kansensis Smith

GENEVA 20 Sept 1946, on *Acer saccharum*, (Chapman coll—Mason det). MEDINA 22 Sept 1960, on *A. saccharum*, LOCKPORT 5 Sept 1960, a "drift" on *Spiraea*, (Pechuman coll—CFS det).

Drepanaphis monelli (Davis)

CROSBY 10 Sept 1934 a "drift" on milkweed, (Leonard and Crosby coll).

Drepanaphis parvus Smith

MCLEAN 15 Sept 1934 (oviparous females present), on *Acer saccharum*, (Leonard and Crosby coll).

Drepanaphis sabrinae Miller

GASPORT, LOCKPORT, Sept 1960 ("drifts"; Pechuman coll—CFS det). ITHACA 13 Sept 1933, on *Acer saccharum*, (Crosby coll—Tissot det).

Drepanaphis simpsoni Smith

LOCKPORT 5 Sept 1960 ("drifts"; Pechuman coll—CFS det). ITHACA 1 Aug 1959, one alate on *Acer saccharum*, (Smith-Smith-Tuatay coll—CFS det). MEDINA 22 Sept 1960, on *A. saccharum*, (Pechuman coll—CFS det).

Eriosoma americanum (Riley) Woolly Elm Aphid

NYL – Probably generally distributed throughout the state, available records including from ST. LAWRENCE and ESSEX COUNTIES southward to WESTCHESTER COUNTY and MASPETH, LI. Probably to blame for the early summer curling of American elm leaves (Felt).

GENEVA and ALBANY "many alate lice and nymphs in rolled leaves of American elm, 29–30 Ju and 1 Jl 1909 respectively." (Gillette, J.E.E. 2(5):356, 1909).

ITHACA 10 Ju 1939, in curled leaf of *Ulmus americana*, (P. A. Readio coll), 27 Ju 1939, on *Amelanchier canadensis*, (Hansberry coll). MONROE 8 Ju 1925, on elm, (USNM). SODUS 28 Jl 1950, one alate "drift" on wild cherry, (S.H. Kerr coll; in USNM). LI: WINFIELD 8 Ju 1913, on

elm, (Olsen coll); GREENPORT 14 Jl 1957, on *Ulmus americana,* ORIENT 26 May 1958, on *Amelanchier canadensis,* (Latham coll).

Eriosoma crataegi (Oestlund)

ITHACA "The woolly aphids first became noticeable in early June as small white spots on the tender twigs of *Crataegus.* In a favorable season, such as the summer of 1918, they become very conspicuous and cover entire branches by late summer. The writer has not found the roots of *Crataegus* infested." (Wellhouse, W.H., Cornell Univ. Mem. 56:1064–1065, 1922). Note by MDL – Although the foregoing is under *Eriosoma lanigerum* (Hausm.) it is assumed *E. crataegi* (Oestl.) is referred to.

SYRACUSE 12 Sept 1917, on *Crataegus* sp., (USNM). YONKERS 25 Aug 1931, on *C. oxycantha,* (Sp Port Surv; USNM). ITHACA 15 Sept 1933, on *Crataegus* sp., (Crosby coll). BATAVIA Sept 11, BARRINGTON Sept 18, 1934, abundant on *Crataegus,* (Leonard and Crosby coll). SI: ROSEBANK 24 Aug 1943, extremely heavy infestation on stems of *Crataegus* sp., (Tuthill coll; Sp Port Surv; USNM). LI: BROOKLYN Botanic Gardens 1, 8 Jl 1921, on *Crataegus* sp., (USNM); LOCUST VALLEY Sept 1936, on *C. crusgalli,* (Maxwell coll); BAY VIEW 29 Ju 1960, on *C. chrysocarpa,* (Latham coll).

Eriosoma lanigerum (Hausmann) Woolly Apple Aphid

NYL – Widely distributed throughout the State from ST. LAWRENCE and ESSEX COUNTIES southward to MASPETH, LI. Apple, *Crataegus* and elm, often injurious.

GENEVA, NEW YORK Central Park, "noticed at these places on 29–30 June and 2 July 1910, respectively." (Gillette, J.E.E. 3(5):356, 1910). SYRACUSE 1 Ju 1925, on elm (USNM). ITHACA 8 Oct 1933, on apple, (Crosby coll), 10 Ju 1939, in curled leaf of *Ulmus americana,* (Readio coll). LOCKPORT 24 Aug, 22 Sept 1960, on *Crataegus oxycantha* var. *paulii,* (Pechuman coll—det CFS with query). SI: CASTLETON CORNERS 20 Oct 1960, in bark wounds of *Malus floribunda,* (Rundlett coll). LI: MASPETH 19 Aug 1914, on apple, (Olsen coll); SOUTHAMPTON 17 Ju 1943, on elm, (A. T. Gaul coll; Sp Port Surv); GREENPORT 6 Ju 1958, in curled leaves of *Ulmus americana,* MATTITUCK 21 May 1959, on apple twigs, (both Latham coll).

> "On the bark of the young branches of the apple, to which tree in Europe it has been a great pest. Commonly only solitary individuals are here found, but in one instance have I met with it clustered and covering a limb as described by foreign writers. No. 861, male." (Fitch, Fourth Rept. p. 67, 1851). Dr. P. J. Chapman, Entomologist of the New York (Geneva) Agricultural Experiment Station wrote me (July 1961) as follows in respect to this aphid on apples in New York: "Widely distributed but not considered an economic pest in commercial orchards. Occasionally causes serious damage to nursery stock."

Eriosoma lanuginosa Hartig Pear Root Aphid

LI: WINFIELD 15, 27 Ju 1914, MASPETH 19 Jl 1914, on elm, (Olsen coll).

Eriosoma rileyi (Thomas) Woolly Aphid of the Elm Bark

NYL – Probably generally distributed throughout the State, but recorded only from WATERTOWN, NORTHVILLE, on elm, (Felt).

ITHACA 8 Ju 1915, a small colony on a young elm, (Morrison coll), 28 Ju 1928, on *Ulmus* sp., (L.P. Wehrle coll—Griswold det).

Eriosoma ulmi (Linnaeus)

NYL – The distribution of this species within the state is probably coincident with that of *E. americanum* Rly. but *E. ulmi* is probably less common (Baker and Mason). Common on certain English elms (Patch).

Essigella pini Wilson Speckled Pine Needle Aphid

LI: RIVERHEAD 29 Sept 1946, on *Pinus rigida,* (Latham coll).

Euceraphis betulae (Koch) European Birch Aphid

A large yellowish aphid occurring singly on the underside of the leaves of several species of birch, dropping readily when disturbed and having long whitish cottony threads on antennae and legs. Presumably occurs wherever birches grow, having been recorded from Northern New York to Eastern Long Island.

Fitch, as *Aphis cerasicolens* n.sp. "When irritated, the legs and antennae instantly emit from their pores a bluish white cotton-like substance, which remains adhering to them, resembling fine mould. On the common black cherry tree (*Cerasus serotina* D.C.), No. 841, male." (Cat. Homop. NY, p. 65, 1851). (Note this occurrence on cherry was accidental.) "*Geneva* 29–30, Ju 1909, common on white birch," (Gillette, J.E.E. 3(4): 371, 1910).

WHITE PLAINS 27 Sept 1914, on *Betula lutea,* (Olsen). ITHACA May (Patch), Ju, Oct (males) 1937, 1938, on *B. populifolia,* (Griswold coll): Sept 1934, on *Betula* sp., (Crosby and Leonard coll). COVEY HILL GULF, PERU Clinton Co. Sept. 1936, on *B. alba,* (Crosby coll). LYNDONVILLE 17 Ju 1959, on *B. lenta* and *B. papyrifera,* (Pechuman coll). ALBANY Jl, Oct 1927, on roof of the State Education Building (Felt and Chamberlain). LI: GREENPORT, SOUTHOLD Ju, Jl 1958, on *B. lenta,* MATTITUCK May 1959, on *B. pendula,* and GREENPORT Jl 1959, on *B. lenta,* (all Latham coll).

Euceraphis brevis Baker

ITHACA 15 May 1911, on *Betula* sp., (Patch coll; A. C. Baker, J.E.E. 10:426, 1917).

Euceraphis deducta Baker

BEDFORD Westchester Co. Ju 1935, on leaves of *Betula lutea,* (S.W. Bromley coll). LI: ORIENT 1 Jl 1932, food plant unrecorded, (Latham coll—Mason det; in USNM).

Euceraphis gillettei Davidson

LYNDONVILLE 19 Ju 1959, on *Betula maximowicziana,* (Pechuman coll—Ole Heie det).

Palmer records it as common throughout the Rocky Mountain region.

Euceraphis lineata Baker

NYL–KARNER (1923), on gray birch, (Leonard coll—Patch det).

Euceraphis mucida Fitch

Fitch, as *Aphis pinicolens* n.sp. "Solitary on pine. No. 851, male." (Fitch, Cat. Homop. N.Y. p. 66, 1851). A COTYPE slide in USNM is marked "Fitch 842 from Fitch collection, Pergande 9391." Also 2 TYPE slides in USNM Nos. 9315-1 and 9315-2 as *Calliptaphis* (*Callipterus*) – 1 alate each, on apple. (Note – the occurrence on pine was accidental.) LYNDONVILLE 17 Ju 1959, on *Betula lenta,* (Pechuman coll—Ole Heie det). WEST NYACK 5 Ju 1958, on *B. lenta,* (Olsen coll). LI: BABYLON 22 Ju 1932, on birch, (Blanton coll); GREENPORT 4 Jl 1959, on *B. lenta,* (Latham coll—Ole Heie det).

Euceraphis punctipennis (Zetterstedt)

LYNDONVILLE 17 Ju 1959, on *Betula papyrifera,* (Pechuman coll—Ole Heie det).

This is probably the first record for the United States.

Eulachnus agilis (Kaltenbach)

ALBANY City Park 1 Jl 1909, on pine leaves, ("Both alate and apterous forms of this louse were taken. Lice very active and difficult to capture." Gillette, J.E.E. 2(6): 385, 1910). PORT CHESTER 15 Oct 1935, on *Pinus sylvestris,* (S.W. Bromley coll). RYE 15 Oct 1935, on needles of *P. resinosa,* (S.W. Bromley).

Eulachnus rileyi (Williams). Powdery Pine Needle Aphid

ITHACA 5 Ju 1937, on *Pinus nigra,* (Gerberg coll—Essig det; in CU), 15 May 1939, on *P. nigra,* (Griswold coll and det; in CU); 16 Ju 1915, on Austrian pine, (Morrison coll) and RYE 1 Oct 1935, on needles of red pine, (S.W. Bromley coll). LI: HAMPTON BAYS 25 Ju 1946, RIVERHEAD 21 Sept 1957 (ovip. and males), on *P. rigida,* (Latham coll—Hottes det).

Forda sp.

SYRACUSE Sept 1911, on aster roots, (Pergande det).

Forda formicaria Heyden Grain Root Aphid

COLONIE Albany Co. 19 May 1952, on roots of *Oenothera biennis*, (J.A. Wilcox coll—det Maxson 1960 as near *occidentalis*). LI: MASPETH 21 Ju 1913, on roots of *Polygonum* sp., (Olsen coll).

Forda olivacea Rohwer

ITHACA 8 Sept 1921, on roots of *Aster* sp., (Crosby coll; in USNM).

Geoica lucifuga (Zehntner)?

Slides det with query by Maxson in 1960 from Latham's collecting 1959 (1 in 1958), all on roots: LI: ORIENT 15 Jl 1958, 6 Nov 1959, on *Calendula officinalis**, 16 Jl, on *Tragopogon porrifolius*, 9, 30 Oct, on *Aster levis*, 9 Oct, on *Helianthus grosserratus*, 24 Oct, on *H. annuus*, 1 Nov, on *Tithonia*, sp.*, 6 Nov, on *Beta vulgaris**, *Tagetes erecta** and *Cosmos bipinnatus**, and 7, 11 Jl, on *Galinsoga parviflora*; E. MARION 10 Oct, on *G. parviflora*; MATTITUCK 16 Oct, on *Ambrosia artemisifolia*. (*Aphids on these plants attended by ant *Lasius* (*Acanthomyops*) *claviger* (Rog.) M. R. Smith det).

Geoica utricularia (Passerini) (*squamosa* Hart)

CLYDE 23 Oct 1909, on wheat roots, (H.E. Wilson coll and det; in USNM). ITHACA 8 Jl 1952, in flight near potato field, (S.H. Kerr coll; in USNM).

Georgiaphis ulmi Wilson

LYNDONVILLE 7 Jl 1960, GRAND ISLAND Erie Co. 2 Ju 1959, on *Ulmus rubra*; LOCKPORT 4 Ju 1960, on *U. thomasi*, (Pechuman coll—CFS det).

Widely distributed in Illinois, where it sometimes so badly curls the leaves of certain elms as to stunt the growth of the trees.

Gobaishia ulmifusa (Walsh and Riley)

NYL – Reported from WARREN, ONTARIO, FULTON, GREEN and WESTCHESTER COUNTIES, but is presumably widely distributed in the state though rarely abundant. Produces a good sized, somewhat irregular gall on leaves of slippery elm (Felt). Described from New York and Southern Illinois in 1869.

Hamamelistes spinosus Shimer Spiny Bud-Gall of Witch-Hazel

As *Hormaphis papyraceae* (Oestl.) in NYL – CRANBERRY LAKE on willow birch (Osborn) – this plant name cannot be substantiated.

NYL – Probably widely distributed, though not usually abundant excepting possibly on birch, its alternate food plant. ALBANY Jl (Gillette), HUDSON (Felt), CANANDAIGUA Aug, and TARRYTOWN Ju. Produces a spiny bud-gall of witch-hazel.

SARATOGA Sept 1879, on witch-hazel, (W.S. Barnard coll—Tissot det). ALBANY 1 Jl 1910. "The powdery apterous form of this louse was taken in abundance upon the underside of the leaves of white birch." (Gillette, J.E.E. 3(5):353, 1910). NEW YORK and vicinity, reported very common on witch-hazel (Beutenmueller). YONKERS 8 Ju 1927, on birch, (J.L. Horsfall coll). ITHACA 2 Jl, in curled leaves of *Betula populifolia*, 25 Jl 1939, on *Hamamelis virginiana*, (Griswold; in CU). LI: LOCUST VALLEY Aug 1936, "a spiny bud gall on witch-hazel," (Maxwell coll); BABYLON 13 Nov 1943, galls on witch-hazel, (Plummer coll—Mason det; Sp Port Surv); NASSAU Co. 10 May 1952, on white birch, (Tuthill coll; in USNM); NORTHWEST 12 Jl 1951, on *Betula alba*, (Latham coll; in USNM); GREENPORT 22 Jl, on *B. populifolia*, 27 Ju 1958, "drifts" on *Prunus cerasus*, (Latham coll). LYNDONVILLE 17 Ju 1959, on *Betula lenta*, 19 Ju, on *B. nigra*, (Pechuman coll). HIGHLAND FALLS 9 Ju 1942, galls on stems of *B. populifolia*, (in AMNH).

Hoplochaitophorus n.sp.

ITHACA 26 Jl 1937, on *Quercus montana*, (4 slides, no alates, Griswold coll; labeled as *Stegophylla* n.sp.; Granovsky wrote 18 Feb 1959: this is *Hoplochaitophorus* n.sp. near *S. quercicola* (Mon.)).

Hoplochaitophorus quercicola (Monell)

ITHACA 14 Sept 1933, "a large white oak tree dripping with honeydew," (Crosby coll). LI: GREENPORT 5 Oct 1946, SOUTHOLD 18 Sept 1946, on *Quercus bicolor*, (Latham coll).

Hormaphis hamamelidis (Fitch)

The complicated life history of this aphid, which alternates between witch-hazel and birch, was worked out by Pergande and published by him (USDA, Div. Ent., Tech. Series 9, pp 1–44, 1901) after, as he says in the introduction to this paper, "nearly twenty-two years of patient labor." It has been recorded only once from birch in New York. Fitch, as *Byrsocrypta hamamelidis*, n.sp. "Inhabits conical follicles on the upper surface of witch-hazel leaves; each follicle contains about a dozen individuals, and has a small orifice on the under surface of the leaves. No. 869, male; 870 larva; 871, its follicle." (Fitch, Cat. Homop. N.Y. p. 69, 1851).

NYL – A common and probably widely distributed species producing a characteristic conical gall on the leaves of witch-hazel. NEWPORT, ONEONTA, NASSAU and LI: WADING RIVER.

ITHACA (about 1914) the galls are very common on nearly every witch-hazel bush in this vicinity, (Morrison coll). NEW YORK Botanical Gardens 5 Jl 1921, on birch, (Sanford and Griffiths; in USNM). HAINES FALLS 26 Ju 1937, on witch-hazel, (L.B. Lange coll; in USNM). ITHACA 10 Sept 1933, on witch-hazel, (Crosby coll), 16 Jl 1938, on witch-hazel, (Griswold coll), 13 Aug 1952, in flight in vicinity of potato fields, (S.H. Kerr coll; in USNM); ITHACA Beebe Lake 2 Ju 1958, galls only, (Graham coll). LI: WADING RIVER May 1913, 1914, on witch-hazel, (Olsen); SOUTHAMPTON 25 Ju 1946, cone galls on witch-hazel, (Latham coll—Weld det).

Hyalomyzus eriobotryae (Tissot)?

TONAWANDA INDIAN RES. Genesee Co. 3 Sept, 10 Oct 1960, scarce on *Colinsonia canadensis,* (Pechuman coll—CFS det with query). Although Tissot described this species (1935 under *Myzus*) from *Eriobotrya,* it is recorded in Florida also from *Crataegus* and apple. It may therefore be one of those species that overwinters on these two latter plant genera and migrates to Labiatae to spend the summer.

Hyalopteroides humilis (Walker) (**dactylidis** Hayhurst)
Orchardgrass Aphid

LI: BABYLON 23 May 1933, on *Panicum* sp., (Blanton coll); ORIENT 7, 8 Dec 1960, common on blades of *Dactylis glomerata,* (Latham coll).

Hyalopterus arundinis (Fabricius) Mealy Plum Aphid

This aphid is undoubtedly distributed throughout the state since it has been recorded from all of the fruit counties in western New York, and has been observed in the Hudson River Valley and on Staten Island and on Eastern Long Island.

Definite collections include the following: FREDONIA, 1888 (Pergande coll). SHERIDAN 22 Jl 1905, on cult. plum, (Hayhurst coll). ROCHESTER in 1917, on *Prunus* sp., (Geo. A. Francis coll—Patch det; Me. Agr. Sta. Lot Book). ALBANY, alate on roof of State Ed. Bldg., 8 Oct 1927 (Felt and Chamberlain). LOCKPORT 29 Jl, MIDDLETOWN 13 Ju 1939, on plum, (slides in CU). CATSKILL 17 Jl 1959, on *Phragmites communis,* (Wilcox coll). BERGEN SWAMP Genesee Co. 9 Aug 1959, 2 Aug 1960, ZURICH BOG Wayne Co. 16 Jl 1960, on *P. communis;* TONAWANDA INDIAN RES. Genesee Co. 18 Jl 1960, on *Desmodium canadensis,* (all Pechuman coll—CFS det). SI: 2 Sept 1943, on blades of marshgrass *Spartina* sp., (Tuthill coll—Mason det); CASTLETON CORNERS 1, 7 Nov. 1960, a number of males caught in a "Moericke Trap", (Rundlett coll—J.O. Pepper det). LI: HUNTINGTON 7 Ju 1938, very abundant and injurious to several plum trees, (Leonard and Haude coll); BABYLON 3 Jl 1939, on reedgrass, (Ed Kurtz coll—Mason det); ORIENT 24 Sept 1946, 17 Ju, 26 Jl, 1960,

Riverhead 29 Sept 1946, Manorville 1 Aug 1947, Greenport 28 Ju 1958, Southold 3, 8 Jl 1960 and Bayview 10 Jl 1960, all on *Phragmites communis*, (all Latham coll). Orient 15, 27 Ju 1958, on *Prunus avium*, 5 Jl 1959, on *P. hortulana*, 17 Ju 1960 on *P. domestica*, 10 Oct 1960, on *P. seiboldi*, (all Latham coll); Maspeth 1 Nov 1914, on *P. serotina*, (Olsen coll).

This aphid frequently becomes abundant on the foliage and new growth of plums and prunes and is sometimes very injurious to the trees. It spends the winter as eggs on the plum but in the early summer most of the aphids migrate to breed on their summer hosts, chiefly *Phragmites*, the descendants of these returning in the fall to lay eggs on the plum.

From 1921 to 1941 the extension entomologists of the New York State College of Agriculture made many observations on the occurrence of this aphid throughout western New York on plums and prunes. These showed it to be seasonally and locally light to abundant. J. A. Evans reported that during 1941 an unusually heavy infestation occurred in a number of plum orchards in Western New York and some growers were forced to apply a special spray. La Plant reported it of local importance on plum and prunes in Rockland and Orange Counties in 1952.

Hyapopterus atriplicis (L.) Boat Gall Aphid

This cosmopolitan aphid causes a severe leaf curling or podlike folding of the leaves of lamb's quarters and probably occurs wherever this plant grows in the state although not many collections have been made.

NYL – Fredonia [parasitized by *Lysephlebius cragrostaphidis* Ashm]. Lily Dale Jamestown, on *Chenopodium* sp., (Hayhurst coll).

Chautauqua Aug 1908 (Hayhurst coll). Geneva, New York Central Park Ju 29, 30, 1910, 2 Jl 1910 respectively, presumably on *Chenopodium* sp., (Gillette, J.E.E. 3(5): 405, 1910). East Aurora 10 Aug 1933, on *Ch. album*, (MDL coll). Lockport 20 Jl 1960, on *Ch. album*, (Pechuman coll—CFS det). LI: Maspeth 17 Jl 1913, 2 Aug 1914 (Olsen coll); Riverhead 21 Jl 1933, on *Ch. album*, (MDL coll); East Marion 22 Ju, Orient 14 Jl 1946, common on *Ch. album*, (Latham coll).

Hypermyzus pallidus Hille Ris Lambers

Lockport 10 Oct 1960, on *Saxifraga* (*Bergenia*) *crassifolia*, (Pechuman coll—CFS det). Described in 1935 from Holland and England on *Sonchus oleraceus*, this aphid is apparently rather widely distributed in Europe. This may be the first record for the United States.

Hysteroneura setariae (Thomas) Rusty Plum Aphid

Ulster Co. 24 Ju 1929, serious injury to plums, (Crosby). Genesee Co. 2 May 1935, on plums, (D.L. Hayes). Niagara Co. 3 Jl 1939, severe on plums, (R.W. Leiby). Bronx 19 Oct 1943, on *Prunus yedoensis* var. *yoshino*, (J.R. Adams coll—Mason det; in USNM). LI: Maspeth 19 Sept 1914, on *Digitaria sanguinalis*, (Olsen coll).

Idiopterus nephrelepidis Davis

ITHACA 28 Apr 1914, one collection on ferns in the greenhouses of the Ag. College at Cornell. Presumably not previously reported from the state, (Morrison coll).

NYL – ITHACA Feb, Mar and Dec 1927, in greenhouse on *Adiantum, Nephrolepis exaltata* var. *bostoniensis, Cyrtomium* and *Pteris,* (Griswold coll—Patch det).

STELLA NIAGARA 30 Aug 1926, no plant given, (Mother M. Alfonse coll—Mason det; in USNM).

Kakimia sp.

GENEVA 20 Oct 1946, ovipositing on an ornamental *Ribes,* (Chapman coll—Mason det).

Kakimia cynosbati Oestlund Dogberry Aphid

ITHACA 9 Oct 1932, on currant, (Leonard and Crosby coll). LOCKPORT 4 Nov 1958, on *Ribes hirtellum,* (Pechuman coll).

Kakimia essigi Gillette and Palmer Black-backed Columbine Aphid

FREDONIA Ju 1905, on *Aquilegia vulgaris,* (Hayhurst coll). ITHACA 7, 20 Sept 1937, on *A. chrysantha,* (Griswold coll and det).

Kakimia houghtonensis (Troop) Gooseberry Witchbroom Aphid

LEWIS Jl 1918, on *Ribes rotundifolium,* (P. Spaulding coll—Mason det; in USNM).

Kakimia purpurascens (Oestlund)

OWLENBURG BOG Catt. Co. 20 Ju 1959, BARRE Burma Woods 22 Ju 1960, on *Thalictrum polygonum,* (Pechuman coll). LI: NORTHWEST 26 Ju 1947, SAG HARBOR 21 Ju 1948, on *T. revolutum,* (Latham coll); GREENPORT 8, 25 Ju 1958, on *T. revolutum, T. polygonum* respectively, (Latham coll).

Lachnus laricifex Fitch

Original description by Fitch under heading "Larch Insects": "Solitary upon the smaller twigs, stationed in the axils of the tufts of leaves. Many of the lice were noticed on a particular tree the latter part of May but no winged ones were to be found . . . many of them were accompanied by four or more young." (Fitch, Fourth Rept. p. 752, 1859).

ITHACA 5 Ju 1914, a few stem mothers on a certain larch on which it is reported to sometimes become very common, (Morrison coll).

Lachnus salignus (Gmelin) Giant Willow Aphid

This is one of our largest aphids – 4.5 to 5.5 mm. in length. It is blackish and bears a prominent tubercle on the dorsum of the thorax. It is probably locally and seasonally abundant on willows throughout the state but the only definite records are those that follow:

NYL – Poughkeepsie, Ossining May, on willow. LI: Flushing Sept, on willow.

Mount Vernon 2 Jl 1928, on *Salix* sp., (Bartlett Tree Res. Labs.). Lockport 8 Sept, 12 Nov 1960, on *S. bebbiana* "Very abundant in large patches on trunk and larger branches.", Geneva 22 Oct 1960, in flight, (Pechuman coll—CFS det). Lockport 18 Sept, 12 Nov 1960, on *S. matsudana* var. *tortuosa,* 20 Nov 1960, on *S. babylonica,* (Pechuman coll—CFS det). SI: Castleton Corners 31 Oct 1960, on *S. babylonica,* (Rundlett coll). LI: Orient 5, 15 Oct 1950, on *S. incana,* (Latham coll; in USNM).

Longistigma caryae (Harris) Hickory Aphid

This is our largest aphid. It often appears in large clusters on the limbs of several kinds of trees sometimes becoming so numerous as to seriously affect the health of such city shade trees as sycamores.

Ithaca (presumably this aphid), second week in Nov 1913; a few oviparous females on young trees of the common beech *Fagus americana;* no eggs observed, (Morrison coll).

NYL – South Byron Ju (J. F. Rose coll).

Letchworth Park 2 Ju 1933 ("flying"; Dietrich coll). New York 22 May 1946 ("on wing"; AMNH). Geneva 20 Oct 1946, ovipositing on *Tilia europea,* (Chapman coll—Mason det). Lockport 13 Ju 1954, "free flying", (Pechuman coll). LI: Locust Valley 1 Sept 1934, on birch (Maxwell coll); Babylon 18 Jl 1934, on twigs of a dead maple, (Blanton coll); Floral Park Oct 1932, on sycamore, (R.T. Ennis coll—Crosby det); Westbury Aug 1932, on hickory, (Bartlett Tree Res. Labs); Westbury 6 Oct 1943, on *Quercus palustris,* Lynbrook 11 Oct 1943, on Oriental Plane Tree, (Plummer coll; Sp Port Surv); Mattituck 26 Ju 1946, (1 alate; Latham coll).

Macrosiphoniella sp.

LI: Greenport 29 Ju 1947, on *Polygonum convolulus,* (Latham coll—Olive det).

Macrosiphoniella n.sp.?

Lockport 4 Aug 1960, on *Artemesia schmidtiana* var. *nana,* (Pechuman coll—det CFS with query).

Macrosiphoniella absinthii (L.)

ITHACA in student garden, 12 Ju 1928, on *Artemesia absinthium*, (Griswold coll—MacGillivray det; 5 slides, 3 apterae each, in CU).

I find no other records for the U.S.A. Dr. MacGillivray writes she has collected this aphid in New Brunswick, Canada.

Macrosiphoniella artemesiae (Gillette)

MT. KISCO 22 Aug 1960, on *Artemesia vulgaris*, (Graham coll—CFS det). Previously recorded only from Colorado, Utah and Southern Idaho.

Macrosiphoniella ludovicianae (Oestlund)

Dark-leaved Wormwood Aphid

(Formerly placed in *Macrosiphum*.)

ITHACA 4 Ju, 22 Sept, on Costmary Chrysanthemum *Chrysanthemum (balsamita) majus;* 5 Ju 1939, on *Tanacetum vulgare*, (both Griswold coll). LI: GREENPORT 13 Jl 1947, SOUTHOLD 1 Jl 1959, in heads of *T. vulgare*, (Latham coll).

Macrosiphoniella millefolii (DeGeer)

(Formerly placed in *Macrosiphum*.)

TULLY 18 Jl 1952, on yarrow *Achillea millefolium*, (J. O. Pepper coll and det). APALACHIN 15 Oct, OLCOTT Keg Creek 5 Oct 1960, on *A. millefolium*, (Pechuman coll—CFS det). MT. KISCO 24 Ju, 11 Jl and 21 Aug 1960, PINEBROOK 22 Ju 1960, on *A. millefolium*, (Graham coll—CFS det). WEST NYACK 9 Ju 1960, on *A. millefolium*, (Olsen coll—CFS det). LI: ORIENT 22 Jl 1946, on *A. millefolium*, GREENPORT 7 Jl 1959, on *A. lanulosa*, (Latham coll—Olive and CFS det); SHELTER ID. 28 Jl 1960, on *Achillea* sp. (Graham coll—CFS det).

Macrosiphoniella sanborni (Gillette) Chrysanthemum Aphid

Undoubtedly present on chrysanthemums throughout the state, often becoming sufficiently numerous to stunt the growth of the plants and flowers. Very few definite records, due no doubt to the fact that it is so common it has seemed hardly worthwhile to make collections.

NYL – ITHACA Feb presumably in greenhouse (Patch det).

SEA BREEZE Monroe Co. 10 Nov 1933 (J. M. Van Dorn coll). LOCKPORT 17 Sept 1946 (Pechuman coll), 10 Oct 1960, on *Chrysanthemum morifolium*, (Pechuman coll—CFS det). LI: MASPETH 13, 18 Jl 1914 (Olsen coll); ROCKVILLE CENTER 5 Mar 1919 (MDL coll); CORONA 27 Ju 1931 (USNM); BABYLON 7 Ju, 18 Dec 1934 (Blanton and F. J. Spruijt coll respectively); ORIENT 6 Jl 1959 (Latham coll).

Macrosiphoniella tanacetaria Kaltenbach

ALBION 22 Ju, LOCKPORT 4 Aug and LYNDONVILLE 15 Sept 1960, on

Tanacetum vulgare, (Pechuman coll—CFS det). LI: ORIENT 16 Jl 1960, on *T. vulgare,* (Latham coll—CFS det).

Macrosiphum sp.

FREDONIA 2 Sept 1905, on *Rosmarinus officinalis,* (Hayhurst coll).

Macrosiphum sp.

SI: NEW BRIGHTON 30 Aug 1943, on flowering parts of *Lactuca serriola* var. *integrata,* (C. S. Tuthill coll—det Mason who states: "I have seen this species before on *Lactuca* in the East. It is probably undescribed."; Sp Port Surv).

Macrosiphum sp.

RINGWOOD Tompkins Co., on *Matricaria chamomilla,* (Leonard and Crosby coll).

Macrosiphum sp.

LI: ORIENT 9 Dec 1960, on *Glecoma hederacea,* (Latham coll).

Macrosiphum agrimoniellum (Cockerell)

LI: GREENPORT 20 Jl 1958, ORIENT 17 Jl 1959, on *Agrimonia grypo-sepala,* (Latham coll).

Macrosiphum albifrons Essig Essig's Lupine Aphid

ITHACA in Miss Mimm's garden 17 Ju 1927, on *Lupinus polyphyllus,* (Griswold coll). DRYDEN 10 Ju 1938, on *L. polyphyllus,* (Griswold coll). WEST NYACK 17 Jl 1959, 28 Jl 1960, abundant on cult. *Lupinus* sp., (Olsen coll). LOCKPORT 17 Oct 1960 (Pechuman coll). LI: "LONG ISLAND" no date, on lupine, (C. F. Domcette coll—Mason det); BABYLON, no date, on lupine, (C. A. Weigel coll—Mason det: slides in USNM).

Macrosiphum anomalae Hottes and Frison?

ITHACA 29 Sept 1933, on *Aster novae-angliae,* (Crosby coll—det Tissot with query). MEDINA 30 Oct, LOCKPORT 26 Sept, 3, 8 and 18 Oct 1959, on *A. novae-angliae,* (Pechuman coll—det Olive with query).

Macrosiphum baccharidis (Clarke)

LI: ORIENT 26 Jl 1960, on *Baccharis halmifolia,* (Latham coll—Olive det).

Macrosiphum californicum Clarke (*laevigatae* Essig)

SHERIDAN 30 Jl 1905, on *Salix* sp., (Hayhurst coll—Tissot det).

TONAWANDA INDIAN RES. Genesee Co. 13 Ju 1959, LOCKPORT 30 Ju 1958, on *Salix* sp., (Pechuman coll). LI: ORIENT 18 Jl 1958, on *S. caprea*, (Latham coll).

Macrosiphum carpinicolens Patch

ITHACA 3 Aug 1937, on *Carpinus caroliniana*, (Griswold coll). LYNDONVILLE 8 Jl 1959, "a nice colony" on *C. caroliniana*, (Pechuman coll).

Macrosiphum dirhodum (Walker) Rose Grass Aphid

ITHACA 18 Mar 1913, in the plant breeding greenhouses on rose; (Morrison coll), 9 Sept 1927, on lamb's quarters in greenhouse, (2 apterae; P. J. Chapman coll—det MDL with query).

Macrosiphum euphorbiae (Thomas) Potato Aphid

The potato aphid has long been widely known in American literature as *M. solanifolii* Ashmead. It is a fairly large aphid about 3 mm. in length, which has both green and pink forms and is distributed throughout the state on a wide variety of food plants botanically unrelated. In some years in New York it becomes very destructive to potatoes and tomatoes in commercial plantings and has been recorded as locally abundant and injurious to eggplant, lettuce and spinach. It is sometimes fairly common on iris and gladiolus.

The potato aphid passes the winter primarily as eggs on the rose and reportedly on certain other Rosaceae such as *Agrimonia* and *Potentilla*. This has not been substantiated in New York. In New Jersey the eggs are found in greater or less numbers from year to year in several localities on swamp rose *Rosa palustris*. Probably two or three generations are produced following egg hatching, which occurs about the time the leaf buds are opening, and these aphids migrate to potato, tomato and other herbaceous plants. In warm weather a female reaches maturity in ten days or two weeks and may give birth to more than fifty young over a period of about fourteen days.

Probably the most destructive outbreak ever recorded on potatoes in New York occurred in 1917, becoming serious in early July. Many large fields were observed in which all the plants were killed to the ground. (Manual of Vegetable Garden Insects by Crosby and Leonard, p. 152, 1918). Besides the direct injury it does by extracting the plant juices, the potato aphid is implicated throughout its entire range in the transmission of as many as 35 plant viruses. Among these are potato leaf-roll.

Dr. Karl H. Fernow of the Department of Plant Pathology, Cornell University wrote me in September 1961 that since this aphid has been reported as a vector of leaf-roll of potatoes in Maine, although not a very efficient one, the same situation probably occurs in New York. Since the Maine workers indicate it is particularly efficient in the transmission of Virus A-mild mosaic it probably was formerly a vector also in New York. He states that this virus used to be a considerable problem in New York in the potato variety Green Mountain but this variety has almost completely been replaced by varieties which are apparently resistant to this virus so we do not very often see it or recognize it anymore.

During the seasons of 1958–60 W. H. Day and W. A. Rawlins of Cornell University made a study (as yet unpublished) of the parasites and predators of the potato aphid on potatoes in connection with control by the use of

insecticides. This was done at Riverhead, Long Island. They have kindly permitted me to include the names of the parasites and predators in this List. The parasites are as follows:

Braconidae: *Aphidius nigripes* (Ashm.), *A. nigriteleus* Smith, *A. rosae* Hal. and *Praon simulans* (Prov.), given in their order of importance. Eulophidae: *Aphelinus semiflavus* How.. Secondary parasites reared from the *Aphidius* species are Ceraphronidae: *Lygocerus niger* (How.) and *incompletus* Mues.; Cynipidae: *Charips* sp.; Encyrtidae: *Apidencyrtus aphidivorus* (Mayr.); Pteromalidae: *Pachyneuron siphonophorae* (Ashm.), *Asaphes fletcheri* (Cwfd.).

For the predators see the section on "Natural Control and Ants".

The potato aphid has been observed on nearly 60 plants in New York belonging to widely separated families as follows:

Agrimonia gryposepala, Amaranthus hybridus, A. retroflexus, Anthemis cotula, Apocynum cannabinum, Asclepias sp., *A. syriacus, Aster* sp., *Atriplex patula, Baptisia tinctoria, Balamcanda chinensis, Brassica oleracea* var. *botrytis* (cauliflower), *B. oleracea* var. *gemmifera* (Brussels sprouts), *Calendula officinalis* (pot marigold), *Callisthephus chinensis, Capsicum frutescens* (red pepper), *Chenopodium album, Cichorium endivia* (endive), *C. intybus, Cobea scandens, Convolvulus sepium, Coreopsis* sp., *Cosmos* sp., *Cucurbita maxima* (squash), *C. pepo* var. *ovifera, Dahlia* sp., *D. pinnata, Eupatorium perfoliatum, Fagopyrum saggitatum* (buckwheat), *Galinsoga parviflora, Gladiolus* sp., *Hibiscus esculentus* (okra), *Iris* sp., *Iva frutescens, Lactuca* sp., *L. sativa* (garden lettuce), *Lilium canadense, L. longiflorum, Lonicera japonica, Lychnis alba, Lycopersicon esculentum* (tomato), *Narcissus* sp., *Oenothera biennis, Oxalis* sp., *Petunia* sp., *P. axillaris, Polygonum scandens, Potentilla recta, Rosa* sp., *Senecio vulgaris, Solanum melogena* (eggplant), *S. pseudocapsicum, S. tuberosum* (potato), *Spinacia oleracea* (spinach), *Trifolium pratense, Tulipa* sp., *Yucca filamentosa, Zea mays* (corn) and *Zinnia elegans.*

Macrosiphum granarium (Kirby) English Grain Aphid

Dr. W. F. Rochow of the Dept. Plant Pathology, Cornell University, wrote me in May 1960 that he finds this aphid very common on oats and barley in the Ithaca area but indicated that he has also found it in other parts of the state; also that in 1959 the aphid was particularly abundant in oat fields during the middle of June. According to Dr. Rochow it is by far the most important vector in New York of the barley yellow dwarf virus disease of oats. The virus also affects wheat and barley.

NYL – Doubtless widely distributed throughout the state. CANASERAGA, CHATHAM, HUDSON, KINDERHOOK, NIVERVILLE, STONE RIDGE and LI: GLEN COVE.

YONKERS 12 Feb 1927, on wheat in greenhouse, (Horsfall coll). ITHACA 10 Mar 1928, on corn in greenhouse, (L. F. Randolph coll; in CU), 10 Jl 1926, on oats in greenhouse, (Patch det). RUSH 22 Ju 1938, on wheat heads, (J. E. Longfellow coll—Russell det; in CU). LI: RIVERHEAD 13 May 1925, on rye, (Huckett coll—Patch det; in Me. Agr. Exp. Sta.).

Macrosiphum lilii (Monell) Purple-spotted Lily Aphid

Described from New York by Monell in Rept. U. S. Comm. Agr., p. 221 for 1879. His brief description and the notes which preceded it were reprinted in the Valley Naturalist 2(4):49–50, Dec 1880.

This beautiful aphid, which in life is yellow with a large purple spot on the dorsum, has been found outside of New York only in a few localities, as far as I know: Connecticut, the vicinity of District of Columbia, South Carolina, and Georgia.

Specific New York records are: ITHACA 13 Sept 1938, on *Lilium longiflorum*, (Griswold coll). YONKERS 9, 30 May, 3, 23 Aug 1938, on *L. formosanus, philippinense* and *speciosum;* BRONXVILLE 15 Ju 1938, on *L. regale,* (all E. P. Imle coll—Griswold det). LI: ORIENT Aug 1913, on *Lilium* sp. probably *canadense,* (Latham coll—Patch det); "LONG ISLAND" summer 1927, on lily, (Griswold coll—Patch det); ORIENT 21 Sept 1957, 23 Jl 1958, 2 Sept 1946 and 18 Jl 1959, GREENPORT 26 Jl 1959, CALVERTON 18 Sept 1946, RIVERHEAD 16 Sept 1946, PECONIC 17 Aug, EAST MARION 26 Jl 1958, on *Lilium superbum,* (all Latham coll): GREENPORT 27 Jl 1958, 31 Jl 1959, on *Lilium canadense,* ORIENT 14 Aug 1959, on *L. tigrinum,* (both Latham coll).

Because of the rarity of Monell's papers, the Valley Naturalist account is here reproduced in full:

"The Japan Lily Aphis." (*Siphonophora lilii,* n. sp., Monell.)

"Feeding upon the under sides of the leaves of the Japan lily and tulip, a red and yellow aphid 2mm (1/12 inch) in length.

"In July, 1879, specimens of a handsome aphid were received from Mr. Peter B. Mead, of New York City, who had studied them for some time upon the Japan lilies in his greenhouse. The following notes upon habits accompanied the specimens:

" 'I first noticed this aphis in the spring of 1878 on some Japan lilies, the bulbs of which, as well as the earth in which they were grown, were received from Japan during the preceding winter. My attention was first attracted by an unusual appearance of the under surface of the leaves, which looked as if thickly dotted with small brown specks. A closer examination proved them to be plant-lice of a species entirely new to me. They were about half grown, but very soon attained maturity. Thickly grouped together on the leaves, they certainly presented a picturesque appearance, being the only aphis I have ever seen that could be called handsome. They multiplied with astonishing rapidity, and soon covered the plants. I am confident that they increase more rapidly than the green aphis. When disturbed they all seem to unite in a swaying motion, more marked than that of the green aphis.

" 'Notwithstanding their great numbers, they do not injure or disfigure the plant to the same degree as other Aphides. At least this is the result of my observations thus far. If not disturbed, they literally cover the whole plant, buds and all. They seem thus far to confine themselves exclusively to the Japan lily, with but one exception. I have repeatedly examined all my other garden and pot plants, both last summer and this, without detecting this aphis on any of them, except for a few on the tulip.

" 'After watching them for a few weeks last summer I began their destruction; but in September they all suddenly disappeared without further effort from me. Whether they will do so this year remains to be seen. During the winter a very few made their appearance on a tulip in the greenhouse, but were immediately killed, and no more were seen.

"'In consequence of the cold and backward spring, they made their appearance quite late this year (1879). At the time of writing (July 26) they cover the plants on which they have not been disturbed: but, as was the case last year, they are confined exclusively to the Japan lilies. I have traveled about not a little, but have failed to discover this aphis, except in one place, which I can trace immediately to my own plants or more strictly, to the same lot. Hence I conclude that it came from Japan with the lilies or the soil.

"'Specimens were sent to Mr. Monell for identification. He considered it to be a new species of the genus Siphonophora, and forwarded the following specific description for insertion in this report· *Siphonophora lilii* (n. sp.).

"'General color yellow; basal half of abdomen brownish red. Antennae mounted on conspicuous tubercles. Style yellow, a little over half as long as the nectaries. Nectaries dusky, yellowish just at base, about four times as long as the tarsi. Venation normal. Length 2mm. Alar expanse 7mm. On flowers of Lilium.'"

Macrosiphum liriodendri (Monell) Tuliptree Aphid

NYL – Sometimes common on tuliptree leaves, at least in the vicinity of New York City.

ITHACA 15 Sept 1933 (Crosby coll), 13 Sept 1934 (Leonard and Crosby coll), 27 Ju 1939 (T. R. Hansberry coll); GENEVA 20 Sept 1946 (P. J. Chapman coll—Mason det); ROCHESTER 18 Jl 1959 (Pechuman coll)—all on tuliptree. OWLENBURG BOG Catt. Co. 20 Ju, LOCKPORT 4 Jl and LYNDONVILLE 17 Ju 1959, on *Magnolia acuminata,* (Pechuman coll). ROCHESTER 18 Jl 1959, on *M. slavani,* LOCKPORT 4 Jl 1959, on *M. soulangiana,* (Pechuman coll—MDL det; verified by CFS, who suggested there may be more than one species). MAMARONECK 8 Jl 1935, on *Tilia* sp., (S. W. Bromley coll). MEDINA 11 Jl 1960, on *Liriodendron tulipifera,* LYNDONVILLE 28 Sept 1960, on *Magnolia acuminata,* (Pechuman coll—CFS det). LI: BROOKHAVEN 18 Ju 1943, on tuliptree, (A. T. Gaul and Smith coll—Mason det; Sp Port Surv).

Macrosiphum luteum Buckton

May 14 1913, on orchids in a greenhouse, (P. J. Parrott coll—Patch det). Note in Me. Agr. Exp. Sta. Lot Book: "Recently brought in from the South". Note by G. W. Simpson in transmitting this record to MDL: "One would expect this was taken at GENEVA but not so stated in record."

Macrosiphum pelargonii (Kaltenbach) Geranium Aphid

Described as *M. cornelli* n. sp. from ITHACA by Patch in: Griswold, Ann. Ent. Soc. Am. 19:334, 1926.

ITHACA throughout the year in greenhouse on *Pelargonium domesticum, graveolens, odoratissimum, peltatum, quercifolium* and *radula.* Parasitized by *Praon simulans* Prov., *Aphelinus jucundus Gahan, A. semiflavus* How. and *Aphidencyrtus inquisitor* (How.); the latter may be a hyper parasite. "*P. hortorum,* the commonest of all geraniums, has never

had these aphids on them. The aphids are found principally on the under surface of the leaves where they feed along the midrib and other large veins. They also cluster on the petioles and on the stems of new growth." (Griswold loc. cit.).

WEST NYACK 20 Oct 1960 (a number of apterae), on a potted Martha Washington Geranium, (Olsen coll). LOCKPORT 18 Aug 1960, on *Geranium robertianum,* (Pechuman coll—Olive det).

Macrosiphum pisi (Harris) Pea Aphid

The status of the pea aphid in New York, which is present throughout the state, is probably best summarized by quoting from a letter of 4 April 1961 from Dr. George G. Gyrisco of the Department of Entomology, Cornell University:

> "Pea aphid is common on alfalfa and red clover where about once in 5 years it is of economic importance. We have found pea aphids on red clover, birdsfoot trefoil (*Lotus corniculatus*), black medic, vetch, crimson clover, alsike clover, white clover and zig-zag clover. I know of only two fields of sweet clover in New York—one in Ontario County and one in Cayuga County where it is used for green manure. We have found pea aphid on yellow sweet clover in these two fields, and I have seen it on white, which grows as a weed in much of central New York. The aphid is most abundant on field peas, alfalfa, red clover, vetch and birdsfoot trefoil—more or less in that order. The other host plants are of minor importance."
>
> It is interesting to note that Evans and Gyrisco (J.E.E. 49(6):878–879, 1956) have shown the pea aphid in New York to be a true "migratory" species. "The winter is passed in the egg stage on alfalfa (or other perennial legumes) and the resulting aphids produce several generations starting in the spring until the alfalfa slows in growth and matures, when they leave for more succulent annual legumes. Later as these mature and dry out, fall migrants develop and fly back to alfalfa (or other perennial legumes) and produce the sexual forms which deposit the overwintering eggs. Small populations of the pea aphid can, however, be found on alfalfa during the summer."

Several specific records of further interest are as follows: ITHACA 26 Jl 1926 (Oliver coll—Patch and Griswold det), 17 Jl 1939 (Griswold coll—Essig and Griswold det), on sweet peas; 30 Oct 1939, on red clover in the greenhouse, (W. A. Rawlins coll); 8, 9 Jl 1937, on sweet peas, (M. E. Phillips coll). LI: WADING RIVER 30 May 1913, on *Medicago lupulina,* (Olsen coll); ORIENT 20 Jl 1946, on sweet peas, (Latham coll); EASTPORT 18 Ju 1943 ("many nymphs"), on bean foliage, (A. T. Gaul coll—Mason det: Sp Port Surv); this is the only record for the state on beans.

Macrosiphum pseudodirhodum Patch

NYL – "ITHACA Apr, May and Nov 1926, in greenhouse on rose, (Griswold coll—Patch det; [slides in CU]).

Common on indoor roses here at Ithaca;" (Cornell Ext. Bull. 162:6, 1927). ITHACA 16 Ju 1939, on *Spiraea latifolia,* (T. R. Hansberry coll: several slides of both apterae and alatae; in CU). Miss Louise Russell stated

in July 1961 that this "appears to be close to *M. pseudodirhodum* Patch but we have no examples of this species and it is not recognizable from its description."

Macrosiphum pseudorosae Patch

TAUGHANNOCK GLEN 12 Sept 1933, on *Impatiens* sp.; EGGLESTON'S GLEN 12 Sept 1934, on *Eupatorium perfoliatum,* and CROSBY 13 Sept 1934, on *Oenothera biennis,* (all Leonard and Crosby coll). LI: BABYLON 5 May 1932, on *Gerbera* sp., (Blanton coll—Tissot det).

Macrosiphum rosae (Linneaus) Rose Aphid

The rose aphid is distributed throughout the state where it may be found every year, in greater or less numbers on cultivated and wild roses outdoors and on cultivated roses in greenhouses.

> This large aphid, which has both pink and green forms, frequently becomes so numerous on the leaves, tender shoots and buds of garden roses that growth of new shoots and flowers is retarded. The entire life history is presumably confined to the rose. Although the rose aphid has been recorded elsewhere from several other plants it has been found in New York only on teasel and once on tulips.
>
> Actual collections of the rose aphid in New York have been far from numerous, presumably since it is so common and widespread that they have been hardly considered worthwhile. However, besides collections simply labelled "rose" or *Rosa* (Cult.) from various parts of the state, it has been recorded from Long Island from "hybrid teas," sweet brier rose and moss rose besides.

LI: ORIENT Ju 1959, on *Rosa hugonis,* EAST MARION Oct 1959, on *R. rugosa,* (Latham coll). SI: The only specific record from here is by Rundlett Oct 1960, on hybrid tea rose. There are five recent records from *Dipsacus:* RINGWOOD Sept 1932, Oct 1934 on *Dipsacus* sp., (Leonard and Crosby coll); ITHACA 11 Jl 1939, on *D. sylvestris,* (Griswold coll); LOCKPORT 18 Ju, 8 Jl 1958, on *D. sylvestris* (Pechuman coll). The only other record I can find in this country is by Essig in 1916 in California on *D. fullonum.* The earliest collection in New York appears to be 2 slides in the USNM by Pergande from Rochester, 17 Ju 1902 (presumably on rose). Hayhurst collected it on rose at Fredonia, 14, 29 Ju 1905.

Macrosiphum sibericum (Mordvilko)

LOCKPORT 1 Oct 1960, on *Urtica gracilis,* "abundant, forming solid mats on undersides of leaves, no alates." A further note states that the aphids were so thick that the plants actually bent down with their weight; (Pechuman coll—Olive det). Palmer states that this aphid is rather common throughout the Rocky Mountain Region on the leaves and stems of *U. gracilis,* where it has been collected from May into October.

Macrosiphum tiliae (Monell)

This aphid is recorded as widely distributed in Illinois where it exhibits

a fondness for the tender new shoots of linden, particularly around the base of the tree. The only record in New York is from ITHACA Forest Home 14 Sept 1934, on basswood, (Leonard and Crosby coll).

Masonaphis (Ericobium) azaleae Mason

LI: ORIENT 4 Jl 1924, on blueberry *Vaccinium atrococcum,* (Latham coll—LMR det; 1 slide in USNM).

Masonaphis (Ericobium) pepperi MacGillivray

BARRE Burma Woods 22 Ju 1960, on *Vaccinium* sp., (Pechuman coll—CFS det).

Masonaphis (Masonaphis) rhokalaza Tissot and Pepper

BERGEN SWAMP Genesee Co. 2 Aug 1960, on *Rhododendron nudiflorum* var. *roseum* (Pechuman coll—CFS det).

Masonaphis (Oestlundia) rubicola (Oestlund)
Spotted-winged Raspberry Aphid

(Previously in *Amphorophora.*)

As a result of a study of virus diseases of raspberries in western New York from 1931–35 L. M. Cooley stated that this aphid was found only occasionally, occurring in colonies on the fruit-spur foliage of wild red raspberries early each spring. He did not consider it an important factor in general mosaic spread in Western New York. (N. Y., Geneva, Agr. Exp. Sta. Bull. 665:5, 1936).

ITHACA 11 Jl 1939, N. FAIRHAVEN 2 Jl 1939, on *Rubus idaeus* var. *strigosus,* (Griswold coll—Essig and Griswold det; LMR det; slides in CU). TONAWANDA INDIAN RES. Genesee Co. 4 Aug 1959, on *R. occidentalis,* (Pechuman coll—LMR det).

Melanocallis caryaefoliae (Davis) Black Pecan Aphid

W. R. Richards, in Can. Ent. 92(3):224, 1960, puts this in *Myzocallis.*

In his Reports 1 and 2, p 166, 1855, Fitch described *Aphis fumipenellus* as a new species and included this among those aphids that occur on hickory and walnut. This has been suggested as a synonym of the black pecan aphid, but Dr. Bissell says it is not and that Fitch's species is not recognizable.

ITHACA Ju 10, 12 (?1913), common on the hickories *Carya microcarpa* (now *ovalis*), (Morrison coll), 29 Sept 1933, on hickory, (Crosby coll) and summer of 1936 in lit. from T. H. Bissell: "The black pecan aphid was much in evidence on hickories with its yellow spotting of leaves." ROCHESTER, as *Myzocallis,* 29 Ju 1909, on "upper surfaces of the leaves of *C. alba,* fairly common." (Gillette, J. E. E. 3(4): 369, 1910).

Melaphis rhois (Fitch) Sumac Gall-Aphid

Dr. Fitch's original account of this aphid referred to it as: "The Sumach Gall-Aphis (*Byrsocrypta rhois* new species)".

NYL – Besides several localities specifically listed below, Dr. Felt gives LITTLE FALLS and CANANDAIGUA. He also says: "Has been observed in LOWER HUDSON VALLEY and is generally distributed though comparatively rare."

THREE-MILE BAY 7 Sept 1928, in sumach gall, (Crosby coll—Patch det; 8 slides in CU). MONKEY RUN Tompkins Co. 10 Aug 1938, in leaf gall of *Rhus typhina,* (T. R. Hansberry coll—Essig det).

> Fitch: "On referring to my MSS, I find that I, nine years ago, drew up for publication a description of the red ball-like galls on the sumach leaves and the insects which produce them—which galls Mr. Wm. M. Smith appears to have noticed about the same time at Manlius, N. Y. . . .I withheld this matter from the press, hoping to meet with other specimens, whereby to be better assured as to the genus to which this insect properly belongs. I remember going the next year to the spot where these galls grew and feeling much disappointed on discovering that none of them were produced there that season. Although in my rambles I have passed the same place, I presume, every autumn since that time, no further specimens have occurred to my notice. I therefore send you the notes upon this insect, which have been lying on hand such a length of time." There then follows the description of the insect and its galls. (Jour. N. Y. State Agr. Soc. 16(8):73, 1886).

Micromyzus formosanus Takahashi? Onion Aphid

ITHACA Dec 1923, on onion, (Crosby coll; 1 slide in USNM). Another report: 12 Feb 1926, on onion in CU Plant Path. greenhouse, gave no collector, but probably Griswold, 5 slides in CU; since these did not seem to fit the description of *M. formosanus,* I sent 2 slides of 1 alate each (these were the only alates) and 1 slide with 4 apterae to Prof. Essig for his opinion. He writes these were never received by him. The specific determination of this onion aphid therefore remains uncertain.

Micromyzus violae (Pergande) Violet Aphid

POUGHKEEPSIE 14 Dec 1898, on violets, (2 slides in USNM). LI: PATCHOGUE 15 Oct 1901 (1 slide in USNM, No. 8035).

Microparsus variabilis Patch

TONAWANDA INDIAN RES. Genesee Co. 4 Aug 1959, 18 Jl and 5 Aug 1960, on *Desmodium canadense,* (Pechuman coll—CFS det).

Mindarus abietinus (Koch)

NYL – STAR LAKE St. Lawrence Co., LAKE CLEAR, PAUL SMITH'S Franklin Co., ELIZABETHTOWN, WATERTOWN, Jl and MT. KISCO Ju, on balsam and Scotch pine. WARWICK Jl.

LI: The only other record for the state is LOCUST VALLEY 25 May 1936, on white fir *Abies concolor,* (K. E. Maxwell coll—MDL det).

Monellia caryae (Monell) American Walnut Aphid

POUGHKEEPSIE 1 Aug 1933, moderately common on leaves of black walnut, (Leonard coll—Tissot det). ITHACA (no date given but is 1904 or 1905), on *Carya amara,* (Hayhurst coll; 1 slide in USNM). LYNDONVILLE 19 Ju 1959, on *Juglans nigra* "very abundant and eventually defoliated the trees", 19 Ju, on *J. sieboldiana,* and 17 Ju 1959, on *Carya ovata,* (Pechuman coll). GASPORT 2 Jl 1959, on *Juglans nigra,* TONAWANDA INDIAN RES. Genesee Co. 4 Aug 1959, on *Carya ovata,* (Pechuman coll). MIDDLEPORT 19 Sept 1960, on *C. cordiformis,* LYNDONVILLE 15 Jl 1960, on *Juglans nigra,* (Pechuman coll—CFS det). WHITE PLAINS 8 Jl 1935, accidental on *Corylus* sp., (S. W. Bromley coll). LI: MATTITUCK 2 Jl, PECONIC 9 Jl 1959, on *Juglans nigra,* on latter date "common, much honey-dew", (Latham coll).

Monellia caryaella (Fitch)

In describing this as a new species Fitch merely indicates it occurs on hickory. There is 1 COTYPE slide in USNM from Fitch coll., by A. C. Baker, No. 1542; 1 slide same as above by Baker 1539; 2 slides marked "1540 Fitch (TYPE) on hickory" in Pergande's writing.

SHERIDAN 3 Aug 1905, on *Carya amara,* (Hayhurst coll—Tissot det). ITHACA very common on the underside of the leaves of nearly every hickory around the University campus, (Morrison coll). LI: MATTITUCK 5 Jl 1946, on *Juglans regia,* (Latham coll).

Monellia costalis (Fitch) Black-Margined Aphid

In describing this as a new species Fitch merely indicates it occurs on hickory; 1 slide in USNM labeled "Type, from Fitch coll.," made by Baker.

NYL – WATERVLIET Aug 1934, abundant on pignut, (Leonard coll-Patch det).

ITHACA 17 Sept 1933, on *Carya* sp., (Crosby coll). EGGLESTON'S GLEN Yates Co. 13 Sept 1934, on shagbark hickory, (Leonard and Crosby coll). SODUS 13 Jl 1952 (alate), on ? wild cherry, (S. H. Kerr coll; slide in USNM). PALMYRA 2 Aug 1959, on beech (accidental) and hickory, (Pechuman coll—CFS det). TONAWANDA INDIAN RES. 9 Aug, on *C. glabra,* LYNDONVILLE 17 Ju 1959, LOCKPORT 1 Oct 1960, on *C. ovata,* and MIDDLEPORT 19 Sept 1960, on *C. cordiformis,* (Pechuman coll—CFS det). LI: NORTHWEST 12 Sept 1948, on *C. cordiformis* from galls, (Latham coll); RIVERHEAD 31 Jl 1956, "alate in water trap in potato field", (P. J. Chapman coll; 2 slides in USNM); GREENPORT 2 Aug 1959, on *C. glabra,* PECONIC 9 Jl 1959, on *Juglans nigra,* (Latham coll).

Monellia nigropunctata Granovsky

ITHACA 13 Sept 1933, on hickory, (Crosby coll), 28 Jl 1938, on *Carya*

sp., (Griswold coll—Mason det; 2 slides in CU). Eggleston's Glen Yates Co. 13 Sept 1934, on shagbark hickory, (Leonard and Crosby coll). Tonawanda Indian Res. Genesee Co. 4 Aug 1959, on *C. ovata,* Middleport 19 Sept 1960, on *C. cordiformis,* and Lockport 4 Jl 1959, "drift" on *Magnolia acuminata,* (Pechuman coll—CFS det). LI: Montauk 30 Jl 1933, on hickory, (Leonard coll); Peconic 9 Jl 1959, on *Juglans nigra,* (Latham coll—CFS det).

Mordvilkoja vagabunda (Walsh) Poplar Vagabond Aphid

Rochester 29 Ju 1909, "A single gall, quite immature, was taken from cottonwood", (Gillette in J.E.E. 3(5):356, 1910).

NYL – Reported from Monroe, Washington, Saratoga and Rensselaer Counties and is probably rather generally present in sections of the state where poplars grow. Produces a very irregular, frequently massed, deformation of poplar leaves.

East Aurora 10 Aug 1933, dried up galls common on *Populus* sp., (Crosby and Leonard coll). N. Fairhaven 2 Jl 1939, from twig gall on *P. canadensis,* (T. R. Hansberry coll—Griswold det; 10 slides in CU).

Myzaphis rosarum (Kaltenbach)

NYL – as *Francoa rosarum* (Kalt.) – Ithaca Oct, on rose in greenhouse, (Griswold coll—Patch det).

"Common on indoor roses at Ithaca", Cornell Univ. Ext. Bull. 162:6, 1927. Ithaca 27 Oct 1927, on *Rosa.* (Griswold coll—Patch det; Me. Agr. Exp. Sta. coll).

Ithaca sexual forms (only) on cultivated rose in late Oct and Nov (?1913), on the underside of the leaves, (Morrison coll).

Myzocallis sp.

Lyndonville 2 Sept 1960, on *Quercus* sp., Middleport 19 Sept 1960, on *Q. bicolor,* (Pechuman coll—Ole Heie det).

Myzocallis alhambra Davidson

Ithaca 26 Ju 1936, abundant on leaves of a large oak, (MDL). Geneva 20 Oct 1946, abundant and ovipositing on *Quercus bicolor,* (Chapman coll—Mason det). Lyndonville 25 Aug 1959, on *Q. bicolor,* (Pechuman coll); Lyndonville 19 Ju 1959, 2 Sept 1960, on *Quercus* spp.; Lyndonville 15 Jl, 2 Sept 1960, Barre Burma Woods 1 Oct 1960, Tonawanda Indian Res. Niagara Co. and Lockport 10 Aug 1960, on *Q. bicolor;* Lyndonville 15 Jl 1960, on *Q. coccinea* and *Q. velutina,* 2 Sept 1960, on *Q. bicolor;* Lockport 1 Oct 1960, on *Q. macrocarpa.* (all Pechuman coll—Ole Heie det). LI: Greenport 27 Sept 1957, 22 Ju 1958, on *Q. bicolor,* 15 Ju 1958, as "drifts" on *Ozmorhiza longistylus,* (Latham coll); Farmingdale 7 Ju 1938, on *Q. alba,* (Leonard and Haude coll); Southold 27 Ju 1958, on *Q. bicolor,* (Latham coll).

Myzocallis alnifoliae (Fitch)

"*Lachnus alnifoliae* n. sp. On alder leaves. No. 857 male." (Fitch, Cat. Homop. N.Y., p 67, 1851). ITHACA 11, 20 Oct 1906, on *Alnus glutinosa* and *A. rugosa,* (Hayhurst coll—Tissot det), 31 Jl 1939, on *A. incana,* (Griswold coll and det).

Myzocallis annulata (Hartig)

ITHACA 29 Aug 1939, on *Quercus robur,* (Griswold coll—Essig det; 3 slides in CU).

Presumably the first record of this aphid in the United States.

Myzocallis asclepiadis (Monell)

SHERIDAN 16 Jl 1905, on *Asclepias syriaca,* (Hayhurst coll and det). GENEVA 29, 30 Ju 1909, "both alate and apterous in good numbers", from *Asclepias* sp., (Gillette, J.E.E. 3(4):368, 1910), 29 Oct 1946, on *Asclepias* sp., (Chapman coll—Mason det). CROSBY 10 Sept 1934, on milkweed, (Crosby and Leonard coll). ITHACA (1905), on *A. syriaca,* (Hayhurst coll; slide in USNM), 30 Aug 1935, on milkweed, (Crosby coll). HAGUE, LAKE GEORGE Jl 1947, on milkweed, (M. D. and D. D. Leonard coll). PORTLAND 23 Sept 1959, LOCKPORT 3 Sept 1960, on *A. syriaca,* (Pechuman coll). ILION Madison Co. Aug 1960, heavily infesting lamb's quarters scattered throughout a poorly cared for field of cabbage and cauliflower and mixed with *Myzocallis punctata (Monell),* (A. A. Muka coll—MDL det). LI: PECONIC 25 Jl 1948, on *A. syriaca,* GREENPORT 26 Jl, 2 Aug 1959, common on *A. amplexicaule,* ORIENT 3 Aug 1959, on *A. syriaca,* (all Latham coll).

Myzocallis bella (Walsh)

ROCHESTER 29, 30 Ju 1909, on upperside of leaves of *Quercus rubra,* (Gillette, J.E.E. 3(4):368, 1910); this may or may not be *bella.* WHITE PLAINS 27 Sept 1914, on *Q. rubra,* (Olsen coll); this may or may not be *bella.* ITHACA Ju 1912, rather common on *Q. rubra,* (Morrison coll); this may or may not be *bella.* ITHACA 29 Sept 1933, on *Q. borealis,* (Crosby coll—Boudreaux and Tissot det). LYNDONVILLE 2 Sept 1960, on *Quercus* sp., TONAWANDA INDIAN RES. Genesee Co. 3 Sept, MIDDLEPORT 19 Sept 1960, on *Q. borealis maxima* red oak, (Pechuman coll—Ole Heie det). LI: RIVERHEAD 20 Sept 1957, on *Q. coccinea,* (Latham coll—Boudreaux and Tissot det); KISSENA LAKE Flushing 4 Oct 1914, on *Q. rubra* (Olsen coll); may or may not be *bella.*

Myzocallis coryli (Goeze)

ITHACA 26 Sept 1933, on *Corylus* sp., (Wm. E. Blauvelt coll), 24 Jl 1939, on *C. americana,* (Griswold coll and det). GENEVA 20 Sept 1946,

on *C. maxima,* (Chapman coll—Mason det; 1 slide in USNM). LYNDONVILLE 15 Jl, 2 Sept 1960, on *C. avellana,* 15 Jl 1960, on *C. avellana* var. *contorta,* (Pechuman coll—CFS det).

Myzocallis discolor (Monell) Eastern Dusky-winged Aphid

ITHACA Presumably this species was very common and indeed a pest on white oaks in the vicinity of Ithaca from June 1912–1914; apparently not reported from the state before, (Morrison coll).

LI: MASPETH 26 Oct 1914, on *Quercus prinus,* (Olsen); BABYLON 29 Jl 1934, on *Q. marylandica,* (Blanton coll—Tissot det); GREENPORT 23 Ju 1947, on *Q. stellata,* SOUND AVE. 25 Jl 1948, on *Q. bicolor,* (Latham coll).

Myzocallis frisoni Boudreaux and Tissot

LI: WESTBURY 6 Oct 1943, on *Quercus palustris,* (Plummer coll—Boudreaux and Tissot det; Sp Port Surv; 1 slide of 3 oviparae in USNM).

Myzocallis granovskyi Boudreaux and Tissot

ITHACA 22 Aug 1958, on *Quercus rubra,* (John Graham coll—Boudreaux and Tissot det), 1 Aug 1959, on *Quercus* sp., (CFS et al coll—Boudreaux and Tissot det).

Myzocallis melanocera Boudreaux and Tissot

ITHACA 27 Jl 1938, 2 Ju 1939, on *Quercus rubra,* (Griswold coll—Boudreaux and Tissot det). GENEVA 20 Sept 1946, on *Q. borealis,* (Chapman coll—Boudreaux and Tissot det). LOCKPORT 4 Ju 1959, on *Q. borealis,* (Pechuman coll—Boudreaux and Tissot det). LI: RIVERHEAD 9 Sept 1934, on oak, (Leonard and Crosby coll—Boudreaux and Tissot det); FLUSHING N. Y. World's Fair Ground 23 Jl 1939, on *Q. coccinea,* (MDL coll—Tissot det).

Myzocallis multisetis Boudreaux and Tissot

ITHACA 2 Ju 1939, on *Quercus rubra,* (Griswold coll—Boudreaux and Tissot det), 1 Aug 1959, on hickory oak, (CFS et al coll—Boudreaux and Tissot det); I cannot substantiate the name of this oak—MDL.

Myzocallis punctata (Monell) Clear-winged Oak Aphid

ITHACA 5 Jl 1938, on *Asclepias syriaca,* (Griswold coll—Essig and Griswold det). OAK ORCHARD SWAMP Genesee Co. 4 Aug 1959, on *A. syriaca,* LYNDONVILLE 19 Ju 1959, on *Quercus* sp. (exotic), (Pechuman coll). ILION Madison Co. Aug 1960, heavily infesting lamb's quarters scattered throughout a poorly cared for field of cabbage and cauliflower mixed with *Myzocallis asclepiadis* (Monell), (A. A. Muka coll—MDL

det). LI: GREENPORT 23 Ju, NORTHWEST 26 Ju 1947, on *Quercus stellata,* (Latham coll).

Myzocallis punctatella (Fitch)

In describing this as a new species Fitch (First & Second Reports, p. 165, 1856) merely states it is a hickory aphid. ITHACA 22, 30 Sept 1933, on leaves of *Quercus alba,* (Leonard and Crosby coll), 16 Aug 1927 (det Mason with query) and 25 Jl 1938, on *Q. alba,* (Griswold coll—Essig and Griswold det). 1 slide in USNM labeled "*Callipterus punctatellus,* Type, Fitch No. 1577."

Myzocallis spinosa Boudreaux and Tissot

LI: RIVERHEAD 9 Sept 1934, on oak, (Leonard and Crosby coll—Boudreaux and Tissot det); FLANDERS 25 Ju 1946, one cluster on *Quercus illicifolia,* (Latham coll—Boudreaux and Tissot det).

Myzocallis tiliae (L.)

SHERIDAN 8 Aug 1905, on *Tilia americana,* (Hayhurst coll—Tissot det). GENEVA 29, 30 Ju 1910 (as *Eucallipterus*), "from underside of leaves of basswood *T. americana.* Common but nowhere seen abundant." (Gillette in J.E.E. 3(4):367, 1910). ITHACA and vicinity (1913 or 1914), common on *T. americana,* (Morrison coll), 22 Aug (about 1914), on basswood, (O. A. Johannsen coll Patch det; Me. Agr. Exp. Sta. Lot Book), 13 Aug 1937, on *T. cordata,* 1 Aug 1938 on *Tilia* sp., (Griswold coll and det) and 31 May 1958, on *Tilia* sp., (Graham coll—CFS det). OLCOTT Keg Creek 5 Oct 1960, on *T. americana,* (Pechuman coll—CFS det). ALBANY on roof of State Education Bldg. 9, 25 Jl 1927 (Felt and Chamberlain coll). YONKERS 21 Ju 1927, on *T. americana.* (J. L. Horsfall coll and det). GENEVA 20 Sept 1940, on *T. glabra,* (P. J. Chapman coll—Mason det). LYNDONVILLE 22 May, 1 Jl and 25 Aug 1959, on *T. cordata,* (Pechuman coll). PORT CHESTER 8 Jl 1935, on *T. europaea,* (S. W. Bromley coll). LI: RIVERHEAD 9 Sept 1934, a "drift" on oak leaves, (Leonard and Crosby coll—Tissot det); SOUTHOLD 21 Jl 1946, MATTITUCK 3 Jl 1946, on *T. americana,* (Latham coll), 4 Ju 1953, on linden, (Bartlett Tree Res. Labs.); BROOKSVILLE 10 Aug 1934, on linden, (Crosby coll—Tissot det).

Myzocallis ulmifolii (Monell) Elm Leaf Aphid

NYL – Common and frequently destructive to the American elm; ALBANY, BROOME, CHAUTAUQUA, FULTON, MONROE, MONTGOMERY, ONEIDA, ONTARIO, ST. LAWRENCE and WARREN COUNTIES, probably generally distributed throughout the state.

FREDONIA Aug 1905, on *Ulmus fulva,* (Hayhurst coll). ROCHESTER 29 Ju, GENEVA 29, 30 Ju, NEW YORK Central Park 2 Jl and ALBANY

1 Jl 1909, "on elms", (Gillette in J.E.E. 3(4):369, 1910). ITHACA 12 Aug 1933, 28 Aug 1935 (Crosby coll), (1904 or 1905), on *U. americana*, (Hayhurst coll; 2 slides in USNM) and 29 Jl 1938, on *U. americana*, (Griswold coll and det). YONKERS 8 May 1937, on American elm, 4 Jl 1959, ITHACA CU Campus, on American elm, (John Graham coll). LYNDONVILLE 1, 8 Jl 1959, on American elm, LOCKPORT 4 Jl 1959 5 Sept 1960, on *Ulmus thomasi*, (Pechuman coll). GENEVA 20 Sept 1946, on American elm, (Chapman coll—Mason det). PORT CHESTER Ju 1935, on leaves of American elm, (S. W. Bromley coll).

Myzocallis walshii (Monell)

Dr. Boudreaux of Louisiana State University writes me that he believes this is a complex of *walshii* and several new species.

GENEVA 29, 30 Ju 1909, common on *Quercus rubra*, (Gillette in J.E.E. 3(4):368, 1910); this may or may not be *walshii*. ITHACA 26 Jl, 28 Aug 1937 and 27 Jl 1938, on *Q. rubra*, 3 Aug 1938, on *Q. imbricaria*, (all Griswold coll—Boudreaux and Tissot det), 16, 22 Aug 1958, on *Q. rubra*, (John Graham coll—Boudreaux and Tissot det). TONAWANDA INDIAN RES. Genesee Co. 20 Aug 1958, on *Q. borealis*, (Pechuman coll—Boudreaux and Tissot det). LI: GLEN HEAD 24 Jl 1936, on *Q. velutina*, (Maxwell coll—Boudreaux and Tissot det); RIVERHEAD 2 Sept 1957, on *Q. ilicifolia*, (Latham coll—Boudreaux and Tissot det). LYNDONVILLE 19 Ju 1959, on *Q. borealis maxima*, (Pechuman coll—CFS det). Jl 15, Sept 6, 19 and 24 1960, on *Q. borealis maxima red oak*, (Pechuman coll—Ole Heie det).

Myzus sp.

TONAWANDA INDIAN RES. Erie Co. 3 Sept 1960, immatures only, on *Myosotis laxa*, (Pechuman coll—CFS det).

Myzus sp.

ITHACA 30 Sept 1933, on *Galium* sp., (Crosby coll—Tissot det). This may be *cerasi* Fab. since *Galium* has been found elsewhere to serve as a summer host for this aphid. (See also *Myzus cerasi*).

Myzus cerasi (Fabricius) Black Cherry Aphid

Widely distributed in New York and formerly often reported to be very injurious to cherries, badly curling the leaves. In Canada and Europe a partial migration takes place to *Galium* and *Lepidium* and it has been found in Illinois on the former but this aphid has not been identified from these plants in New York. It is possible, however, that a collection made by Crosby at ITHACA 30 Sept 1933, on *Galium* sp., and det by Tissot as *Myzus* sp. may be *cerasi*.

NYL – Generally distributed throughout the state, definite records extending from SARANAC INN to WADING RIVER LI.

NEW YORK as *Aphis*, "Common on the underside of the garden cherry (*Cerasus vulgaris* Mill.). No. 840, male." (Fitch, Cat. Homop. N.Y., p. 65, 1851.)

ITHACA rather common on some cultivated cherries and on escapes from cultivated plants around town, (Morrison coll). YONKERS 3 Ju 1927, on cherry, (J. L. Horsfall coll and det). POUGHKEEPSIE 14 Jl 1938, on cherry, (J. A. Evans coll). BRONX 19 Oct 1943, on *Cotoneaster rosea*, (Adams and Sanford coll—Mason det; Sp Port Surv). LOCKPORT 6 Ju 1959, 19 May 1960, on *Prunus avium*; BARRE Burma Woods 1 Aug and JOHNSONBURG 5 Ju 1960, on *P. pennsylvanica*, (all Pechuman coll). LI: RIVERHEAD 29 Jl 1933, on cherry, (Leonard coll—Tissot det); GREENPORT 15 Ju 1958, ORIENT 24 May 1959, E. MARION 25 Ju and PECONIC 9 Jl 1959, on *P. avium*, ORIENT 9 Ju 1959, 11 May 1960, on *P. cerasus*, (all Latham coll). ITHACA 27 Ju 1939, on *P. avium*, (Hansberry coll—Griswold det).

> The Extension Fruit Entomologist at Cornell, Dr. Paul Wooley, furnished the following statement in May 1961: "Black cherry aphid is found to some extent in sweet cherry plantings in Western New York (Wayne, Monroe, Orleans, Niagara Counties) and Hudson Valley (Rockland, Westchester, Orange, Ulster, Dutchess, Columbia and Schenectady Counties). However, it is normally of minor importance." This is based on his own experience of the past seven years with tree fruit insects in the state.

Myzus circumflexus (Buckton) Crescent-marked Lily Aphid

LI: "*Siphonophora circumflexus*, attacks calla lilies, Cyclamens, "Dusty Miller" *Senecio cineraria* and *Spiraxis*. It caused most noticeable injury to the flower of the calla. . . . As soon as the flowers open the plant lice crowd into them and in a short time make them filthy. A soot-like mould soon begins to grow on the flowers where the pests work. (F. A. Sirrine in 14th Ann. Rept. NY (Geneva) Agr. Exp. Sta. for 1895, p. 603, 1896). This is the first report of this aphid in the United States.

ITHACA Mar 1917, on tulip in greenhouse, (Leonard coll—Patch det); Mar 1927, on *Cyclamen* sp., (Upton coll—Griswold det); May, on *Heliotrope* in greenhouse, on *Calendula* sp., Ju, on *Myosotis* in greenhouse, May, Ju, on rose, *Vinca variegata*, Wandering Jew and *Calendula* sp., all in 1926 (Griswold coll—Patch det); Mar 1939, on *Lilium auratum*, (Griswold coll—LMR det). YONKERS 15 May, on *L. pumilum*, 5 Ju 1938, on *L. phillippinense*, (E. P. Imle coll—Essig and Griswold det). NEW YORK Botanic Gardens Jl, Aug, Sept 1931, on *Dahlia*, (Philip Brierley coll; slides in USNM). LI: BABYLON 13 Mar 1935, on Easter Lily, (F. J. Spruijt coll; slide in USNM).

Myzus ligustri Mosley Privet Aphid

LI: ORIENT 14 Jl 1946 (1 aptera), on *Ligustrum vulgare*, (Latham coll).

Myzus lythri (Schrank) Mahaleb Cherry Aphid

ITHACA 21 Jl 1939, on *Lythrum salicaria*, (T.R. Hansberry coll—Essig det 1 slide, LMR det another slide; in CU). LOCKPORT 4 Ju, 4 Jl 1959, on *Prunus mahaleb*, (Pechuman coll—MDL and CFS det). MT. KISCO Bedford Lake Park 11, 27 Aug 1960, on *Lythrum salicaria*, (John Graham coll—MDL and CFS det). LI: GREENPORT 22 Ju 1958, on *Decodon verticillatus*, (Latham coll—LMR det).

Myzus monardae (Davis) Horsemint Aphid

LOCKPORT 10 Ju 1959, on *Monarda fistulosa* "leaves very tightly rolled but only a few aphids found", 12 Aug 1959 (1 alate and 2 apterae), "the only aphids seen on this plant since June 10." (Pechuman coll—MDL and CFS det); 28 May 1960, on *M. fistulosa*, (Pechuman coll—det CFS with query).

Myzus persicae (Sulzer) Green Peach Aphid

This is our commonest aphid. Its distribution is world-wide and it has been recorded from at least 335 species of plants distributed in about 235 genera in 69 plant families. It is found throughout New York where it has here been recorded from about 100 plants. Of these, however, it has been recorded from 67 plants only once and from 15 others only twice. More plants will undoubtedly be added as more collecting is done.

Outdoors in New York, the green peach aphid spends the winter chiefly on the peach, plum and cherry, as eggs placed in the axils of the buds and crevices of the bark. The eggs hatch about the time the buds burst and winged lice in the third generation start to migrate to their herbaceous summer food plants on which they maintain themselves until fall. In the greenhouse, breeding is continuous on a number of plants throughout the year and here it is known to florists as the common and often destructive "green-fly", frequently requiring control measures.

This aphid had formerly been recorded for many years as being injurious in some seasons in commercial plantings of peaches, plums and prunes in Western New York and in the Hudson River Valley. Specifically as to peaches, however, Dr. A. A. Muka, Extension Entomologist at Cornell University, wrote me in May 1961 that Dr. Paul Wooley, his Fruit Specialist, based on the past seven years experience, makes the following statement: "Green peach aphid can probably be found in most commercial orchards but is regarded as a minor pest on peaches. Rarely do agents report it in their weekly disease and insect reports." Also known as the "spinach aphid", it is seasonally destructive on this crop in the state as it is also, to some extent at least, on cabbage, cauliflower, brussels sprouts, peppers, potatoes, rutabaga, broccoli, kale, eggplant and radish.

In addition to its direct injury by feeding on economic plants, this aphid is capable of transmitting a number of destructive plant viruses. Throughout its world-wide range Eastop, "A study of the Aphididae (Homoptera) of East Africa", p. 55, 1958, states that it has been shown to be a vector of more than 100 plant viruses. Dr. Karl H. Fernow, Department of Plant Pathology, Cornell University, wrote me in October 1961 that field transmission of the

leaf roll virus of the potatoes can be attributed almost entirely to *M. persicae* but, although this virus occurs in New York not infrequently, it does not often give much trouble in spite of the abundance of the vector. He says it also transmits virus Y of potatoes in a non-persistent manner but that this virus is not very prevalent in New York.

Because of the large number of plants on which the green peach aphid has been found in New York it is felt that the detailed records of its occurrence on these plants would occupy more space than is warranted in this paper. A number of the plants have only rarely been recorded elsewhere as food plants of this aphid and several listed below are recorded presumably for the first time. One of the more interesting of the latter records is on the African violet *Saintpaulia ionantha*, collected by Paul C. Lippold at Middleport, 14 May 1958, (1 slide in USNM). This is the first definite collection from this plant in the U.S.A. Leon W. Coles sent me a number of specimens taken in December 1960 on the flowers and flower-stems of two of his African violet plants growing indoors in Columbus, New Jersey; all sizes of the apterae were present but only one alate. Dr. Floyd F. Smith tells me he has occasionally seen this aphid near Beltsville, Maryland, on potted African violet plants after they have been placed outdoors. (It may be of interest to note that the only published record I can find of an aphid on African violet is by Hall (1926) in Egypt—*Idiopterus nephrolepidis* Davis).

During the seasons of 1958–60 W. H. Day and W. A. Rawlins of Cornell University made a study (as yet unpublished) of the parasites and predators of the green peach aphid on potatoes in connection with the possible effect of insecticides on its abundance. This was done at Riverhead, Long Island. They have kindly permitted me to include the names of the parasites and predators in this paper. The parasites are as follows:

Braconidae: *Aphidius nigripes* Ashm. and *A. nigriteleus* Smith, *Praon simulans* (Prov.), *P. aguti* Smith, *P. occidentalis* Baker. *Eulophidae*: *Aphelinus semiflavus* How.

For the predators see the section on "Natural Controls and Ants."

There follows in alphabetical order by botanical names the known food plants of *Myzus persicae* in New York:

Althea rosea (hollyhock), *Amaranthus retroflexus* (pigweed), *Antirrhinum* sp. (snapdragon) in the greenhouse, *Apium graveolens dulce* (celery), *A. graveolens rapaceum* (celeriac), *Armoracia lapathifolia* (horseradish), *Atriplex patula*, *Bougainvillea* sp., *Brassica* sp. (mustard), *B. kaber* var. *pinnatifida* (crunchweed), *B. napobrassica* (rutabaga), *B. oleracea* var. *capitata* (cabbage), *B. napus* (rape), *B. oleracea* var. *gonglyoides* (kohlrabi), *B. oleracea* var. *acephala* (kale), *B. oleracea* var. *botrytis* (cauliflower), *B. oleracea* var. *gemmifera* (brussels sprouts), *B. rapa* (turnip), *Bryophyllum* in the greenhouse, *Cakile edentula*, *Calendula* sp. in the greenhouse and outdoors, *Calliandra inaequilateralis*, *Campsis radicans* (trumpetcreeper), *Capsella bursa-pastoris* (shepherd's purse), *Capsicum frutescens* (redpepper), *Chenopodium album* (lamb's quarters) in the greenhouse, *Chrysanthemum frutescens* (marguerite), *Ch. leucanthemum* (ox-eye daisy), *Cineraria* sp., *Crataegus oxycantha* var. *pauli*, *Crocus* sp., *Cucumis sativa* (cucumber), *Dahlia* sp., *D. pinnata*, *Dianthus caryophyllum* (carnation) in the greenhouse, *D. chinensis* (Chinese carnation), *Erythronium dens-canis* (dog's-tooth violet), *Galinsoga parviflora* (quickweed), *Gerbera* sp., *Gladiolus* sp., *Glechoma hederacea* (gill-over-the ground), *Gnaphalium polycephalum* (cudweed), *Hedera helix* (English

ivy), *Helichrysum* sp. (everlasting), *Hibiscus esculentis* (okra), *Ipomaea batatas* (sweet potato) in the greenhouse, *I. purpurea* (morning glory) in the greenhouse, *Iris* sp., *Lactuca sativa* (garden lettuce), *Lepidium virginicum* (peppergrass), *Martynia louisiana* (devil's claws), *Mathiola incana* (common stock) in the greenhouse, *Matricaria matricarioides, Myosotis* sp. (forget-me-not), *M. alpestris* (Alpine forget-me-not) in the greenhouse, *Narcissus* sp., *Nemsia strumosa, Nemophila menziesi, Nicotiana longiflora, N. tabacum* (tobacco) in the greenhouse, *Oxalis* sp. in the greenhouse, *Petroselinum crispum* (parsley), *Petunia axilaris, P. hybrida* (common petunia), *Philadelphus purpurascens, Polanisia graveolens* (stinking clammyweed), *Prunus avium* (sweet cherry), *P. domestica* (plum, prune), *P. persica* (peach), *P. seiboldi* (Seibold cherry), *P. serotina* (black cherry), *P. serratula* (oriental cherry), *P. virginiana* (chokecherry), *P. yedoensis* (Yoshino cherry), *Pyrus communis* (pear) in the greenhouse, *Ranunclus* sp. (buttercup), *Raphanus raphanistrum* (wild radish), *R. sativus* (garden radish), *Rheum rhaponticum* (rhubarb), *Ricinus communis* (castor bean), *Rumex crispus* (curled dock), *R. obtusifolia* (broadleaved dock), *Saintpaulia ionantha* (African violet), *Senecio mikanoides* (German ivy) in the greenhouse, *S. vulgaris* (common groundsel), *Sisymbrium officinale* (hedge mustard), *Solanum dulcamara* (bitter night-shade), *S. lycopersicon* (tomato), *S. melogena* (eggplant), *S. pseudocapsicum* (Jerusalem cherry), *Solanum tuberosum* (potato), *Sonchus arvensis* (smooth sowthistle), *Spinaca oleracea* (spinach), *Stellaria* sp. (chickweed), *S. media* (chickweed), *Trifolium pratense* (red clover), *Tropaeolum* sp. (nasturtium), *Tulipa* sp., *Vinca* sp. (periwinkle), *V. major* var. *variegata* (mottled periwinkle) and *Yucca filamentosa* (Adamsneedle yucca).

Myzus physocarpi Pepper

GENEVA 24 Oct 1946, on *Physocarpus opulifolius,* (P.J. Chapman coll: 1 slide in USNM).

Myzus porosus Sanderson Yellow Rose Aphid

ROCHESTER 11 Sept 1923, on rose, (L. W. Pizzini coll—Mason det). ITHACA Mar 1926, on rose in greenhouse, (Griswold coll). SI: WOODBURY 17 Sept 1943, on strawberry leaves, (M.J. Ramsey coll—Mason det; Sp Port Surv). LI: JACKSON HEIGHTS 5 Ju 1939, on *Rosa* cult., (MDL coll); RIVERHEAD 20 Aug 1957, on wild rose, (W. A. Day coll: slide in USNM).

Myzus sensoriatus Mason

LI: GREENPORT 22 Sept 1957 (a few apterae and alates), on *Lycopus americana,* (Latham coll—LMR det). The type slide in USNM bears

four alate viviparae taken by Pergande, 14 May 1906, on *Crataegus crusgalli,* at Chain Bridge in the District of Columbia.

Myzus solani (Kaltenbach) Foxglove Aphid

This has previously been determined as *convolvuli* Kalt. and *pseudosolani* Theob..

The earliest available record for New York is from SANBORN 13 Jan 1915, on lettuce in a greenhouse, (Crosby coll—LMR det). This is from 1 slide in the Me. Agr. Exp. Sta. which had been labelled by Miss Patch as *Macrosiphinus kaltenbachii* (Schouteden)?

NYL – as *pseudosolani* Theob. ITHACA Jl, on potato, Nov, on *Verbena hybrida* in greenhouse, (Griswold coll—Patch det). (Note by MDL: the date is 5 Nov 1926).

ITHACA May 1927, on tulip, 28 May 1928, on tomato in greenhouse, 19 Ju 1927, on *Dracocephalum virginianum* (given as *Physostegia virginica*), and 9, 12 May 1938, on lettuce in greenhouse, (all Griswold coll and det); 24 Jan 1940, 26 Ju 1938, on potato in greenhouse, (Rawlins coll); 26 Apr 1937, on *Lilium* sp. in greenhouse, (Wm. E. Blauvelt coll—MDL det; 5 slides in CU); 20 May 1927, on dahlia seedling in greenhouse, (Griswold coll—Patch det; 1 slide in CU); 15 Nov 1958, on *Solanum carolinense,* (Norman Furrer coll—det MDL from only 2 apterae with query). YONKERS Apr 1938, on *Lilium longiflorum,* 17 May 1938 on *L. speciosum,* and 20 May 1938, on *L. philippinense,* (E.P. Imle coll—Griswold det). LI: ORIENT 8 Dec 1960, on *Lamium amplexicaule,* (Latham coll).

Nasonovia ribisnigri (Mosley)

ITHACA Dec 1923, on lettuce, (Crosby coll; slide in USNM). TUPPER LAKE 8 Aug 1959, on *Hieracium aurantiacum,* (CFS coll and det). BERGEN SWAMP Genesee Co. 2 Aug, on *H. aurantiacum;* LYNDONVILLE 28 Sept 1960, on *H. aurantiacum, H. florentinum,* (Pechuman coll—CFS det). SENECA FALLS 4 Oct, on *Cichorium intybus,* (Pechuman coll—CFS det). LOCKPORT 18 Oct 1960, on *C. intybus,* 19 May 1960, on *Ribes hirtellum,* (Pechuman coll—CFS det). LI: EAST MARION 22 Jl 1960, on *Cichorium intybus,* (Latham coll—CFS det).

Neoprociphilus aceris (Monell)

UNION 25 Aug 1913 "I have received a number of complaints concerning this pest from the Southern Counties of the state." (Crosby, in letter to Miss Patch, who made the determination.) The injury mentioned is assumed to be to *Acer saccharum.* SALISBURY MILLS Orange Co. Ju 1922, no plant given, (John Findley coll; slide in USNM). ITHACA 12 Aug 1927, on limbs and branches of *A. saccharum.*

Neoprociphilus attenuatus Osborn and Sirrine

KARNER 3 Oct 1912, on *Smilax herbacea,* (Crosby coll—Patch det). LI: SOUTHOLD 25 Ju, CALVERTON 19 Ju 1949, a woolly aphid on *S. herbacea,* ORIENT 12 Aug, MATTITUCK 28 Aug 1958, on *S. herbacea,* (all Latham coll); GREENPORT 5 May 1952, on *S. herbacea,* (Latham coll; 1 slide in USNM).

Neosymydobius sp.

MT. KISCO 1 Aug 1960, on *Quercus prinus,* (Graham coll—Ole Heie det).

Neosymydobius albasiphus Davis

LI: RIVERHEAD 9 Sept 1934, on oak twigs, (Leonard and Crosby coll).

Neosymydobius annulatus (Koch)

NEW YORK 27 Ju 1958, on *Betula pendula (verrucosa),* (Granovsky coll and det; 1 slide in USNM). ALTAMONT 15 Jl 1939, on *B. pendula* var. *gracilis,* (Griswold coll; 3 slides in CU det Griswold and Essig, one of the slides with males and oviparous females). LI: GREENPORT 15 Ju 1958, common on *B. populifolia,* (Latham coll—MDL det).

Ovatus crataegarius (Walker) Mint Aphid

This aphid has long been known in American literature and collections as *Phorodon menthae* (Buckton). The above name, however, has been established as the correct one to use by J. P. Doncaster in his "Francis Walker's Aphids", p. 50, 1961 and this is concurred in by D. Hille Ris Lambers.

ITHACA 26 Jl 1939, on *Mentha spicata,* (Griswold coll; 2 slides in CU), 27 Ju 1952, an alate collected "near potato field", (S. H. Kerr coll; 1 slide in USNM). LOCKPORT 11 Aug, 22 Nov 1960 (a very few apterae), on *M. spicata,* (Pechuman coll), 4 Jl 1960, on *Crataegus oxycantha* var. *paulii,* (Pechuman coll—CFS det). REMSEN 24 Sept 1960 (a very few apterae and several "pupae" on the leaves and stems), on *Mentha cardiaca,* (Geo. N. Wolcott coll). LI: ORIENT 11 Aug 1959, in heads, 27 Jl 1960, a few young in top leaves of *M. crispa,* also 23 Jl 1960, a few, nearly all immature, on *M. spicata,* (Latham coll): ORIENT 11 Ju 1960, on *Crataegus chrysocarpa,* (Latham coll—CFS det).

The *Crataegus* collections by Pechuman and Latham are the first which have been identified in the United States from this genus. In Europe this aphid is reported to winter on *Crataegus,* as well as on *Malus,* and to spend the summer on *Mentha* spp. and several other genera of Labiatae.

Although difficult to find, since it usually occurs only in small numbers on the underside of the upper leaves and on the upper part of the stems with which it is almost concolorous, this little yellowish-green aphid is probably present wherever *Mentha* spp. grow. It has not yet been found on peppermint in New York.

Pemphigus balsamifera Williams Poplar Sugar-Beet Root Aphid

ALTAMONT 15 Sept 1939, on *Populus eugenei*, (Griswold coll—Essig and Griswold det; 3 slides in CU).

Pemphigus brevicornis Hart (*lactucae* (Fitch))

Rhizobius lactucae, new species Fitch. "On the roots of lettuce, often in great numbers; very small oval, white and pale yellow lice, with dusky legs and antennae, their bodies dusted over with a white powder. Lettuce seems to be little damaged but Mr. Newcomb of Pittstown, N.Y. informed me a few years since that little white lice gathered upon his verbenas, in some instances in such numbers as to completely cover the roots, causing the plants to droop and wither and turn yellowish, and when felt of they seemed loosened and not set firmly in the ground." (Fitch, 14th Rept., p. 360, 1872).

NYL as *lactucae* Fitch – A common lettuce root-louse and probably rather generally distributed (Felt). FREDONIA (Pergande).

FREDONIA 27 Ju 1905, on roots of *Rumex crispus*, (Hayhurst coll—Tissot det; 1 slide in USNM, same data but from SHERIDAN). ITHACA 3 Aug 1922, on roots of lettuce or potato, (Crosby coll—1 slide in USNM).

OSWEGO 12 Sept 1929, on lettuce roots, (A.G. Newhall; data from Me. Agr. Exp. Sta. Lot Book; det by Patch as *lactucae*).

Pemphigus bursarius (Linnaeus)

ITHACA 1 May 1924, on lettuce roots, (A. G. Newhall coll; submitted by C. R. Crosby; 1 slide in USNM). MT. KISCO 11 Jl 1960, on *Populus deltoides*, (Graham coll—det CFS with query). LI: FLUSHING 8 Jl 1919, on *P. trichocarpa*, (C. A. Natham coll; 1 slide in USNM).

Pemphigus junctisensoriatus Maxson

LYNDONVILLE 19 Ju 1959, (det CFS with query), 1 Sept 1960, on *Populus candicans*, (Pechuman coll—CFS det).

Pemphigus nortonii Maxson

ITHACA 13 Jl 1938, on curled leaf of *Populus nigra* var. *italica*, (Griswold coll—Essig det; 4 slides in CU).

Pemphigus popularius (Fitch)

Described as a new species by Fitch in his Fifth Report, p. 849, 1859 from numerous specimens found running about on the limbs and trunk of balsam poplar; Oct, warm sunny day. This species has not since been recognized.

Pemphigus populicaulis Fitch Poplar Leaf-petiole Gall Aphid

Discussed as a new species by Fitch, (Fifth Rept., p. 845–847, 1859).

EAST AURORA 10 Aug 1933 (Leonard and Crosby coll). VARNA 12 Ju 1939, on *Populus nigra* var. *italica,* (P. A. Readio coll—Griswold det). LI: The NYL gives MINEOLA Jl (Morrison coll).

> In his Report Fitch states: "This insect is attracting much notice in the city of Albany at the time these pages are passing through the press. The latter part of June an article appeared in one of the daily papers of the city, directing attention to the remarkable phenomenon presented by the poplars in a particular yard on the opposite side of the river in Greenbush, most of the leaves having at their base a little ball filled with insects. Several of the leaves of those trees were kindly procured and forwarded to me by L. A. Orcutt, Esq. Visiting the city personally a fortnite after, I was informed the same bullet-like excrescences were then growing on the poplars everywhere in and around the city, and were so numerous on particular trees that scarcely a leaf could be found which was destitute of them. The specimens shown me were taken from the river poplar or cotton tree (*Populus laevigata* Aiton).
>
> "Three years since, on the twenty-seventh of June, a leaf which had fallen from a Lombardy poplar in my yard [Salem, N. Y.] . . . showed on the middle of its stalk a bullet-like gall . . . which describes the Albany leaves perfectly."

Pemphigus populiglobuli Fitch — Poplar Bullet Gall Aphid

Described by Fitch as a n. sp.: "Galls containing the aphids on the leaves of the balsam poplar and also several galls on balsam poplar at Salem at the moment of sending these pages to press." (Fitch, Fifth Rept., p. 850, 1859). One slide in USNM and marked "Type," mounted from Fitch collection by A. C. Baker.

NYL – NEW ROCHELLE Jl, on Lombardy poplar, (T.J. Wade coll). LYNDONVILLE 19 Ju 1959, on *Populus candicans,* (Pechuman coll).

Pemphigus populitransversus Riley — Poplar Petiole Gall Aphid

ROCHESTER 29 Ju 1909, on cottonwood leaves, (very few galls seen; Gillette). NYL adds ALBANY Ju, CAMBRIDGE Jl.

EAST AURORA 10 Aug 1933, galls on *Populus* sp., (containing many winged and wingless aphids; most of the aphids in some of the galls had been killed by dipterous larvae and by nymphs of a small predaceous bug which were also feeding on the aphids; Crosby and Leonard coll). AURORA 18 Ju 1939 (Hansberry coll). ITHACA 10 Oct 1939 (C. L. Place coll). KNOWLESVILLE 31 Jl 1939, petiole galls on *Populus* sp., (L. C. Pettit coll—Griswold det). ALBANY Co. 26 Jl 1950, in petiole gall on *P. deltoides,* (A.G. Whitney coll; MDL det; from New York State Museum). GASPORT 2 Jl 1959, on *P. deltoides,* (Pechuman coll).

Pemphigus populivenae Fitch — Poplar-vein Gall Aphid

"A number of the galls containing numerous aphids may be observed during July on the leaves of particular balsam poplars." This statement is in connection with the description of this aphid as a new species (Fitch, Fifth Rept., p. 851–852, 1859). LYNDONVILLE 7 Jl 1960, on *Populus candicans,* (Pechuman coll—det CFS with query).

Pentatrichopus fragaefolii (Cockerell) Strawberry Aphid

GENEVA 25 Sept 1958, NORTH COLLINS 22 Ju 1959, on cultivated strawberry, (Geo. A. Schaefers coll and det). LI: MASPETH 13 Ju 1914, on *Fragaria virginiana,* (Olsen coll).

Pentatrichopus minor Forbes

GENEVA 25 Sept 1958, NORTH COLLINS 22 Ju 1959, on cultivated strawberry, (Geo. A. Schaefers coll and det).

Pentatrichopus minor forma **dorsalis** Schaefers

GENEVA 17 Oct 1958, NORTH COLLINS 22 Ju 1959, on cultivated strawberry, (Geo. A. Schaefers coll and det).

Pentatrichopus thomasi Hille Ris Lambers

GENEVA 25 Sept 1958, NORTH COLLINS 22 Ju 1959, on cultivated strawberry, (Geo. A. Schaefers coll and det).

Pergandeidia trirhoda (Walker)

YONKERS 28 Ju 1927, on *Aquilegia* sp., (Horsfall coll—MDL det). ITHACA 17 Sept 1934 (Leonard coll), 1 Sept 1937 (Griswold coll), both on *Aquilegia chrysantha,* 5 Oct 1928, on *A. vulgaris,* 23 Jl 1926, 27 Sept 1927 and 22 Sept 1930, on *Aquilegia* sp., (Griswold coll and det); 25 Sept 1930, on *Rosa,* (Griswold coll—det Essig as *Hyalopterus*). LOCKPORT 20 Aug 1960, on *A. vulgaris,* (Pechuman coll—CFS det).

Periphyllus americanus (Baker) American Maple Aphid

ITHACA 28 May 1958, rather abundant on the leaves of sugar maple bordering the north shore of the Six-Mile Creek Reservoir, (John Graham coll and det).

Periphyllus lyropictus (Kessler) Norway-Maple Aphid

NYL – OGDENSBURG (J.J. Davis); ALBANY, GREENE and ONTARIO COUNTIES. Probably this is the species which has been very destructive to Norway maples in many widely separated localities in the state.

"*Aphis aceris* L. Occurs on the *Acer pennsylvanicum.* No. 849, male." (Fitch, Cat. Homop. NY, p. 66, 1851). GENEVA 29, 30 Ju, ALBANY 1 Jl 1910 as *Chaitophorus aceris* L., presumably on sugar maple, (Gillette, J.E.E. 2(6): 387, 1910).

ITHACA 13 Sept 1933, on *Acer saccharum,* (Crosby coll), 2 Sept 1934 on *A. platanoides,* (Crosby and Leonard coll; males and viviparous females) and 6 Sept 1927, 7 Jl 1938, on *A. platanoides,* (Griswold coll—Patch det). GASPORT 13 Jl 1958, on *A. platanoides,* (Pechuman coll). ROCHESTER 16 Jl 1959 on A. *platanoides* var. *laciniatum,* BUFFALO 10 Jl 1959, on

A. p. var. *palmatifilum,* (Pechuman coll). RYE 21 Ju 1935, on Norway maple, (S.W. Bromley coll). SI: NEW BRIGHTON 31 Aug 1934, on *Acer* sp., (C.S. Tuthill coll—Mason det; Sp Port Surv); CASTLETON CORNERS 31 Oct 1960 (sexuales present), on *A. platanoides,* (Rundlett coll). LI: PECONIC 17 Oct 1957 (males, ovip. and vivip. females), GREENPORT 27 Sept 1957 and MATTITUCK 24 Oct 1958, males and ovip. females, all on *A. platanoides.* (Latham coll); MATTITUCK 9 Jl, 7 Nov 1959, on *A. platanoides,* (Latham coll).

Periphyllus negundinis (Thomas) Boxelder Aphid

NYL – NEWPORT, NASSAU, on boxelder. ALBANY 1 Jl 1909, on *Acer negundo,* (Gillette, J.E.E. 2(6): 387, 1910). GASPORT 23 Ju 1959, on *A. negundo,* (Pechuman coll). MEDINA 7 Ju 1960, TONAWANDA INDIAN RES. Genesee Co. 3, 24 Sept 1960, on *A. negundo,* (Pechuman coll—CFS det). LI: BABYLON 3 Jl 1939, on pear, (Ed. Kurtz coll); food plant certainly accidental or in error, although the single slide in the USNM bears 4 apterae only.

Phorodon humuli (Schrank) Hop Aphid

The earliest account of this formerly highly destructive aphid to hops is by Dr. Asa Fitch in his Tenth Report, p. 15, for 1864, published in 1867. Because of its historical interest and relative lack of availability it is here quoted in full:

> "Hop Aphis, *Aphis humuli* Schrank. The insect which the past season attracted the most notice and did the most damage in our state, was the aphid or plantlouse on the hops. Although the hop has been growing both wild and cultivated, in this country, from time immemorial, I am not aware that this enemy has ever attacked or been observed upon it, until two summers ago, when it suddenly made its appearance in excessive numbers; and in consequence of its advent, the two past years have been the most disastrous to the extensive hop growers in the central section of our state, which they have ever experienced.
>
> "This insect is not limited to the extensive hop plantations in the central part of our state, but appears to have everywhere overrun the hop vines, both wild and cultivated. It was abundant last summer in my own neighborhood [Salem, N. Y.] and specimens were also sent me from St. Lawrence County, whereby we know that its range is to the eastern and northern confines of the state, but farther than this we do not at present possess any definite information.
>
> "One of our most intelligent hop growers, F. W. Collins, Otsego County, informs me that in 1863 the aphid appeared in his vicinity in such prodigious numbers that some yards around him were not picked."

C. V. Riley in the Report of the Entomologist in the Report of the U.S. Commissioner of Agriculture for 1886 (published in 1887), p. 462 states:

> "*Phorodon humuli* was so destructive in the great hop regions of New York State as to cause an almost total loss. Plans are made to carry on experiments the coming year; for in September (1886) I thought I had discovered the winter host plant (plum) which has hitherto been a mystery."
>
> In the Report of the U.S. Commissioner of Agriculture for 1888 (published

in 1889), pp. 93–102 Dr. Riley reviews the literature on the hop aphid in Europe and in this country at considerable length and summarizes the life history of this aphid as determined by himself and his assistants (chiefly Pergande) during 1887 and the spring of 1888. It was established that the aphids spent the winter in the egg stage on plum from which they migrate to the hop. The principal observations were made at Richfield Springs, N. Y. and also checked at Washington, D. C. and there are slides in the USNM by Pergande from plum from these two localities.

A later note is by I. M. Hawley in Cornell Univ. Agr. Exp. Sta. Mem. 15: 202–211 1918 who states concerning the hop aphid:

"Known in New York since 1863 at least and in some years has caused an almost total loss of the crop . . . on May 21, 1913 full-grown lice and recent offspring were found on a plum tree near Springfield." Further notes on the life history in New York include "winged forms have been found on a plum tree under observation through July and August; migration to hops however occurs in June; the height of the return migration occurs during hop picking, about the first of September."

Hops have long since ceased to be grown to any appreciable extent in New York, commercial production having been transferred to the Pacific Northwest, and little attention has been paid to the hop aphid for many years.

A few additional available records of its occurrence are as follows: WAYNE Co., H.H. Fitch reported on 23 Ju 1923 that the hop aphid "has been noticed on plums." NYL – "Probably widely distributed in the state since it has been reported on hop in CATTARAUGUS, DUTCHESS, MADISON, MONTGOMERY, OTSEGO and SCHOHARIE COUNTIES." GENEVA 1 Sept, ITHACA 7 Oct 1939, on hop, (Griswold coll). LI: ORIENT 7 Sept 1957, on hop, (Latham coll); MATTITUCK May 1959, on *Prunus avium*, (Latham coll).

Phorodon menthae (Buckton)

See *Ovatus crataegarius*.

Phyllaphis fagi (Linnaeus)

NYL – "A woolly species which appears to be very common on the leaves of copper beech in various parts of the state; probably widely distributed: ALBANY, TIVOLI, ROCHESTER, BREWSTER and TARRYTOWN."

ALBANY City Park 1 Jl 1909, "infesting the underside of every leaf upon the trees of the European beech *F. sylvatica* of both green and purple varieties, but in no case were the leaves curled at all. I have never seen trees worse infested with plant lice than were these beeches. A few alate lice were taken." (Gillette, J.E.E. 2(6): 385, 1910).

ITHACA about 1914. Appears to be very common on the leaves of the copper beeches on the Cornell campus, (Morrison coll), 27 Oct 1935 (Crosby coll). ARNOT FOREST near ITHACA 12 Aug 1927, on beech, (L.P. Wehrle coll—Patch det), 14 Oct 1938 (males and oviparous females), 2 Aug 1938, 9 Ju 1939, on *Fagus sylvatica*, (Griswold coll). GENEVA 20 Oct 1948, ovipositing on *F. sylvatica*, (Chapman coll—Mason det), 22 Oct 1959, on *F. sylvatica* var. *atropunicea*, (Pechuman coll). LI:

FLUSHING 15 Oct 1940, on *F. sylvatica* var. *cuprea,* (Kisliuk coll—Mason det); ORIENT 25 Ju 1947, 15 Ju 1948, 7 Jl, 1 Nov 1958 and 16 May 1959, on *F. sylvatica,* (Latham coll); GREENPORT 23 Ju 1947, E. MARION 8 Ju 1959, on copper beech, (Latham coll).

Prociphilus sp.

LI: WOODHAVEN 31 Oct 1918, on rhubarb roots, (H. Richter coll—Patch det).

Prociphilus corrugatans (Sirrine) Woolly Hawthorn Aphid

Dr. C. F. Smith wrote me 15 April 1960 that until he has an opportunity to examine Fitch's types and to check into the matter further he believes it would be satisfactory to accept Baker's decision that Fitch's *Eriosoma pyri* is a synonym of *Prociphilus corrugatans.* However, in US Farmer's Bull. 1128, revised April 1926, p. 13, Quaintance and Baker under the heading "Pear Aphids Attacking the Foliage", refer to "Fitch's pear-root aphid, *Prociphilus fitchii* Baker and Davidson, which is very similar to the woolly thorn aphid and occurs in the Eastern States."

> Fitch's original statement is as follows: "*Eriosoma pyri* n. sp. The apple root blight. On the roots of a young apple tree brought me from a nursery, excrescences were observed, the crevices in which were found to be covered with small, lice-like larvae, which proved on examination to be this species, from which circumstances its habits are inferred and its name bestowed. No. 862, males." (Fitch, Fourth Rept., p. 68, 1851).

ITHACA 19 May 1911, on *Amelanchier* sp., (immature stem females; Patch; Me. Agr. Exp. Sta. Bull. 233, p. 254, 1914). Wellhouse, Cornell University Agr. Exp. Sta. Mem. 56: 1062, 1922: "A few colonies of the flocculent greenish aphids of the species *Pemphigus corrugatans* were found in early June on *Crataegus punctata.* They live on the underside of the leaves and curl the leaf margins downward."

SI: PORT RICHMOND 1 Sept 1943, on bark of *Crataegus* sp.; (Tuthill coll— Mason det; Sp Port Surv). LI: PECONIC 6 Ju 1958, on *Amelanchier canadensis* underside of leaves, (Latham coll).

Prociphilus erigeronensis (Thomas) White Aster Root Aphid

ITHACA 14 Sept 1928, on roots of *Aster* sp., 22 Oct 1930, on roots of *Primula japonica,* (Griswold coll—Cutright det). 25 Jl 1938, on roots of China Aster *Callistephus chinensis,* (Whetzel coll—Essig and Griswold det). N. COLLINS 3 Aug 1938, on roots of lettuce, (T.W. Kerr Jr. coll—Griswold det). CAMPBELL 28 Aug 1934, on *Oenothera* sp., (May Willard coll). LI: ORIENT 11 Jl 1948, on roots of *Helianthus annuus,* (Latham coll—det MDL with query; 1 slide), 19 Oct 1958, on roots of *Gnaphalium obtusifolium,* (Latham coll—det MDL with query).

Prociphilus imbricator Fitch Beech Blight Aphid

Fitch's original statement is as follows: "*Erisoma imbricator* n. sp. On the underside of the branches of the beech tree, covered with snow white down. On the slightest jar of the branch, a shower of tiny drops of a water-like fluid falls from these insects. Having met with no description of *E. fagi* (Linn.) or its habits, I am unable to ascertain whether that insect is dissimilar to ours. No. 864, male; 865 female (?); 866 larva." (Fourth Rept., p. 68, 1851).

NYL – Probably widely distributed and somewhat common and abundant. NEWPORT Oct, ITHACA (Morrison), RICHFIELD SPRINGS (Felt), BARNEVELD Aug, INDIAN LADDER Albany Co. and SCARSDALE Aug.

ITHACA, the nymphs and winged pre-sexuals on the underside of beech stems of a number of young trees, the abundant white flocculence making them very conspicuous during the latter half of October (?1913); in the second week in November some of the nymphs and winged still present, but in fewer numbers and at the same time large numbers of the dark, but not black, small eggs, laid promiscuously over the beech limbs, but more thickly on the smaller twigs and buds. (Morrison coll).

SIDNEY 30 Oct 1939, on bark of *Fagus*, (A. B. Hine coll—Essig and Griswold det).

Prociphilus tessellatus (Fitch) Woolly Alder Aphid

Fitch's original statement is as follows: "*Eriosoma tessellata* n. sp., on the underside of branches of the alder *Alnus rubra* Marsh crowded together and concentrated beneath a dense covering of snow white down. I have searched in vain for winged individuals of this species. No. 863." (Fitch, Cat. Homop. N.Y., p. 68, 1851).

NYL – Somewhat generally distributed but especially abundant in the ADIRONDACKS (Felt). ESSEX, MONROE, TOMPKINS and ORANGE COUNTIES and SUFFOLK Co. L.I.

ITHACA Oct 1906, on *Alnus glutinosa*, (Hayhurst coll—Tissot det). BATAVIA 11 Sept 1934, on *Alnus* sp., (Leonard and Crosby coll). ALTAMONT 17 Sept 1939, on bark of *Acer saccharinum*, (Griswold coll and det). ELLIS HOLLOW 2 Nov 1939, on *Alnus* sp., (Hansberry coll—Griswold det). LI: BABYLON 22 Ju 1934, on *Betula nigra*, (accidental; Blanton coll).

> "Biologically this species is of special interest, in addition to its migratory habits, because it is one of the few aphids known to hibernate in the nymphal stage. The sexual forms are produced on maples by migrants leaving the alders in the fall. The over-wintering eggs produce stem mothers in spring which produce generations (*accrifolii* Riley) destined to return in summer to alders. Although the life cycle is interrupted on its probable original host, the maple, the life cycle may continue without interruption on alders. The first person to work out the life history of this species was Patch [1908, 1911], whose findings were confirmed by the extensive studies of Pergande (1912)." (Hottes and Frison in "The Plant Lice, or Aphiidae, of Illinois," p. 373, 1931).

Pterocomma n. sp.

TONAWANDA INDIAN RES. Erie Co. 28 May 1960, on *Salix* sp., BARRE Burma Woods 22 Ju 1960, on *Populus grandidentata,* (Pechuman coll—CFS det).

Pterocomma bicolor (Oestlund) Reddish Brown Willow Bark Aphid

SLATERVILLE 24 May 1939, on *Salix cordata,* (Hansberry coll). LOCKPORT 29 May 1959, on *S. matsudana* var. *tortuosa,* (Pechuman coll—CFS det). LYNDONVILLE 29 Oct 1959, on *S. babylonica,* (Pechuman coll—CFS det).

Pterocomma flocculosa (Weed) American Poplar Bark Aphid

LOCKPORT 29 May 1959, on *Salix matsudana* var. *tortuosa,* (Pechuman coll—CFS det).

Pterocomma populifoliae (Fitch) Reddish Brown Poplar Aphid

"*Aphis populifoliae* n.sp.. On leaves of the *Populus grandidentata.* No. 852, male." (Fitch Cat. Homop. N.Y., p. 66, 1851). ALBANY 9 Ju 1927, on roof of State Ed. Bldg., (1 alate; Felt and Chamberlain).

Pterocomma pseudopopulea Palmer

SI: ROSEBANK 4 Sept 1943, on twig of *Populus* sp., (Lanz coll—Mason det as *P. populea* (Kalt.); Sp Port Surv; 2 slides in USNM). Recorded only from Colorado, Idaho and Utah.

Pterocomma salicis (Linnaeus)

NYL – BUFFALO Sept; KARNER, Ju (NYS).

TOMPKINS Co. 3, 23 May 1939. ITHACA 23 Ju 1939, on bark of *Salix cordata,* (Griswold coll and det as *Clavigerus*). GENEVA 20 Oct 1946, abundant on twigs of *Salix* sp., (Chapman coll—Mason det). BEDFORD Westchester Co. Ju 1935, on twigs of *Salix* sp., (S. W. Bromley coll).

Pterocomma smithiae (Monell)

Willow Grove Aphid or Black Willow Aphid

ITHACA Oct 1906, on *Salix* sp., (Hayhurst coll). ALBANY Ju, Oct 1927, on roof of State Ed. Bldg., in flight, (Felt and Chamberlain). Very common at ITHACA, VARNA, ETNA and FREEVILLE in Tompkins Co.: CROSBY, WILLIAMSVILLE and AMENIA, as well, in Erie Co., on twigs and stems of *S. alba* and other willows. (Leonard and Crosby coll 1933–1935). ITHACA 7 Sept 1939, on *Salix* sp., (Griswold), Sept 1945, on Wisconsin weeping willow *S. blandă,* (H. Aburto coll and det; slide in CU). GENEVA 20 Oct 1946, abundant on twigs of *Salix* sp., (Chapman coll—Mason det). LOCKPORT 6 Ju, on *S. nigra,* TONAWANDA INDIAN RES. Erie Co. 13 Ju,

on *Salix* sp., LYNDONVILLE 29 Oct, on *S. babylonica, Populus candicans* and *P. maximowiczii;* all in 1959, (Pechuman coll—CFS det). ROCHESTER 25 Oct 1959, on *Salix* presumably *babylonica;* about this collection Dr. Pechuman writes that the person who sent an infested branch to him reported that "all willow trees, presumably planted for shade, in the area were infested, causing much damage all summer and fall and that frequent spraying with one of the approved aphicides was of little value." LYNDONVILLE 28 Sept 1960, on *Populus nigra* var. *italica,* SENECA FALLS, 4 Oct 1960, on *Salix babylonica,* (Pechuman coll—CFS det). LI: WADING RIVER 30 May 1914, on *S. fragilis* (Olsen coll).

Rhopalosiphoninus staphyleae Koch

NEW YORK Mar, Apr 1937. Quite a number of aphids developed on the leaves of a tulip sprouted in the writer's home from two bulbs purchased locally in a store, (MDL coll—CFS det). This is apparently the first collection in the Eastern States.

> There is a slide of this aphid in the USNM from tulip bulbs in Illinois and one of an alate from a trap in Oregon. This aphid is said to be fairly common in Europe where it occurs on bulbs such as tulip, crocus, etc. Cottier (Aphids of New Zealand, p. 255, 1953) records it from three localities in New Zealand on *Aciphylla colensoi, Primula* sp. and potato, and states that it appears to be rare and of no economic importance.

Rhopalosiphum n.sp.

LI: BAY VIEW 12 Jl 1960, on *Rhus toxicodendron,* (Latham coll—CFS det).

Rhopalosiphum angelicae Del Guercio

LI: MASPETH 8 Aug 1913, on *Artemesia absinthimum.* "I found this species on a single wormwood plant in my garden in such great numbers as to do considerable damage both by feeding and by secretion of honeydew, almost destroying the plant before it drew my attention." (Olsen coll).

Rhopalosiphum berberidis (Kaltenbach) Barberry Aphid

In his Cat. Homop. N.Y., p. 65, 1851, Dr. Fitch described *Aphis berberidis* as a new species, in error. He wrote of this aphis as quoted further on.

ITHACA 13 May 1938, on *Berberis thunbergii,* (Griswold coll—Essig det). OSWEGO 8 Aug 1939, on *B. vulgaris,* (Griswold coll and det). BUFFALO 10 Jl 1959, on *Berberis* sp. (not *thunbergii* or *vulgaris*), (Pechuman coll). LOCKPORT, on *B. thunbergii,* 4 Ju, 21 Nov 1959, (sexuals), 5 Dec 1959, many oviparae, 19 Dec 1959, on *B. thunbergii,* (Pechuman); 21 May 1960, on *B. thunbergii,* (Pechuman coll—CFS det). NEW YORK Ft. Tryon Park 26 Sept 1936, abundant on the leaves of a small orna-

mental planting of *Mahonia* sp., (no alates could be found; MDL and Doris P. Leonard coll—Essig det).

Pechuman wrote of the November collection: "leaves had been dropped for 2 weeks; twigs covered with large numbers of bright green aphids and smaller numbers of larger dark spotted aphids and small numbers of fragile appearing alates. Although there has been considerable snow and ice, aphids are active." And of the December occurrence: "in spite of snow and cold there are still a number of living aphids on my barberries. They immediately become active when brought inside. The twigs are covered with yellow eggs."

The *Mahonia* record is apparently the first of an aphid on this plant in North America. Theobald in "The Plant Lice or Aphididae of Great Britain" 2, p. 43, 1927 merely lists this aphid as occurring on *Mahonia* sp.. The only other reference to an aphid occurring on *Mahonia* that I can find is by Takahashi in 1925 who described *Amphorophora viburni* Takahashi from *M. morrisonensis* in Japan. (Note: Although *Mahonia* is included in *Berberis* by some botanists, Standardized Plant Names states that the name is conserved under International Rules.)

Fitch, Tenth Rept., p. 22, 1867: "*Aphis berberidis* (Kalt.) A bush of barberry planted in my yard [Salem, N. Y.] before the commencement of the present century became infested with an aphis in the year 1846. How this insect came upon this shrub was quite a query in my mind. The nearest bush of this kind within my knowledge was two miles distant, with intervening hills, woods and streams of water. None of the insects appeared to acquire wings whereby it was possible for them to migrate and establish themselves elsewhere, until quite late in the autumn.

"This insect continued to infest the same bush until the year 1855, when it failed to make its appearance, and has not since returned. At no time did it become greatly multiplied, nor was the shrub perceptibly injured by it. So late as the middle of November I have observed the wingless females busily engaged in depositing their eggs . . . in the axils of the buds . . . .

"The first season that these lice appeared, winged individuals were often sought for but none were found, until the month of November, when they became quite numerous . . . . When they were about disappearing eight years afterwards, winged specimens were found in plenty among them in May and June."

Rhopalosiphum conii (Davidson) Honeysuckle and Parsnip Aphid

This is said to be a synonym of *Hydaphis foeniculi* Pass..

ITHACA 21 Oct 1932, on *Symphorocarpus racemosus,* (Leonard coll), 14 Sept 1934, on *Cicuta maculata,* and FOREST HOME (Ithaca) 4 Aug 1933, on wild parsnip, (Leonard and Crosby coll), 22 Oct 1935, on *Lonicera* sp., (G. F. MacLeod coll—MDL det). GENEVA 20 Oct 1946, abundant on *L. tartarica,* (Chapman coll—Mason det), 26 Oct 1938, on *Lonicera* sp., (all males; Griswold coll), 24 Sept 1938, on *Daucus carota* wild, (Hansberry coll—Essig and Griswold det), 17 Oct 1938, on *Symphorocarpus racemosus,* (several males; Griswold coll), 21 Jl 1939, on *Levisticum officinale,* (P. A. Readio coll—LMR det). LOCKPORT 2 Nov 1958, on *Lonicera tartarica,* 26 Oct 1960, on *L. japonica* var. *halliana,* (Pechuman coll). ROCHESTER 3 Ju 1958, on *L. prolifera,* (Pechuman coll). LYNDONVILLE 25 Aug 1959, on *Cicuta maculata,* (Pechuman coll), 28 Sept 1960, on *Lonicera sempervirens,* (Pechuman coll—CFS det). SENECA FALLS 4 Oct 1960 on *L. tartarica,* OLCOTT Keg Creek 5 Oct 1960,

on *L. dioica*, (Pechuman coll—CFS det). SI: TOMPKINSVILLE 24 Aug 1943, a heavy infestation on the flowering portions of *Thaspium aureum*, (Tuthill coll—Mason det; Sp Port Surv); CASTLETON CORNERS 20 Nov 1960, 1 alate in Moericke Trap, (Rundlett coll—J. O. Pepper det). LI: MASPETH 1 Nov 1914, on *Lonicera japonica*, (Olsen coll); GREENPORT 15 Sept 1957, on *L. sempervirens*, 25 Sept 1958, on *Daucus carota* wild, (Latham coll); MATTITUCK 22 May, 6 Ju 1958 very common, 17 Oct 1957, on *Lonicera sempervirens*, (Latham coll); ORIENT 17 Aug, on garden carrot, 19 Oct 1958, on *Cicuta maculata*, 9 Jl, on parsley, and 17 Jl 1959, on cult. parsnip, (Latham coll); E. QUOGUE 4 Ju 1959, on *Lonicera sempervirens*, PECONIC 9 Jl 1959, on cult. parsnip, (Latham coll); locality ? 21 Sept 1946, on carrots, SAG HARBOR Sept 1 and GREENPORT 29 Jl 1941, on *Cicuta maculata*, (Latham coll); ORIENT 5 Jl 1959, on *Pastinaca sativa*, *Heracleum lanatum*, SOUTHOLD 11 Jl 1959, on cult. parsnip, (Latham coll—CFS det).

Rhopalosiphum enigmae Hottes and Frison

LI: RIVERHEAD 22 Jl 1933, on *Typha latifolia*, (Leonard coll); GREENPORT 27 Oct 1946, on *Typha angustifolia*, (Latham coll).

Rhopalosiphum fitchii (Sanderson) Apple Grain Aphid

For sometime past European workers have considered this as a synonym of *Rh. insertum* (Walker). It is possible that some of the records refer to *Rh. padi* (L.), vid.

ITHACA 8 Oct 1933, on *Crataegus* sp., (Crosby coll). SLATERVILLE 16, 24 May 1959, on *Crataegus* sp., (Hansberry coll—MDL det). ITHACA received in USDA 29 Jl 1959 from Dr. Rochow, on barley, (LMR det). NEW YORK Central Park 12 May 1941, on *Crataegus* sp.; ITHACA 19 Oct 1932, on *C. coccinea*, (Leonard and Crosby coll), 17 Ju 1939, on *Triticum aestivum*, (Griswold coll). CAYUTA LAKE 13 Sept 1934, on *Crataegus* sp., (Leonard and Crosby coll). LYNDONVILLE 28 Sept 1960, on *C. (cordata) phaenopyrum*, (Pechuman coll—CFS det). SI: CASTLETON CORNERS 20 Nov 1960, several alates, one a male, in yellow water-pan, (Rundlett coll—det J. O. Pepper as either *fitchii* or *padi*). LI: ORIENT 24 Ju 1946, on *Dactylis glomerata*, 15 Dec 1948, common on rye, (Latham coll).

This aphid is probably present in the state wherever the wild or cultivated apple occurs on which it spends the winter in the egg stage. It also overwinters in the same manner on *Crataegus* spp.. Although it is often abundant on the buds and young foliage in commercial apple orchards it probably causes comparatively little damage since shortly after the blossoms fall it migrates to grains and grasses on which it passes the summer, fall migrants returning to the winter hosts for the purpose of egg-laying. Dr. P. J. Chapman, Entomologist of the N. Y. (Geneva) Agricultural Experiment Station wrote me in July 1961 that this aphid is "generally present, often abundant but not considered an economic pest. Winter eggs normally greatly outnumber those of other apple aphids on twigs and spurs of apple trees."

Dr. W. F. Rochow, Dept. Plant Pathology, Cornell University wrote me in July 1961 that this aphid is the second most important factor in the spread of the barley yellow dwarf disease in New York. Outbreaks on oats in recent years have been more striking than those on barley or wheat.

ITHACA: "The dark green stem mothers of the species *Rhopalosiphum prunifoliae* begin to appear on the buds of native hawthorns as soon as the bud scales have separated enough to show the green leaves within. The colonies increase during April and early May, doing some damage to the leaves and buds, but before June they migrate from the trees to grasses and are not often on the trees between early June and autumn. The winter eggs are laid on hawthorn twigs and buds." (Wellhouse, W. H., Cornell Univ. Agr. Exp. Sta. Mem. 56:1065, 1922).

Rhopalosiphum grabhami Cockerell

ITHACA 29 May 1939, on *Lonicera* sp., (P. A. Readio coll—LMR det).

Rhopalosiphum maidis (Fitch) Corn Leaf Aphid

Dr. Fitch's statement in connection with the original description of this species is as follows:

"The Maize Aphis, *Aphis maidis,* new species. Crowded together and covering the stem which bears the ear; small dull-green and reddish lice, slightly dusted over with a fine white powder." (First and Second Reports, p. 318, 1856).

Insect Pest Survey records in USDA on corn as follows: ADAMS 16 Aug 1919 (Crosby coll); ISCHUA 13 Sept (Crosby); OSWEGO 13 Sept 1933 (Blauvelt coll); HAMMOND, MALONE 13 Sept, 28 Aug 1933, "corn badly infested." (Crosby); ESSEX Co. Sept 1936, abundant in some fields (Crosby); LIVINGSTON Co. several bad infestations; GENESEE Co. Aug 1940, "an 18 acre field heavily infested and injury very evident." (Leiby coll).

Other records are: YONKERS 11 Feb 1927, on *Sorghum* and rye in greenhouse, (J. L. Horsfall coll—LMR det). HAMMOND 11 Sept 1933 (T. E. Petrie coll). ITHACA 15, 18 Apr 1937, on teosinte *Euchlaena perennis,* a plant related to corn, in greenhouse, (Griswold coll—MDL det), 8 Feb 1939, on corn in greenhouse, (Griswold coll—MDL det). MIDDLETOWN 5 Aug 1939, on corn, (R. W. Leiby coll—MDL det). ATHOL Warren Co. Aug 4 1927, an alate on top of fire tower on Crane Mountain, 3289 ft. elevation; NASSAU Co. 3 Oct 1927, 1 alate taken in a kite, (Felt and Chamberlain). ORLEANS Co. Jl 1939, "beginning to show on corn tassells", (O. G. West). GASPORT 19 Sept 1959, on *Echinochloa crusgalli,* (Pechuman coll). A note on insects of sweet corn in the HUDSON RIVER VALLEY in N. Y. Weekly Rept. in CEIR 8(34):750, Aug 22, 1958: "The most abundant insects in corn ears were . . . corn leaf aphid"; N. Y. Weekly Rept. in CEIR 10(34):780, Aug. 19, 1960: "Becoming conspicuous in sweet corn in HUDSON VALLEY and considerable amount present in ERIE COUNTY." TONAWANDA INDIAN RES. Genesee Co. 4 Aug 1959, on *Zea mays,* (Pechuman coll—CFS det).

SI: CASTLETON CORNERS Sept 1954, on *Setaria faberii* Herm., (Rundlett coll—LMR det). LI: MASPETH 24 Aug 1913, on *Digitaria sanguinalis, Setaria glauca* and *Echinochloa crusgalli*, (Olsen coll); SOUTHHOLD 26 Jl 1933, abundant on a large planting of young corn, (MDL coll); ORIENT 22 Jl 1946, on corn, 7 Jl 1946, on *Hordeum vulgare*, (Latham coll); RIVERHEAD 6 Aug 1943, on corn, (Mason det; Sp Port Surv); ORIENT 25 Jl 1955, 22 Jl 1958, on *Echinochloa crusgalli*, 1 Jl 1958, 12 Aug 1959, on *Panicum capillare*, ORIENT 2 Jl, GREENPORT 20, 23 Jl 1959, on sweet corn, (Latham coll).

Common and widespread, often abundant on corn but not often doing much injury. In addition to corn it is found on various grasses. Dr. W. F. Rochow of Cornell University, Dept. Plant Pathology, reports it is often common on oats and barley late in the season, especially in the Ithaca area, and that then it is responsible for the transmission of the barley yellow dwarf virus disease of oats.

Rhopalosiphum nymphaeae (Linnaeus) Waterlily Aphid

ITHACA "Observed on *Typha latifolia* in 1915, 1916 and 1918", (Patch det; P. W. Claassen, Cornell Univ. Agr. Exp. Sta. Mem. 47, p. 500, 1921), 22 Aug 1939, on *Lemna minor*, (M. Scotland coll—Essig and Griswold det); in the Me. Agr. Exp. Sta. Lot Book is the following record: "Aug 7 1933 on *Lemna minor*, Minnie V. Scotland coll., Patch det." ROCHESTER 11 Aug 1933, very abundant and injurious on a large commercial collection of water lilies, (Leonard and Crosby coll). LYNDONVILLE 20 Jl 1959, abundant on *Nelumbium lutea*, (Pechuman coll). LI: CUTCHOGUE 14 Sept 1943, abundant on *Nymphaea odorata*, (C. S. Tuthill coll—Mason det; Sp Port Surv); EAST NORWICH Jl 1936, on waterlily, (K. E. Maxwell coll); CALVERTON 16 Oct 1946, RIVERHEAD 23 Jl 1959, on *Nuphar advena*, (Latham coll); GREENPORT early summer 1957, "Swarms of them on a clump of sweet flag *Acorus calamus* no specimens collected and all gone 2 weeks later" (in lit. from Latham), [I had assumed that this is *R. nymphaeae* but see under *R. rufiabdominalis*]; SHELTER ID., 30 Jl 1960, on *Nuphar advena*, (Graham coll—CFS det).

Rhopalosiphum padi (Linnaeus) Oat Bird-cherry Aphid

W. H. Richards in Can. Ent. Suppl. 13:35, 1960 states: "*R. padi* is very closely related to *R. viridis*, new species, and *R. fitchii*. The winged stages of the three species can be distinguished only with difficulty. . . . The alienicolae can be readily confused with those of *R. fitchii* and records of *R. fitchii* invariably refer to *R. padi*."

According to this all or most of the records in this List under *R. fitchii* should refer to *R. padi* but it would be difficult, if not impossible, to properly evaluate them. An early New York record, identified as *padi*, is from a slide in the USNM by Pergande, RICHFIELD SPRINGS, N. Y., 31 May 1888.

Rhopalosiphum poae Gillette Gillette's Blue Grass Aphid

OLCOTT 17 Nov 1892 a "drift" on peach (J. O. Lockwood coll—det Tissot 1936 as *Capitophorus*).

NYL – ITHACA Mar, on wheat in greenhouse, (Griswold coll—det Patch as *Aphis pseudoavenae* Patch).

LOCKPORT 25 Ju 1960, on *Bromus commitatus,* (Pechuman coll—det J. O. Pepper according to key by Richards).

Rhopalosiphum pseudobrassicae (Davis) Turnip Aphid

Hille Ris Lambers considers this to be a synonym of *Lipaphis erysini* Kalt.

The turnip aphid had long been confused with the cabbage aphid until its true identity was recognized by J. J. Davis, who described it as a new species in 1914 from specimens taken on cabbage at GENEVA, N. Y., on July 15, 1912, and on mustard and kale at Evansville, Indiana, November 20 of the same year. It is probably generally distributed, since it is so readily confused with the cabbage aphid, and is often very injurious to the cruciferous crops, especially on Long Island. Available individual records are as follows:

ITHACA 14 Sept 1939, on *Brassica arvensis,* (Leonard and Crosby coll); 27 Ju 1939, on turnip, (Hansberry coll—MDL det). TONAWANDA INDIAN RES. Genesee Co. 3 Sept 1960, on *B. nigra,* (Pechuman coll—CFS det). LI: MONTAUK POINT 7 Jl 1933, on *Cakile edentula,* (Leonard coll—Tissot det); BABYLON 7 Jl 1934, on mustard *Brassica* sp., (Blanton coll—Tissot det); 3 Jl 1939, on wild radish, (Ed. Kurtz coll; 1 slide in USNM); NORTHVILLE 13 Sept 1943, on rutabaga, (Tuthill coll—Mason det; Sp Port Surv); ORIENT 16 Jl 1958, on *Raphanus raphanistrum,* (Latham coll: "I found a wide strip of farm land along one edge of string beans that was full of wild radish and that whole strip of radish was alive with aphids, every plant hanging heavy.") ORIENT 11 Jl, on cult. radish, 19 Jl 1959, on leaves and heads of *Cakile edentula,* 26 Jl on *Sisymbrium officinale,* and 1 Dec 1960, on flowers of *Lepidium virginicum,* (Latham coll).

Rhopalosiphum rhois (Monell) Monell's Sumac Aphid

ITHACA 13 Ju 1914, common on the terminal shoots and leaves of sumac, (Morrison coll). ITHACA, EGGLESTON'S GLEN Sept 1933, 1934, on *Rhus glabra,* smokebush *Cotinus cotinus,* (Leonard and Crosby coll), 19 Sept 1935, on sumac, (Crosby coll), 21 Jl 1939, on *Rhus toxicodendron,* (Hansberry coll). FREDONIA 24 Jl 1905, on *Rh. typhina,* (Hayhurst coll). YONKERS 2 Jl 1927, on *Rh. aromatica,* (Horsfall coll and det), 5 Jl 1938, on *Rhus* sp., (E. P. Imle coll—Essig det). BARRE Burma Woods Orleans Co. 9 Jl 1958, on *Rh. typhina,* ("huge colonies but restricted to a few plants"; Pechuman coll). LYNDONVILLE 31 Jl 1959, on *Rh. glabra,*

(Pechuman coll). SI: TOTTENVILLE 9 Oct 1960, on *Rh. copellina,* (Rundlett coll). LI: ORIENT Jl 1924, on grass, (Latham coll—Mason det; 1 slide in USNM has both apterae and alates); GREENPORT 26 Jl 1959, on *Rh. glabra,* (Latham coll); BABYLON 12 Jl, 15 Aug 1934, on leaves of sumac, (Blanton coll).

Rhopalosiphum rufiabdominalis (Sasaki)?

LI: ORIENT 2 Aug 1958, "common on blades" of *Acorus calamus,* GREENPORT 1957, (Latham coll—LMR det).

Rhopalosiphum rufomaculatum (Wilson) Pale Chrysanthemum Aphid

ITHACA 11 Nov, 4 Dec 1926, in Floriculture Dept. greenhouse on *Chrysanthemum indicum* hybrid, (Griswold coll—Patch det), 23 Ju 1939, on *Artemisia absinthium,* (Hansberry coll—Essig det).

Rhopalosiphum serotinae (Oestlund)

Hille Ris Lambers places this species in the genus *Cachryphora* which was erected by Oestlund with *serotinae* as the genotype.

LI: NORTHWEST 20 Ju 1948, on *Solidago uliginosa,* ORIENT 29 Sept 1957, in tops of plants of *S. graminifolia,* 29 Sept 1957, on *S. rugosa,* 19 Oct 1958, on *S. serotina,* and 18 Ju 1958, on *S. altissima,* GREENPORT 4 Oct 1957, on *S. altissima,* 26 Jl, on *S. aspera,* and 27 Jl 1958 on *S. rugosa,* BAY VIEW 10 Sept 1960, on *S. rugosa,* (all Latham coll).

Schizolachnus piniradiatae (Davidson)

MEDINA 28 Sept (oviparae), 1 Nov 1960 (oviparae and males), on *Pinus resinosa,* (Pechuman coll—J. O. Pepper det).

Shenahweum minutum (Davis)

ITHACA 31 Jl, 25 Aug 1939, on *Acer saccharum,* (Griswold coll and det; 10 slides in CU).

Sipha (Rungsia) agropyrella Hille Ris Lambers

ITHACA 13 Jl 1952, no plant given, (Pimentel coll—LMR det; 2 slides in USNM). URBANA 2 Jl 1959, on *Agropyron repens,* (Pechuman coll—CFS det). LI: MATTITUCK 3 Ju 1958, on *A. repens,* (Latham coll—LMR det).

Sipha flava (Forbes) Yellow Sugarcane Aphid

FREDONIA Jl 1905, on *Setaria glauca,* (Hayhurst coll). ITHACA 9 Sept 1927, on sugarcane in Plant Pathology greenhouse, (Griswold coll—MDL det).

Sipha glyceriae (Kaltenbach)

ITHACA 10 Ju 1924, in a collection taken from the stomach of a trout by Herbert J. Pack, (Patch det; Me. Agr. Exp. Sta. Lot Book). The only other record for North America is that by Patch; in Me. Agr. Exp. Sta. Bull. 182:241–242, 1910; she records making a single large collection on 22 Ju 1909 from rush, *Juncus* sp. growing in a marsh pool in Orono, Me.. All stages of the aphids were present and: "many of the aphids were completely submerged on dead blades of grass but apparently in no wise disturbed or inconvenienced by this circumstance, but were to all appearances as comfortable as those above the water on live blades."

Stegophylla sp.

ITHACA 31 Jl 1958, on oak, (J. G. Matthysse coll; 1 slide in USNM). SI: CASTLETON CORNERS 6 Oct 1960, on *Quercus palustris*, (Rundlett coll).

Stegophylla quercicola (Baker)

ITHACA 22 Sept 1934, on *Quercus alba*, (Leonard and Crosby coll), 9 Sept 1943, on *Q. rubra*, (L. Cutkomp coll—MDL det), 10 Ju 1939, on *Q. rubra*, (Cutkomp coll—Essig det). LI: RIVERHEAD 9 Sept 1934, on oak leaves, (Leonard and Crosby coll), 10 Oct 1958, on *Q. coccinea*, "under leaves which lay on ground, very common, all apterae, mealy", (Latham coll); LOCUST VALLEY 25 May 1936, on *Q. velutina*, (K. E. Maxwell coll—MDL det).

Tamalia sp.

ITHACA (?) 16 Aug 1927, on red oak, (Griswold coll—Mason det; 10 slides in CU, one with 8 apterae, the other with 10 apterae).

> Miss Griswold's note, dated 16 Aug 1927 is as follows: "Brought me by De Mesa. They have long, woolly filaments. Live in curled end of leaf. This curled end turns brown and dies. These aphids were sent to Washington and determined by P. W. Mason as *Tamalia* sp. close to unnamed species in the National Collection."

Tamalia coweni (Cockrell) Manzanita Leaf-gall Aphid

LI: HAMPTON BAYS 6 Ju 1946, galls common on *Arctostaphylos urva-ursi*, MONTAUK 21 Jl 1946, and MANORVILLE 1 Aug 1947, on same plant. (Latham coll).

Thecabius sp.

LI: GREENPORT 25 Ju 1958, on *Lysimachia terrestris*, SOUTHOLD 8 Jl 1960, on same plant, ("white aphids in curled heads of plants"; Latham coll). Hottes and Frison in The Plant Lice, or Aphiidae, of Illinois, p. 374, 1931 under the heading "Thecabius species" say: "What is apparently another species of this genus was collected in leaves of *Lysimachia*

. . . . The apterous forms of all our material produced considerable flocculent secretions." It seems probable that the New York collections may be the same aphid, but without alates specific determination is impossible.

Thecabius populimonilis (Riley) Beadlike Cottonwood Gall Aphid

NYL – ALDER CREEK Aug, gall on Balm-of-Gilead.

Thecabius populiconduplifolius (Cowen)? Folded Leaf Poplar Aphid

SI: NATURE TRAIL 22 Nov 1960, woolly aphids on *Ranunculus repens,* (Rundlett coll—MDL det; only apterae present). Palmer states that apterous viviparae occur on *Ranunculus* in Colorado.

Therioaphis riehmi (Börner) Sweetclover Aphid

TROY AIRPORT 15 Sept 1956, on white sweet clover *Melilotus alba,* (J. W. Gentry coll—LMR det; 1 slide in USNM). TONAWANDA INDIAN RES. Genesee Co. 29 Oct 1960, on *M. alba,* (Pechuman coll—det CFS with query).

Therioaphis trifolii (Monell) Yellow Clover Aphid

Undoubtedly occurs throughout the state on clovers and often fairly common but not a significant pest.

"GENEVA 29–30 June, ALBANY 1 July 1909, in moderate numbers on the underside of leaves of red clover." (Gillette, J.E.E. 3(4):369, 1910). ITHACA Mar 1937, 31 Oct 1939, on *Trifolium* sp. in greenhouse, (Griswold coll). CROWN POINT 25 Aug 1955, on red clover, (LMR coll and det). BINGHAMTON 13 Jl 1956, on red clover, (Geo. Gyrisco coll—LMR det). LOCKPORT 26 Sept 1959 (a few apterae and immatures), on *T. repens* on the lawn, (Pechuman coll). MT. KISCO 1 Aug 1960, on *T. pratense,* (Graham coll—Ole Heie det). LI: SHELTER ID. 28 Aug 1960, on *T. arvense,* 28 Jl 1960, on *T. millefolium, T. pratense,* (John Graham coll—MDL det).

Dr. Gyrisco of Cornell University wrote (1961) that this aphid is very abundant on red clover when plants are taken into the greenhouse from the field, and will occur in such numbers as to necessitate control.

Thripsaphis balli (Gillette) Thrips Aphid

RICHFIELD SPRINGS (probably 1888) on *Scirpus sylvaticus,* (Pergande coll; specimens in USNM; No. 4052; A. C. Baker, Can. Ent. 49(1):4, 1917 as *Saltusaphis*).

Toxoptera graminum (Rondani) Green Bug

SODUS 16 Aug 1923, infesting buckwheat, (note by Crosby to Insect Pest Survey, USDA). ITHACA 11 Ju 1952, an alate in flight "near potato fields", (S. H. Kerr coll—LMR det).

Thifidaphis phaseoli (Passerini)

ITHACA 5 Oct 1928, on roots of *Browalia americana*, (Griswold coll—Maxson det; 2 slides in CU).

Trifidaphis radicicola (Essig) Solanum Root Louse

This is quite probably a synonym of *T. phaseoli* (Pass.).

WARSAW 20 Aug 1913, on bean roots, (Crosby coll—Patch det; Me. Agr. Exp. Sta. Lot Book). ITHACA 4 May 1922, on roots of potato (L. P. Wehrle coll; in USNM. LI: MINEOLA 5 May 1926, on roots of sweet pea, (J. P. Chapman coll; in USNM).

> J. M. Hawley (Cornell University Agr. Exp. Sta. Mem. 55, pp. 117–118, 1922): "Each year a few bean plants have been found with their roots serving as hosts for the Solanum Root Louse, *Trifidaphis radicicola*. If the aphids are numerous the leaves turn yellow and the plants take on a wilted appearance, due to injury of the lateral roots caused by the feeding of the pest. Infested plants have been found from June 22 to August 22. Only the apterous forms of the insect were seen, and usually there were more immature than fully developed lice present. These aphids are cream-colored but their powdery covering frequently gives them a white, woolly appearance.
>
> "A bean grower near Castile, N. Y., informed the writer that in 1915 his entire field was so badly attacked that the crop was ruined. When beans were planted in the field the next year they were again infested and had to be dragged up. Lice of this species have also been found in small numbers near Batavia, Genesee County . . . . It is probable that the insect may be found on weeds in New York and is injurious to beans only when they are planted after other infested hosts." [Hawley's laboratory was located at Perry from 1917–1921.]

ILLUSTRATIONS

ALL PHOTOMACROGRAPHS BY H. LOU GIBSON 1962

PLATE 1: The Cloudy-winged Cottonwood Leaf Aphid *Chaitophorus populicola* Thomas. From a photomacrograph of a slide mount (CFS) showing wings spread as in flight. The tiny hook, or hamulus, can be seen projecting from the frontal border of each hind wing. This hook engages a looped cell in the basal border of the fore wing in order to couple the wings for action in unison during flight. The tarsi have the hooked claws typical of insects. This species has inconspicuous cornicles; see Plate 2. Actual length of the body is about 2mm (1/12 inch) and the wing spread is about 5mm (1/5 inch).

PLATE 2: The Brown Ambrosia Aphid *Dactynotus ambrosiae* (Thomas). From a slide (A.T. Olive) comparing winged and wingless forms and mounted to show wing venation and keys to the species. Note that the cornicles, long black rods protruding from the abdomen, are pronounced. The rostrum is folded under the body on this slide. Actual length of the body is about 3mm (1/8 inch).

PLATE 1

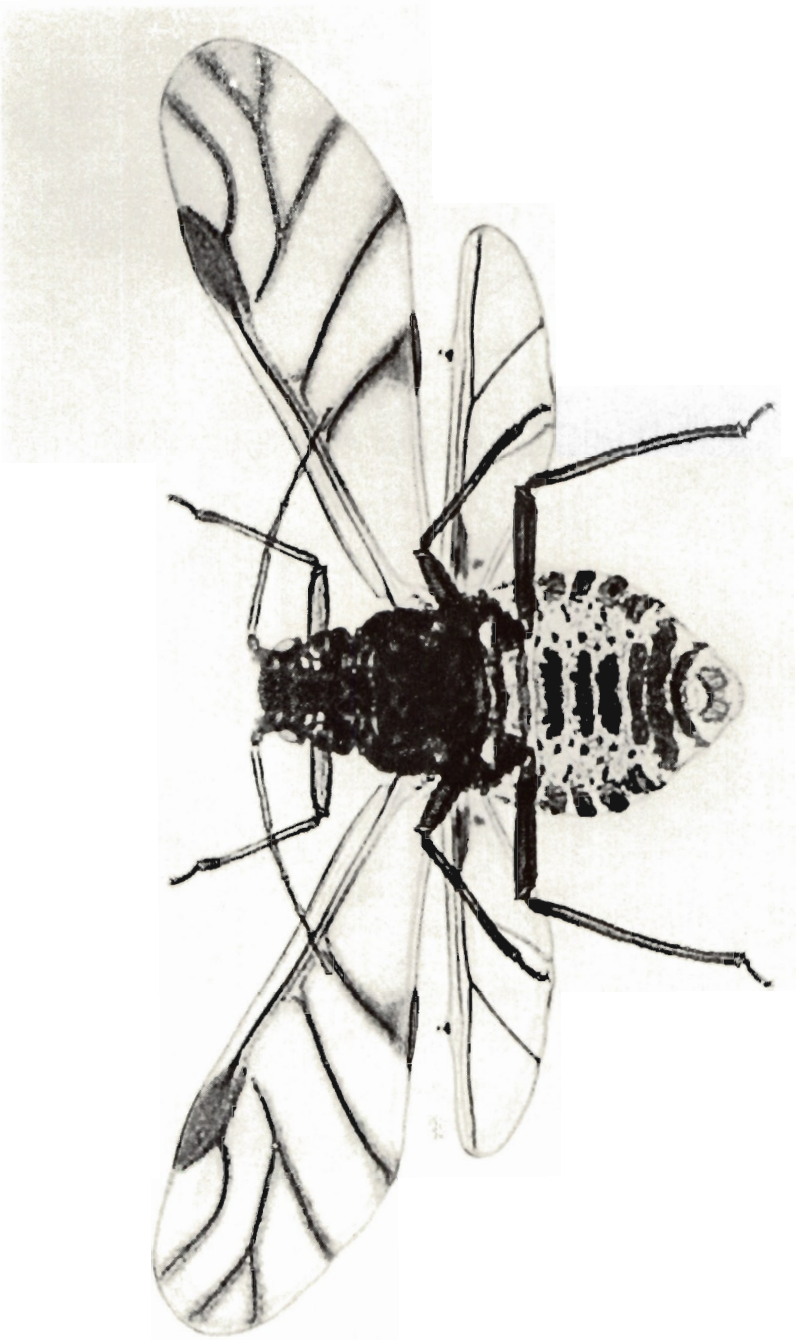


Plate 2

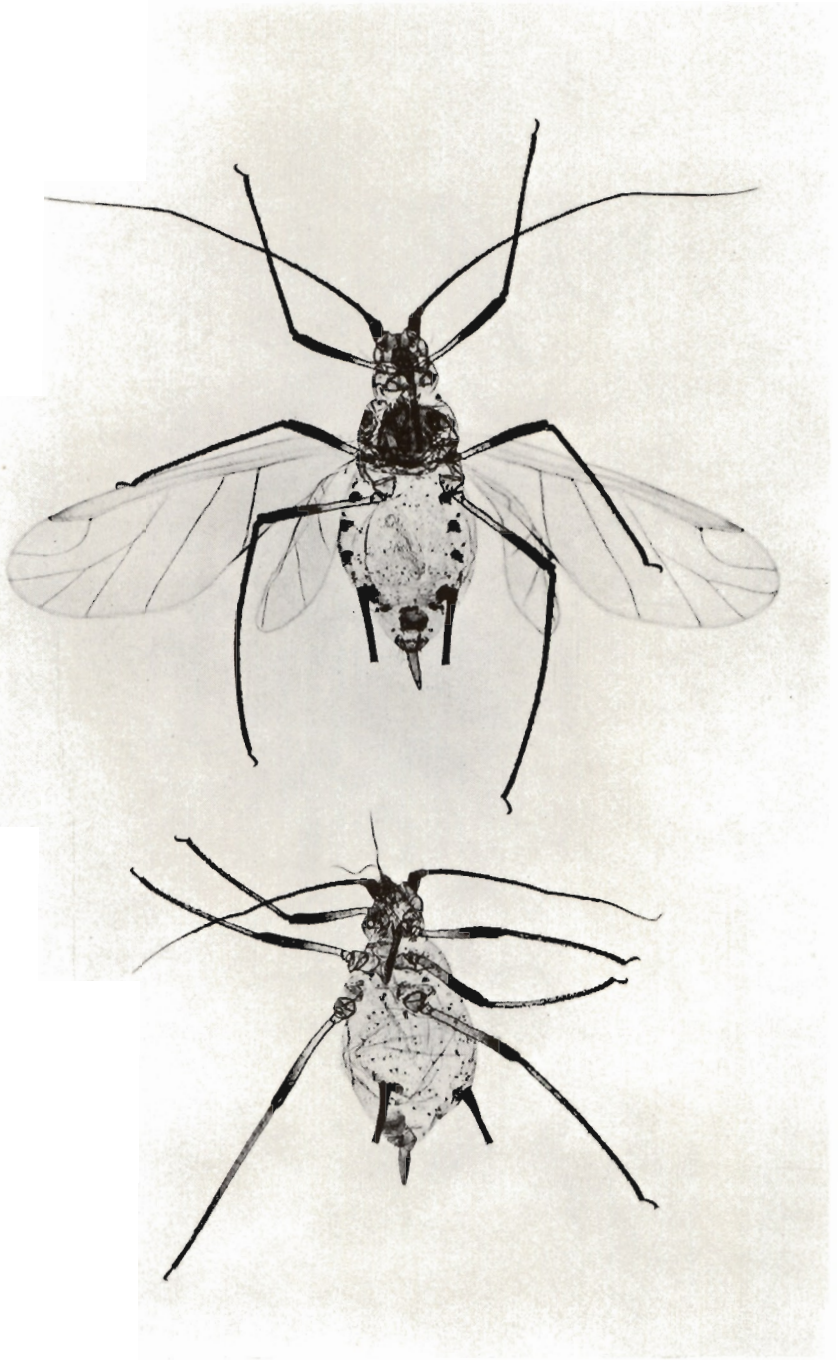
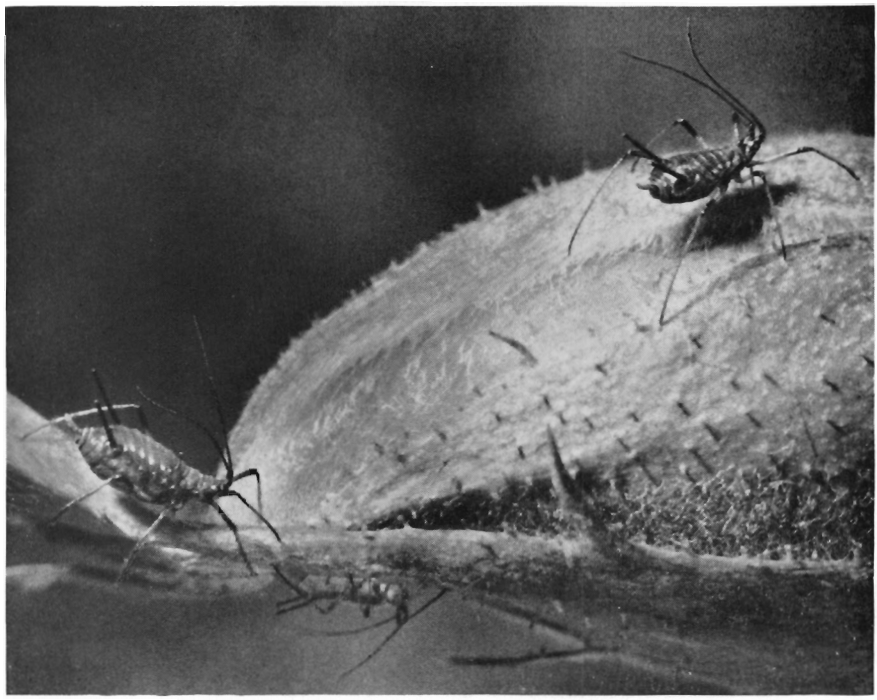


PLATE 3

PLATE 4



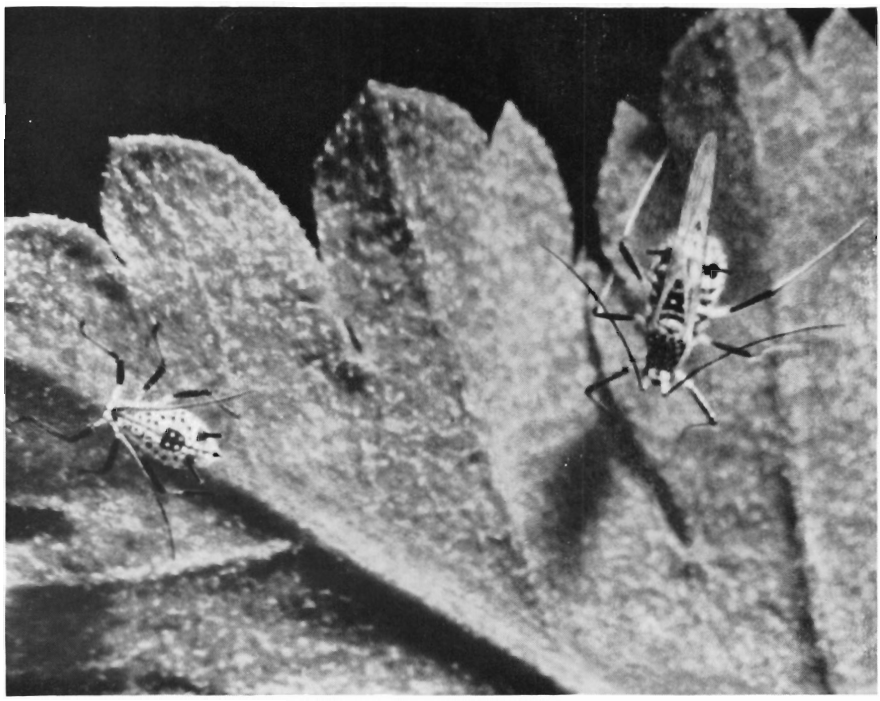


PLATE 3: Live Brown Ambrosia Aphids on stems of black-eyed susan *Rudbeckia hirta*. The insects were in their characteristic feeding position—heads downward, abdomens and hind legs elevated, styli inserted into plant. They arrange themselves in orderly rows and when disturbed crouch close to the stems in amazing unison. They also return to the feeding position together as one. The photographic field selected placed an alate prominently in the center. Gibson observes that: "this species (and several others) folds its wings with the frontal edges next to the body. This is about 90° to 180° axial rotation from the usual position adopted by most other 4-winged insects, which rest with the basal edges of the wings horizontally across or vertically touching the body. The aphid probably takes this stance in order to preclude interference of the wing bases with the cornicles, or perhaps to conserve space in crowded colonies".

PLATE 4 (Top): Live mature wingless specimens of the well-known Rose Aphid *Macrosiphum rosae* (Linnaeus). On the left the typical stance of the fore legs and the insertion of the beak can be noted. Cornicles and cauda are presented by the righthand specimen. An immature aptera lurks under the bud. Average length of the mature body is 3mm (1/8 inch).

PLATE 4 (Bottom): Aphids exhibit varied shapes and colors that differ quite a lot from the most commonly seen green species. For example, the live alate and aptera recorded here were powdery white with a jet-black pattern. The cornicles are of intermediate proportion. These specimens have as yet not been determined. They were feeding on May weed *Anthemis cotula* and were about 3mm (1/8 inch) long.

LIST OF FOOD PLANTS

Abies balsamea Balsam Fir
Cinara curvipes
Mindarus abietinus

Abies concolor White Fir
Mindarus abietinus

Acanthopanax sieboldianus Fiveleaf Aralia
Aphis spiraccola

Acer sp. Maple
Longistigma caryae
Neoprociphilus aceris
Periphyllus lyropictus

Acer negundo Boxelder
Aphis sp.
Drepanosiphum platanoides
Periphyllus negundinis

Acer nigrum Black Maple
Drepanaphis acerifoliae
D. carolinensis

Acer pennsylvanicum Striped Maple
Periphyllus lyropictus

Acer platanoides Norway Maple
Drepanosiphum platanoides
Periphyllus lyropictus

Acer platanoides var. **palmatifidum** Cutleaf Norway Maple
Periphyllus lyropictus

Acer platanoides var. **laciniatum** Eagle-claw Maple
Periphyllus lyropictus

Acer pseudo-platanus Sycamore Maple
Drepanosiphum platanoides
Periphyllus lyropictus

Acer rubrum Red Maple
Drepanaphis acerifoliae

Acer saccharinum Silver Maple
Drepanaphis acerifoliae
Neoprociphilus aceris
Prociphilus tesselatus

Acer saccharum Sugar Maple
Drepanaphis acerifoliae
D. carolinensis
D. kansensis

Acer saccharum—Cont'd
D. monelli
D. parvus
Periphyllus americanus
P. lyropictus
Prociphilus tesselatus
Shenahweum minutum

Achillea lanulosa Yarrow
Macrosiphoniella millefolii

Achillea millefolium Common Yarrow
Dactynotus ambrosiae
Macrosiphoniella millefolii
Macrosiphum sp.

Acorus calamus Sweetflag
Rhopalosiphum rufiabdominalis ?

Adiantum sp. Maidenhair Fern
Idiopterus nephrelepidis

African Violet see **Saintpaulia**

Agrimonia gryposepala Agrimony
Macrosiphum agrimonellum
Macrosiphum euphorbiae

Agrimony see **Agrimonia**

Agropyron repens Quackgrass
Sipha agropyrella

Alder see **Alnus**

Alfalfa see **Medicago**

Allium cepa Onion
Micromyzus formosanus

Allspice, Carolina see **Calycanthus**

Alnus sp. Alder
Myzocallis alnifoliae
Prociphilus tessellatus

Alnus glutinosa Black Alder
Myzocallis alnifoliae
Prociphilus tessellatus

Alnus incana White Alder
Myzocallis alnifoliae
Prociphilus tessellatus

Alnus rubra Red Alder
Prociphilus tessellatus

Alnus rugosa Speckled Alder
Calaphis alnosa
Myzocallis alnifoliae

Althaea rosea Hollyhock
Myzus persicae

Amaranthus hybridus Prince's Feather
Aphis helianthi ?
Macrosiphum euphorbiae

Amaranthus retroflexus Pigweed
Macrosiphum euphorbiae
Myzus persicae

Ambrosia sp. Ragweed
Dactynotus ambrosiae

Ambrosia artemisiifolia Common Ragweed
Aphis gossypii
Geoica lucifuga ?

Ambrosia trifida Giant Ragweed
Dactynotus ambrosiae

Amelanchier sp. Shadbush
Prociphilus corrugatans

Amelanchier canadensis
Eriosoma americana
Prociphilus corrugatans

Amelanchier florida
Aphis spiraecola

Amelanchier laevis Allegany Shadbush
Aphis spiraecola

Amelanchier sanguinea Roundleaf Shadbush
Aphis spiraecola

Anaphalis margarita Pearly Everlasting
Dactynotus ambrosiae
D. idahoensis
D. russellae

Angelica sp.
Cavariella aegopodii

Anise Root see **Osmorhiza**

Antennaria neodioica Smaller Pussytoes
Macrosiphum rudbeckiae

Anthemis cotula Dogfennel, Mayweed
Aphis gossypii
Macrosiphum euphorbiae

Anthemis tinctoria Chamomile
Aphis gossypii

Antirrhinum sp. Snapdragon
Macrosiphum euphorbiae
Myzus persicae

Antirrhinum majus Common Snapdragon
Myzus persicae

Apium graveolens var. **dulce** Celery
Aphis gossypii
A. nasturtii
A. sanborni
Cavariella aegopodii
Myzus persicae
M. solani

Apium graveolens var. **rapaceum** Celeriac
Myzus persicae

Apocynum cannabinum Dogbane
Aphis asclepiadis
A. spiraecola
Macrosiphum euphorbiae

Apple see **Malus**

Aquilegia sp. Columbine
Pergandeidia trirhoda

Aquilegia chrysantha
Kakimia essigi
Pergandeidia trirhoda

Aquilegia vulgaris European Columbine
Kakimia essigi
Pergandeidia trirhoda

Aralia see **Acanthopanax**

Arborvitae see **Thuja**

Arctium lappa Great Burdock
Aphis fabae
Macrosiphum gravicornis

Arctium minus Common Burdock
Aphis fabae
Cavariella pastinaccae

Arctostaphylos uva-ursi Bearberry
Tamalia coweni

Arctotis sp.
Dactynotus ambrosiae

Armoracia rusticana (lapathifolia) Horse-radish
Aphis fabae
Myzus persicae

Aronia arbutifolia Red Chokeberry
Aphis pomi

Aronia melanocarpa Black Chokeberry
Aphis pomi

Arrow-wood see **Viburnum**

Artemisia absinthium Wormwood
Macrosiphoniella absinthii
Rhopalosiphum angelicae

Artemisia vulgaris Mugwort
Macrosiphoniella artemisiae

Artemesia schmidtiana var. **nana**
Macrosiphoniella n. sp. ?

Asclepias sp. Milkweed
Aphis asclepiadis
A. nerii
Macrosiphum cuphorbiae
Myzocallis asclepiadis
M. punctata

Asclepias amplexicaulis
Myzocallis asclepiadis

Asclepias pulchra Swamp Milkweed
Aphis helianthi

Asclepias syriaca Common Milkweed
Aphis asclepiadis
A. gossypii
A. nerii
A. spiraecola ?
Macrosiphum euphorbiae
Myzocallis asclepiadis
M. punctata

Aster spp. Wild Aster
Anuraphis maidiradicis
Aphis gossypii
Dactynotus ambrosiae
D. gravicornis
D. n.sp. No. 5
Forda sp.

Aster spp.—Cont'd
F. olivacea
Macrosiphum euphorbiae
Prociphilus crigeronensis

Aster spp. Cultivated Aster
Anuraphis maidiradicis
Dactynotus ambrosiae
D. rudbeckiae

Aster ericoides Heath Aster
Dactynotus ambrosiae
D. n.sp. No. 7

Aster lateriflorus
Aphis armoraciae

Aster macrophyllus
Dactynotus ambrosiae

Aster novae-angliae New England Aster
Macrosiphum anomalae ?

Aster novi-belgi New York Aster
Aphis asterensis
Dactynotus ambrosiae

Aster puniceus
Dactynotus ambrosiae
D. tissoti

Aster simplex
Aphis armoraciae

Aster umbellatus Flattop Aster
Dactynotus ambrosiae
D. rudbeckiae
D. sp.

Atriplex patula
Aphis fabae
Macrosiphum cuphorbiae
Myzus persicae

Avena sativa Oat
Macrosiphum granarium
Rhopalosiphum fitchii
R. maidis

Avens, White see **Geum canadense**

Azalea see **Rhododendron**

Baccharis halmifolia Sea Myrtle
Aphis coreopsidis
Macrosiphum baccharidis

Balm of Gilead see **Populus gileadensis**

Balsam see **Abies**

Baptisia tinctoria Wild Indigo
Macrosiphum euphorbiae

Barberry see **Berberis**

Barley see **Hordeum**

Barnyard Grass see **Echinochloa**

Basswood or Linden see **Tilia**

Bean see **Phaseolus**

Bearberry see **Arctostaphylos**

Bedstraw see **Galium**

Beet see **Beta**

Beggarticks see **Bidens**

Bergamot, Wild see **Monarda fistulosa**

Begonia semperflorens Perpetual Begonia
Aphis gossypii

Belamcanda chinensis Blackberry Lily
Macrosiphum euphorbiae

Berberis sp. Barberry
Rhopalosiphum berberidis

Berberis thunbergii Japanese Barberry
Rhopalosiphum berberidis

Berberis vulgaris European Barberry
Rhopalosiphum berberidis

Bergenia (Saxifraga) crassifolia
Amphorophora sonchi
Hypermyzus pallidus

Beta vulgaris Beet
Anuraphis maidiradicis
Aphis fabae
Geoica lucifuga ?

Beta vulgaris var. **cicala** Swiss Chard
Aphis fabae

Betula spp. Birch
Calaphis betulae ?
C. betulaecolens
Euceraphis brevis
E. deducta
E. mucida
Hamamelistes spinosus
Longistigma caryae

Betula sp. Willow Birch
Euceraphis betulae
Hamamelistes spinosus

Betula lenta Sweet or Black Birch
Euceraphis betulae
E. mucida
Hamamelistes spinosus

Betula lutea Gray or Yellow Birch
Calaphis betulaecolens
Euceraphis betulae
E. lineata

Betula maximowicziana Monarch Birch
Calaphis betulaecolens
C. granovskyi
Euceraphis gillettei

Betula nigra River or Red Birch
Calaphis betulaecolens
Pemphigus balsamifera ?

Betula papyrifera Paper Birch
Calaphis betulaecolens
C. betulella
Euceraphis betulae
E. gillettei
E. punctipennis

Betula pendula European White Birch
Calaphis granovskyi
Chaitophorus betulae ?
Euceraphis betulae

Betula pendula var. **dalecarlica** Cut-leaved Birch
Calaphis betulaecolens
Neosymydobius annulatus

Betula populifolia Gray Birch
Calaphis betulaecolens
Euceraphis betulae
Hamamelistes spinosus
Neosymydobius annulatus

Bidens sp. Beggarticks
Dactynotus chrysanthemi

Bidens cerna
Dactynotus chrysanthemi

Bidens comosa
Dactynotus chrysanthemi

Bidens frondosa
Aphis coreopsidis
Dactynotus chrysanthemi

Bidens vulgata
Aphis coreopsidis
Dactynotus chrysanthemi

Birch see **Betula**
Birdsfoot Trefoil see **Lotus**
Bittersweet see **Celastrus**
Blackberry see **Rubus**
Blackberry Lily see **Belamcanda**
Black Snakeroot see **Sanicula**
Blackeyed Susan see **Rudbeckia**
Blueberry see **Vaccinium**
Boneset see **Eupatorium**
Boston Fern see **Nephrolepis**

Bougainvillea sp.
Myzus persicae

Bouvardia sp.
Aphis craccivora

Bracken see **Pteris**

Brake Fern see **Pteridium**

Brassica sp. Mustard
Myzus persicae
Rhopalosiphum pseudobrassicae

Brassica kaber (arvensis) Charlock
Myzus persicae

Brassica napobrassicae Rutabaga
Aphis gossypii
Brevicoryne brassicae
Myzus persicae
Rhopalosiphum pseudobrassicae

Brassica napus Rape
Brevicoryne brassicae
Myzus persicae

Brassica nigra Black Mustard
Brevicoryne brassicae
Rhopalosiphum pseudobrassicae

Brassica oleracea var. **botrytis** Broccoli, Cauliflower
Brevicoryne brassicae
Myzus persicae

Brassica oleracea var. **capitata** Cabbage
Brevicoryne brassicae
Myzus persicae
Rhopalosiphum pseudobrassicae

Brassica oleracea var. **gemmifera** Brussels Sprouts
Brevicoryne brassicae
Myzus persicae
Rhopalosiphum pseudobrassicae

Brassica oleracea var. **gonglyodes** Kohlrabi
Aphis gossypii
Brevicoryne brassicae
Myzus persicae

Brassica oleracea (acephala) var. **viridis** Kale or Collards
Brevicoryne brassicae
Myzus persicae

Brassica pekinensis Petsai Cabbage
Myzus persicae

Brassica rapa Turnip
Myzus persicae
Rhopalosiphum pseudobrassicae

Broccoli see **Brassica**

Browalia americana
Trifidaphis phaseoli

Brussels Sprouts see **Brassica**

Bryophyllum sp.
Myzus persicae

Buckthorn see **Rhammus**
Buckwheat see **Fagopyrum**
Buffalo Berry see **Shepherdia**
Bulrush see **Scirpus**
Burdock see **Arctium**
Buttercup see **Ranunculus**
Buttonbush see **Cephalanthus**

Cabbage, Petsai see **Brassica**

Cactus, Orchid see **Epiphyllus**

Cakile edentula Sea Rocket
Myzus persicae
Rhopalosiphum pseudobrassicae

Calamagrostis canadensis Reedgrass
Hyalopterus arundinis

Calendula sp.
Aphis fabae
Dactynotus ambrosiae
Macrosiphum euphorbiae
Myzus circumflexus
M. persicae

Calendula officinalis Pot Marigold
Aphis fabae
Geoica lucifuga ?
Myzus circumflexus
M. persicae

Callalily see **Zantedeschia**

Calliandra inaequilatera
Myzus persicae

Callistephus chinensis China Aster
Macrosiphum euphorbiae
Prociphilus crigeronensis

Calycanthus sp. Carolina Allspice
Aphis fabae

Campsis (Tecoma) radicans Trumpet Creeper
Aphis craccivora
Myzus persicae

Cape Marigold see **Dimorphotheca**

Capsella bursa-pastoris Shepard's Purse
Aphis fabae
Myzus persicae

Capsicum frutescens Redpepper
Macrosiphum euphorbiae
Myzus persicae

Caraway see **Carum**

Cardoon see **Cynara**

Carex annectens Sedge
Aphis sp.

Carnation see **Dianthus**

Carpinus caroliniana American Hornbeam
Macrosiphum carpinicolens

Carrion Flower see **Smilax**

Carrot see **Daucus**

Castorbean see **Ricinus**

Carum carvi Caraway
Aphis sp.

Carya sp. Hickory
Longistigma caryae
Melanocallis caryaefoliae
Monellia caryae
M. caryaella
M. costalis
M. nigropunctata
Myzocallis punctatella

Carya cordiformis Bitternut Hickory
Monellia caryae
M. caryaella
M. costalis
M. nigropunctata

Carya glabra Pignut Hickory
Monellia costalis

Carya ovalis Red Hickory
Melanocallis caryaefoliae

Carya ovata Shagbark Hickory
Melanocallis caryaefoliae
Monellia caryae
M. costalis
M. nigropunctata
M. punctata

Castanea dentata American Chestnut
Calaphis castaneae

Catalpa bignonioides Southern Catalpa
Aphis gossypii

Catnip see **Nepeta**

Cat's-ear see **Hypochaeris**

Cattail see **Typha**

Cauliflower see **Brassica**

Celastrus sp. Bittersweet
Aphis fabae

Celastrus orbiculata Oriental Bittersweet
Aphis fabae

Celastrus scandens American Bittersweet
Aphis fabae
A. craccivora

Celery see **Apium**

Centaurea sp. Star Thistle
Anuraphis cardui

Cephalanthus occidentalis Buttonbush
Aphis cephalanthi

Chaenomeles sp. Flowering Quince
Aphis pomi ?

Chaenomeles (Cydonia) japonica
Japanese Flowering Quince
Aphis pomi ?

Charlock see **Brassica**

Chenopodium sp. Pigweed
Aphis craccivora
A. fabae
Hyalopterus atriplicis

Chenopodium album
Lamb's-quarters or Pigweed
Aphis fabae
A. gossypii
Hyalopterus atriplicis
Macrosiphum dirhodum ?
M. euphorbiae
Myzus persicae
Rhopalosiphum pseudobrassicae

Cherry see **Prunus**

Chestnut see **Castanea**

Chickweed see **Stellaria**

Chicory see **Cichorium**

China Aster see **Callistephus**

Chokeberry see **Aronia**

Chokecherry see **Prunus**

Chrysanthemum sp.
Aphis gossypii
Dactynotus n.sp. No. 7
Macrosiphoniella sanborni
Rhopalosiphum rufomaculatum

Chrysanthemus balsamita Costmary
Macrosiphum ludovicianae

Chrysanthemum frutescens
Marguerite Chrysanthemum
Aphis gossypii
Myzus persicae

Chrysanthemum indica
Mother Chrysanthemum
Aphis gossypii
Macrosiphoniella sanborni
Rhopalosiphum rufomaculatum

Chrysanthemum leucanthemum
Ox-eye Daisy
Aphis gossypii
Dactynotus n.sp. No. 7
Macrosiphoniella sanborni
Myzus persicae

Chrysanthemum maxima Shasta Daisy
Aphis sp.

Chrysanthemum morifolium
Florists' Chrysanthemum
Aphis gossypii
Macrosiphoniella sanborni
Rhopalosiphum rufomaculata

Chrysopsis falcacta
Sickleleaf Golden Aster
Dactynotus n.sp. No. 1
Myzus persicae

Chrysopsis mariana
Dactynotus n.sp. No. 1

Cichorium endivia Endive
Macrosiphum euphorbiae

Cichorium intybus Common Chicory
Dactynotus n.sp. No. 7
Macrosiphum euphorbiae
Nasonovia ribisnigri

Cicuta sp. Water Hemlock
Cavariella aegopodii

Cicuta maculata
Spotted Water Hemlock
Aphis gossypii
Cavariella aegopodii
C. hendersoni ?
Dactynotus n.sp. No. 7
Rhopalosiphum conii

Cineraria see **Senecio**

Cinquefoil see **Potentilla**

Cirsium sp. Thistle
Aphis fabae
Capitophorus braggii
Dactynotus rudbeckiae

Cirsium arvense Canada Thistle
Capitophorus braggii
C. eleagni
Dactynotus ambrosiae
Rhopalosiphum conii

Cirsium discolor Field Thistle
Anuraphis cardui
Dactynotus ambrosiae
D. n.sp. No. 7

Cirsium vulgare (lanceolatum) Bull Thistle
Anuraphis carduella
A. cardui

Citrullus vulgaris Watermelon
Aphis gossypii

Clethra barbinervis Japanese Clethra
Aphis sp. near *pomi*

Clover see **Trifolium**

Cnicus arvensis
Capitophorus braggii

Cobaea scandens Purplebell Cobaea
Macrosiphum euphorbiae

Cocklebur see **Xanthium**

Collards see **Brassica**

Collinsonia canadensis Richweed
Hyalomyzus eriobotryae ?
H. sp.

Columbine see **Aquilegia**

Comptonia peregrina var. **asplenifolia** Sweetfern
Cepegillettea myricae

Coneflower see **Rudbeckia**

Convolvulus sepium Wild Morning Glory
Macrosiphum euphorbiae

Coreopsis sp.
Macrosiphum euphorbiae

Corn see **Zea**

Cornus sp. Dogwood
Anoecia corni
Aphis cornifoliae
A. helianthi ?

Cornus alternifolia Green Osier
Anoecia corni ?

Cornus amomum Silky Dogwood
Anoecia corni

Cornus asperifolia (candidissima) Roughleaf Dogwood
Anoecia corni
Aphis cornifoliae

Cornus foemina
Anoecia querci

Cornus racemosa (paniculata)
Anoecia corni
Aphis cornifoliae

Cornus rugosa
Anoecia corni ?
Aphis neogillettei

Cornus stolonifera Red Osier
Anoecia corni

Corylus sp. Filbert
Myzocallis coryli

Corylus americana American Filbert
Myzocallis coryli

Corylus avellana var. **contorta** Curly European Filbert
Myzocallis coryli

Corylus cornuta Beaked Filbert
Myzocallis coryli

Corylus maxima Giant Filbert
Myzocallis corlyi

Cosmos sp.
Aphis coreopsidis
A. fabae
Macrosiphum euphorbiae

Cosmos bipinnatus
Anuraphis maidiradicis
Aphis spiraecola
Geoica lucifuga ?

Cotinus americanus Smoke Tree
Rhopalosiphum rhois

Cotoneaster rosea
Myzus cerasi

Cottonwood see **Populus**

Cowlily see **Nuphar**

Cowparsnip see **Heracleum**

Crabapple see **Malus**

Crabgrass see **Digitaria**

Cranberrybush see **Viburnum**

Crataegus sp. Hawthorn
Amphorophora crataegi
Anuraphis bakeri
Aphis crataegifoliae
A. pomi
Eriosoma crataegi
Prociphilus corrugatans
Rhopalosiphum fitchii

Crataegus anomala
Amphorophora crataegi

Crataegus chrysocarpa Fireberry Hawthorn
Eriosoma crataegi
Ovatus crataegarius

Crataegus crusgalli Cockspur Hawthorn
Amphorophora crataegi
Eriosoma crataegi

Crataegus intricata (coccinea) Thicket Hawthorn
Aphis crataegifoliae
A. pomi
Rhopalosiphum fitchii

Crataegus macrosperma
Amphorophora crataegi ?
Aphis crataegifolia

Crataegus oxycantha English Hawthorn
Aphis crataegifoliae
A. pomi
Eriosoma crataegi

Crataegus oxycantha var. **pauli** Paul's Scarlet Thorn
Eriosoma crataegi
E. lanigerum
Myzus persicae
Ovatus crataegarius

Crataegus phaenopyrum Washington Hawthorn
Aphis crataegifoliae ?
Rhopalosiphum fitchii

Crataegus pruinosa Frosted Hawthorn
Amphorophora crataegi

Crataegus punctata Dotted Hawthorn
Amphorophora crataegi
Aphis crataegifoliae
Prociphilus corrugatans

Crimson Clover see **Trifolium**

Crocus sp.
Myzus persicae

Crunchweed see **Brassica**

Cucumber see **Cucumis**

Cucumber Tree see **Magnolia**

Cucumis melo Muskmelon
Aphis gossypii

Cucumis sativus Cucumber
Aphis gossypii

Cucurbita maxima Squash
Aphis gossypii
Macrosiphum euphorbiae

Cucurbita moschata Cushaw or Crookneck
Aphis gossypii

Cucurbita pepo Pumpkin
Aphis gossypii

Cucurbita pepo var. **ovifera** Gourd
Aphis gossypii
Macrosiphum euphorbiae

Cudweed see **Gnaphalium**

Currant see **Ribes**

Cyclamen sp.
Myzus circumflexus

Cyclamen indicum Ivyleaf Cyclamen
Aphis gossypii
Myzus circumflexus

Cydonia oblonga Quince
Aphis pomi ?

Cynara cardunculus Cardoon
Aphis fabae

Cyrtomium sp. Fern
Idiopterus nephrelepidis

Dactylus glomerata Orchard Grass
Anoecia corni
Hyalopteroides humilis
Rhopalosiphum fitchii

Dahlia sp.
Anuraphis rumexicolens
A. tulipae
Aphis fabae
A. gossypii
A. nasturtii
Macrosiphum euphorbiae
Myzus persicae

Dahlia pinnata Aztec Dahlia
Aphis fabae
Macrosiphum euphorbiae
Myzus persicae

Dandelion see **Taraxacum**

Daucus carota Wild Carrot
Cavariella pastinaccae
Rhopalosiphum conii

Daucus carota Garden Carrot
Anuraphis carotae
A. maidiradicis
Aphis fabae
A. gossypii
Cavariella aegopodii
Rhopalosiphum conii

Decodon verticillatus Swamp Loosestrife
Myzus lythri

Delphinium sp. (Cult.) Larkspur
Aphis rociadae

Desmodium canadense Canadian Tick Trefoil
Hyalopterus arundinis
Microparsus variabilis

Deutzia scabra Fuzzy Deutzia
Aphis craccivora

Devil's Claws see **Martynia**

Devil's Paintbrush see **Hieracium**

Dianthus caryophyllus Carnation
Myzus persicae

Dianthus chinensis
Myzus persicae

Digitaria ischaemum Smooth Crabgrass
Myzus persicae

Digitaria sanguinalis
Aphis sp.
Hysteroneura setariae
Rhopalosiphum maidis

Dimorphotheca sp. Cape Marigold
Dactynotus ambrosiae

Dipsacus sp. Teasel
Macrosiphum rosae

Dipsacus sylvestris Wild Teasel
Macrosiphum rosae

Dock see **Rumex**

Dogbane see **Apocynum**

Dogfennel see **Anthemis**

Dog's-tooth Violet see **Erythronium**

Dogwood see **Cornus**

Dracocephalum (Physostegia) virginianum
Myzus solani

Duckweed see **Lemna**

Echinochloa crusgalli Barnyard Grass
Rhopalosiphum maidis

Eggplant see **Solanum**

Elder see **Sambucus**

Elaeagnus angustifolia Russian Olive
Capitophorus archangelskii
C. braggii
C. elaeagni

Elaeagnus multiflora Cherry Elaeagnus
Capitophorus braggii

Eleusine indica Goose Grass
Anoecia querci

Elm see **Ulmus**

Endive see **Cichorium**

Epilobium coloratum Purpleleaf Willowweed
Aphis nasturtii

Epiphyllum sp. Orchid Cactus
Myzus persicae

Erechtites hieraceifolia Fireweed
Aphis fabae

Erigeron sp. Fleabane
Dactynotus erigeronensis
D. gravicornis

Erigeron annuus Daisy Fleabane
Aphis helichrysi
Dactynotus erigeronensis
D. gravicornis

Erigeron canadensis Horseweed Fleabane
Aphis armoraciae
A. gossypii
Dactynotus erigeronensis
D. gravicornis

Erigeron pulchellus Robin's Plantain
Dactynotus erigeronensis

Erigeron speciosus Showy Fleabane
Dactynotus gravicornis

Erigeron strigosus (ramosus)
Dactynotus gravicornis
D. tissoti

Erythronium dens-canis Dog's-tooth Violet
Myzus persicae

Euchlena mexicana (perennis) Teosinte
Rhopalosiphum maidis

Euonymus sp. Spindletree
Aphis fabae

Euonymus sp. **(? bungeanus)** Winterberry Euonymus
Aphis fabae

Euonymus americanus Strawberry-bush
Aphis fabae

Euonymus atropurpureus Eastern Wahoo
Aphis fabae

Euonymus europaeus European Spindle Tree
Aphis fabae

Euonymus nikoensis Nikko Euonymus
Aphis fabae

Eupatorium sp.
Dactynotus ambrosiae

Eupatorium aromaticum
Aphis gossypii

Eupatorium coelestinum forma **alba**
Aphis sp.
Microsiphum sp.

Eupatorium maculatum Joepyeweed
Aphis gossypii
A. nostras
A. vernoniae ?

Eupatorium perfoliatum Boneset
Aphis sp.
Dactynotus ambrosiae
Macrosiphum pseudorosae

Eupatorium purpureum Bluestem Joepyeweed
Aphis gossypii
Dactynotus ambrosiae
D. gravicornis

Eupatorium rugosum (urticaefolium) White Snakeroot
Dactynotus ambrosiae
D. chrysanthemi

Evening Primrose see **Oenothera**

Everlasting see **Anaphalis**
see **Gnaphalium**
see **Helichrysum**

Fagopyrum saggitatum Buckwheat
Aphis fabae
Toxoptera graminum

Fagus grandifolia American Beech
Longistigma caryae
Phyllaphis fagi ?

Fagus sylvatica var. **atropunicea** Copper or Purple Beech
Phyllaphis fagi
Prociphilus imbricator

False Buckwheat see **Polygonum**

False Dandelion see **Pyrrhopappus**

False Hellebore see **Veratrum**

Fern, Maidenhair see **Adiantum**

Filbert see **Corylus**

Fir see **Abies**

Fleabane see **Erigeron**

Forgetmenot see **Myosotis**

Four-o'clock see **Mirabilis**

Foxglove see **Digitalis**

Foxtail see **Setaria**

Fragaria sp. Strawberry
Myzus porosus
Pentatrichopus minor
P. minor var. *dorsalis*
P. thomasi

Fragaria chiloensis Chiloe Strawberry
Macrosiphum rosae

Fragaria virginiana Virginia Strawberry
Aphis forbesi
Pentatrichopus fragaefolii

Freesia sp.
Myzus persicae

Galinsoga parviflora Quickweed
Geoica lucifuga ?
Myzus persicae

Galium sp. Bedstraw
Myzus sp.

Galium aparine
Aphis gossypii

Galium circaezans
Aphis gossypii

Geranium (Cult.) see **Pelargonium**

Geranium robertianum Herb-Robert
Macrosiphum (Acyrthosiphon) pelargonii

Gerbera sp.
Aphis gossypii
Macrosiphum pseudorosae
Myzus persicae
Rhopalosiphum pseudobrassicae

German Ivy see **Senecio**

Geum canadense White Avens
Amphorophora rossi

Gill-over-the-ground see **Glecoma**

Gladiolus sp.
Anuraphis tulipae
Aphis fabae
Myzus persicae

Gladiolus gandavensis (hybrid)
Anuraphis tulipae

Glecoma hederacea Gill-over-the-ground
Macrosiphum sp.
Myzus persicae

Gleditsia triacanthos Honey Locust
Aphis craccivora

Gnaphalium obtusifolium Fragrant Cudweed
Prociphilus erigeronensis ?

Gnaphalium polycephalum
Dactynotus n.sp. No. 7
Myzus persicae
Prociphilus erigeronensis ?

Goat's Rue see **Tephrosia**

Golden Chain Tree see **Laburnum**

Goldenglow see **Rudbeckia**

Goldenrod see **Solidago**

Gooseberry see **Ribes**

Goose Grass see **Eleusine**

Gourd see **Cucurbita**

Gourd see **Lagenaria**

Grape see **Vitis**

Groundsel see **Senecio**

Hamamelis virginiana Witchhazel
Hamamelistes spinosus
Hormaphis hamamelidis

Hawkweed, Rough see **Hieracium**

Hawthorn see **Crataegus**

Heart's-Ease see **Polygonum**

Hedera helix English Ivy
Aphis pseudohedcrae
Myzus persicae

Hedge Mustard see **Sisymbrium**

Helenium sp.
Macrosiphum tardae

Helianthus sp. Sunflower
Dactynotus gravicornis
Macrosiphum illini var. *sangamonensis*

Helianthus annuus Common Sunflower
Geoica lucifuga ?
Macrosiphum illini
Prociphilus crigeronensis ?

Helianthus decapetalus
Thinleaf Sunflower
Aphis helianthi
Dactynotus ambrosiae

Helianthus giganteus Giant Sunflower
Macrosiphum sp.

Helianthus grosseserratus
Sawtooth Sunflower
Geoica lucifuga ?

Helianthus latiflorus var. **rigidus**
Stiff Sunflower
Aphis helianthi

Helianthus petiolaris
Prairie Sunflower
Macrosiphum sp.

Helianthus tuberosus
Jerusalem Artichoke
Dactynotus n.sp. No. 3

Helichrysum sp. Everlasting
Dactynotus ambrosiae
Myzus persicae

Helichrysum bracteatum Strawflower
Myzus persicae

Heliopsis helianthoides Ox-eye
Dactynotus n.sp.

Heliotrope see **Heliotropium**

Heliotropium arborescens
Common Heliotrope
Myzus circumflexus

Henbit see **Lamium**

Heracleum sp. Cowparsnip
Cavariella theobaldi

Heracleum lanatum
Common Cowparsnip
Aphis helianthi ?
A. heraclella
Cavariella essigi ?
C. theobaldi
Rhopalosiphum conii

Herb-Robert see **Geranium**

Hercules Club see **Zanthoxylum**

Hibiscus esculentus Okra
Aphis gossypii
Macrosiphum euphorbiae
Myzus persicae

Hibiscus moscheutos Rosemallow
Aphis fabae

Hibiscus syriacus Rose-of-Sharon
Aphis gossypii

Hickory see **Carya**

Hieracium aurantiacum
Devil's Paint-brush
Dactynotus gravicornis
Nasonovia ribisnigri

Hieracium canadense
var. **hirtirameum**
Macrosiphum sp.

Hieracium florentinum
Nasonovia ribisnigri

Hieracium pratense King Devil
Dactynotus ambrosiae
D. sp.

Hieracium scabrum Rough Hawkweed
Dactynotus sp.

Hollyhock see **Althaea**

Honey Locust see **Gleditsia**

Honeysuckle see **Lonicera**

Hop see **Humulus**

Hordeum vulgare Barley
Macrosiphum granarium
Rhopalosiphum fitchii
R. maidis

Hornbeam see **Carpinus**

Horse-nettle see **Solanum**

Horse-radish see **Armoracia**

Humulus lupulus Hop
Phorodon humuli

Hypericum sp. St. Johnswort
Aphis fabae

Hypochoeris radicata Spotted Cat's-ear
Dactynotus n.sp. No. 7

Impatiens sp. Jewelweed
Aphis coreopsidis
A. impatientis
Macrosiphum impatiensicolens
M. pseudorosae

Impatiens biflora (capensis) Spotted Touchmenot
Aphis impatientis
Dactynotus sp.
Macrosiphum impatiensicolens ?

Ipomoea batata Sweet Potato
Myzus persicae

Ipomoea purpurea Morning Glory
Myzus persicae

Iris sp.
Anuraphis tulipae
Macrosiphum euphorbiae
Myzus circumflexus
M. persicae

Iris ensata Russian Iris
Anuraphis tulipae

Iris germanica German Iris
Macrosiphum euphorbiae

Iris susiana Mourning Iris
Anuraphis tulipae

Ironweed see **Vernonia**

Iva oraria (frutescens)
Dactynotus ambrosiae

Iva xanthifolia
Dactynotus ambrosiae

Ivy, English see **Hedera**

Jerusalem Cherry see **Solanium**

Jetbead see **Rhodotypus**

Jewelweed see **Impatiens**

Joepyeweed see **Eupatorium**

Juglans nigra Black Walnut
Monellia caryae
M. costalis
M. nigropunctata

Juglans regia Persian Walnut
Chromaphis juglandicola

Juglans sieboldiana Siebold Walnut
Monellia caryae

Juniperus virginiana Red Cedar
Cinara sabinae

Kale see **Brassica**

King Devil see **Hieracium**

Knotweed see **Polygonum**

Kohlrabi see **Brassica**

Laburnum anagyroides Golden Chain Tree
Aphis craccivora

Lactuca sp. Lettuce
Dactynotus ambrosiae
D. sonchellus
D. n.sp.
Macrosiphum rudbeckiae

Lactuca canadensis Canada Lettuce
Amphorophora sonchi
Dactynotus ambrosiae
D. sonchellus
D. n.sp.

Lactuca saggitifolia
Dactynotus ambrosiae ?

Lactuca sativa Garden Lettuce
Dactynotus n.sp. No. 7
D. ambrosiae
D. rudbeckiae
Macrosiphum euphorbiae
Myzus persicae
M. solani
Nasonovia ribisnigri
Pemphigus bursarius

Lactuca serriola Prickly Lettuce
Dactynotus n.sp. No. 7
D. ambrosiae ?
D. sonchellus

Lactuca serriola var. **integrata**
Macrosiphum sp.

Lactuca spicata Blue Lettuce
Dactynotus ambrosiae
D. sonchellus
D. n.sp. No.7

Lagenaria leucantha (vulgaris) Cultivated Gourd
Macrosiphum euphorbiae

Lambsquarters see **Chenopodium**

Lamium amplexicaule Henbit
Myzus solani

Larch see **Larix**

Larix sp. Larch
Cinara laricis

Larix laricina Tamarack
Cinara laricis

Larkspur see **Delphinium**

Lathyrus odorata Sweet Pea
Geoica radicicola
Macrosiphum pisi

Leersia (Homalocenchrus) oryzoids Rice Cut-grass
Colopha ulmicola

Leersia virginica
Colopha ulmicola

Lemna minor Common Duckweed
Rhopalosiphum nymphaeae

Lepidium virginicum Peppergrass
Aphis fabae
A. craccivora
Myzus persicae
Rhopalosiphum pseudobrassicae

Lettuce see **Lactuca**

Levisticum officinale Garden Lovage
Rhopalosiphum conii

Licorice, Wild see **Galium**

Ligusticum scothicum Scotch Lovage
Aphis fabae

Ligustrum vulgare European Privet
Myzus ligustri

Lilium sp. Lily
Macrosiphum lilii
Myzus solani

Lilium auratum Goldband Lily
Myzus circumflexus

Lilium canadense Canada Lily
Macrosiphum lilii

Lilium candidum Madonna Lily
Aphis gossypii

Lilium formosanus Formosa Lily
Macrosiphum lilii

Lilium longiflorum Easter Lily
Aphis gossypii
Macrosiphum euphorbiae
M. lilii
Myzus circumflexus
M. solani

Lilium philippense Philippine Lily
Macrosiphum lilii
Myzus circumflexus
M. solani

Lilium pumilum
Myzus circumflexus

Lilium regale Regal Lily
Macrosiphum lilii

Lilium speciosum Speciosum Lily
Aphis gossypii
Macrosiphum lilii
Myzus solani

Lilium superbum Turkscap Lily
Macrosiphum lilii

Lilium tigrinum Tiger Lily
Macrosiphum lilii

Lily see **Lilium**

Linden or Basswood see **Tilia**

Lion's Foot see **Prenanthes**

Liriodendron tilipifera Tulip Tree
Macrosiphum liriodendri

Liveforever see **Sedum**

Locust see **Robinia**

Lonicera sp. Honeysuckle
Rhopalosiphum conii
R. grabhami

Lonicera dioica
Rhopalosiphum conii

Lonicera japonica
Japanese Honeysuckle
Macrosiphum euphorbiae
Rhopalosiphum conii

Lonicera japonica var. **halliana**
Hall's Honeysuckle
Rhopalosiphum conii

Lonicera prolifera Grape Honeysuckle
Rhopalosiphum conii

Lonicera sempervirens
Trumpet Honeysuckle
Rhopalosiphum conii
(Drepanosiphum platanoides)

Lonicera tartarica
Tartarian Honeysuckle
Rhopalosiphum conii

Loosestrife see **Lysimachia**

Loosestrife, Fringed see **Steironema**

Loosestrife, Swamp see **Decodon**

Lotus see **Nelumbium**

Lotus sp. Birdsfoot Trefoil
Aphis craccivora

Lotus corniculatus Birdsfoot Trefoil
Macrosiphum pisi

Lovage, Garden see **Levisticum**

Lovage, Scotch see **Ligusticum**

Lupine see **Lupinus**

Lupinus sp. Lupine
Macrosiphum albifrons

Lupinus polyphyllus
Washington Lupine
Macrosiphum albifrons

Lychnis alba White Campion
Aphis sp.
Macrosiphum euphorbiae

Lycopersicon esculentum Tomato
Aphis gossypii
Macrosiphum euphorbiae
Myzus persiae
M. solani

Lycopus americanus
Water Horehound
Myzus sensoriatus

Lysimachia (Steironema) ciliata
Loosestrife
Aphis sp.

Lysimachia terrestris
Swamp Loosestrife
Thecabius sp.

Lythrum salicaria Purple Loosestrife
Myzus lythri

Lythrus odoratus Sweet Pea
Macrosiphum pisi
Trifidaphis radicicola

Magnolia acuminata Cucumber Tree
Macrosiphum liriodendri

Magnolia slavani Slavan Magnolia
Macrosiphum liriodendri

Magnolia soulangiana
Saucer Magnolia
Macrosiphum liriodendri

Mahonia sp.
Rhopalosiphum berberidis

Malus sp. Crabapple
Aphis pomi

Malus sp. Van Eseltine Crab
Aphis pomi

Malus baccata Siberian Crabapple
Aphis pomi

Malus coronaria Wild Sweet Crabapple
Aphis pomi
Eriosoma lanigerum

Malus floribunda Purple Chokeberry
Eriosoma lanigera

Malus ioensis var. **plena** Bechtel's Crab
Aphis pomi

Malus pumila Common Apple
Anuraphis bakeri
A. rosea
Aphis pomi
Eriosoma lanigerum
Rhopalosiphum fitchii

Malus sylvestris Apple
Aphis fabae

Malva rotundifolia
Chaitophorus sp.

Maple see **Acer**

Marigold, African see **Tagetes**

Marsh-Grass see **Spartina**

Martynia louisiana Devil's Claws
Aphis gossypii
Myzus persicae

Matthiola incana Common Stock
Brevicoryne brassicae
Myzus persicae

Matricaria chamomilla German Camomile
Macrosiphum sp.

Matricaria matricarioides (suaveolens)
Aphis fabae
Myzus persicae ?
M. solani ?

May Weed see **Anthemis**

Meadow Parsnip see **Thaspium**

Meadowrue see **Thalictrum**

Medic see **Medicago**

Medicago lupulina Black Medic
Macrosiphum pisi

Medicago sativa Alfalfa
Macrosiphum pisi

Medlar see **Mespilus**

Melilotus alba White Sweet Clover
Therioaphis riehmi

Mentha cardiaca
Ovatus crataegarius

Mentha crispa Curled Mint
Ovatus crataegarius

Mentha spicata Spearmint
Ovatus crataegarius

Mespilus germanica Medlar
Aphis pomi

Milkweed see **Asclepias**

Mint see **Mentha**

Mirabilis jalapa Common Four-o'clock
Aphis craccivora

Mockorange see **Philadelphus**

Monarda sp.
Capitophorus sp.

Monarda didyma Oswego Beebalm
Aphis monardae

Monarda fistulosa Wild Bergamot
Aphis monardae
Myzus monardae

Morning Glory see **Ipomoea**

Morning Glory, wild see **Convolvulus**

Mountain Ash see **Sorbus**

Muskmelon see **Cucumis**

Mustard see **Brassica**

Myosotis sp. Forgetmenot
Myzus circumflexus
M. persicae

Myosotis alpestris Alpine Forgetmenot
Myzus persicae

Myosotis laxa
Myzus sp.

Myrica cerifera Wax Myrtle
Cepegillettea myricae ?

Myrica gale Sweet Gale
Cepegillettea sp.

Nannyberry see **Viburnum**

Narcissus sp.
Macrosiphum euphorbiae
Myzus persicae

Nasturtium see **Tropaeolum**

Nasturtium officinale Watercress
Aphis sp.

Nelumbium (Nelumbo) lutea American Lotus
Rhopalosiphum nymphaeae

Nemesia strumosa
Aphis gossypii
Myzus persicae

Nemophila menziesi
Myzus persicae

Nepeta cataria Catnip
Aphis nasturtii

Nephrolepsis exaltata var. **bostonensis** Boston Fern
Idiopterus nephrelepidis

Nettle see **Urtica**

Nicotiana longiflora
Myzus persicae

Nicotiana tabacum Common Tobacco
Myzus persicae

Nightshade see **Solanum**

Ninebark see **Physocarpus**

Nuphar advena Cowlily
Rhopalosiphum nymphaeae

Nymphaea sp. Waterlily
Rhopalosiphum nymphaeae

Nymphaea odorata Pondlily
Rhopalosiphum nymphaeae

Nyssa sylvatica Tupelo
Aphis corcopsidis

Oak see **Quercus**

Oat see **Avena**

Oenothera sp. Evening Primrose
Aphis oenotherae
A. oestlundi
Prociphilus erigeronensis

Oenothera biennis Common Evening Primrose
Aphis cuonymi

Oenothera biennis—Cont'd
A. nasturtii
A. oenotherae
A. oestlundi
Macrosiphum cuphorbiae
M. pseudorosae

Oenothera pariflora var. **oakesiana**
Aphis oenotherae

Okra see **Hibiscus**

Onion see **Allium**

Onoclea sensibilis Sensitive Fern
Amphorophora laingi

Onopordum acanthium Scotch Thistle
Anuraphis cardui
Aphis fabae

Orchard Grass see **Dactylis**

Orchid sp.
Dactynotus luteus

Osier, Green see **Cornus**

Osmorhiza claytoni Sweet Jarvil
Aphis sp.
Cavariella aegopodii

Osmorhiza longistilis Anise Root
Cavariella aegopodii

Ostrich Fern see **Pteretis**

Oswego Beebalm see **Monarda**

Oxalis sp.
Myzus persicae

Oxalis cernua Buttercup Oxalis
Myzus persicae

Ox-eye see **Heliopsis**

Ox-eye Daisy see **Chrysanthemum**

Panicum sp. Witch Grass
Hyalopteroides humilis

Panicum cappilare Old Witch Grass
Rhopalosiphum maidis

Papaver orientalis Oriental Poppy
Aphis fabae

Papaver rhoeas Corn Poppy
Aphis fabae
A. gossypii

Parsley see **Petroselinum**

Parsnip see **Pastinaca**

Parthenocissus tricuspidata Virginia Creeper
Aphis folsomii

Pastinaca sativa Garden Parsnip
Cavariella capreae
C. theoboldi
Rhopalosiphum conii

Pastinaca sativa var. **sylvestris** Wild Parsnip
Aphis fabae
Cavariella pastinaceae
Rhopalosiphum conii

Pea see **Pisum**

Peach see **Prunus**

Pear see **Pyrus**

Pelargonium domesticum
Macrosiphum pelargonii

Pelargonium graveolens
Macrosiphum pelargonii

Pelargonium odoratissimum
Macrosiphum pelargonii

Pelargonium peltatum
Macrosiphum pelargonii

Pelargonium quercifolium
Macrosiphum pelargonii

Pelargonium radula
Macrosiphum pelargonii

Pennycress see **Thlaspi**

Pepper see **Capsicum**

Peppergrass see **Lepidium**

Periwinkle see **Vinca**

Petroselinum crispum Common Parsley
Cavariella theobaldi
Rhopalosiphum conii

Petunia sp.
Macrosiphum cuphorbiae

Petunia axillaris
Macrosiphum cuphorbiae
Myzus persicae

Petunia hybrida Common Petunia
Myzus persicae

Phaseolus sp. Bean
Aphis craccivora
Geoica radicola
Macrosiphum pisi
Trifidaphis radicicola

Phaseolus lunatus Lima Bean
Aphis fabae
A. craccivora

Phaseolus vulgaris Kidney Bean
Aphis fabae

Philadelphus sp. Mockorange
Aphis fabae

Philadelphus hirsutus var. **intermedius**
Aphis fabae

Philadelphus pubescens
Myzus persicae

Philadelphus pururescens
Myzus persicae

Phlox sp.
Aphis middletoni ?

Phragmites sp. Reed
Hyalopterus arundinis

Phragmites communis Common Reed
Hyalopterus arundinis

Physocarpus opulifolius Common Ninebark
Myzus physocarpi

Phytolacca americana Pokeweed
Aphis spiraecola

Picea abies (excelsa) Norway Spruce
Cinara costata
C. hyalina
C. palmerae
C. piceicola

Picea glauca White Spruce
Cinara pilicornis
Cinara pinicola

Picea pungens Colorado Spruce
Cinara palmerae ?

Pignut see **Carya**

Pigweed see **Amaranthus**
see **Chenopodium**

Pine see **Pinus**

Pin Cherry see **Prunus**

Pineappleweed see **Matricaria**

Pinus sp. Pine
Cinara carolina
C. pinivora
C. strobi
Eulachnus agilis

Pinus banksiana Jack or Scrub Pine
Cinara banksiana

Pinus nigra Austrian Pine
Cinara carolina
C. pini
Eulachnus rileyi

Pinus resinosa Red or Norway Pine
Cinara pini
Eulachnus rileyi
Schizolachnus pini-radiatae ?

Pinus rigida Pitch Pine
Cinara carolina
Essigella pini
Eulachnus rileyi

Pinus strobus White Pine
Cinara strobi

Pinus sylvestris Scotch Pine
Cinara sp.
C. pinea
C. watsoni
Eulachnus agilis
Mindarus abietinus

Pinus thunbergi Japanese Black Pine
Cinara pini

Pisum sativum Garden Pea
Macrosiphum pisi

Planetree see **Platanus**

Plantago lanceolata Ribgrass or
Narrow-leaved Plantain
Anuraphis rosea

Plantago major Common or
Broad-leaved Plantain
Anuraphis rosea

Plantain see **Plantago**

Platanus occidentalis American Planetree or Sycamore
Longistigma caryae

Platanus orientalis Oriental Planetree
Longistigma caryae

Plum see **Prunus**

Poison Ivy see **Rhus**

Pokeweed see **Phytolacca**

Polanisia graveolens
Stinking Clammyweed
Myzus persicae

Polianthes tuberosa Tuberose
Aphis fabae

Polygonum sp. Knotweed or
Smartweed
Capitophorus hippophoes
C. hippophoes subsp. *javanicus*
Forda occidentalis

Polygonum aviculare Knotweed
Aphis fabae

Polygonum convolvulus
Black Bindweed
Macrosiphoniella sp.

Polygonum cuspidatum
Japanese Knotweed
Aphis fabae

Polygonum pennsylvanicum Pinkweed
Capitophorus hippophoes

Polygonum persicaria Heart's-ease
Capitophorus braggii
C. hippophoes
C. hippophoes subsp. *javanicus*

Polygonum scandens
Macrosiphum euphorbiae

Pondlily see **Nymphaea**

Poplar see **Populus**

Poppy see **Papaver**

Populus sp. Poplar
Aphis maculatae
Chaitophorus stevensis
C. populicola
Mordwilkoja vagabunda
Pemphigus populicaulis
P. populitransversus
Pterocomma pseudopopulea

Populus canadensis var. **eugenii** Carolina Poplar
Chaitophorus populicola
Ch. stevensis
Mordwilkoja vagabunda
Pemphigus balsamiferae

Populus candicans Balm-of-Gilead Poplar
Chaitophorus populicola
Ch. stevensis
Pemphigus junctisensoriatus
P. populiglobuli
Thecabius populimonilis

Populus deltoides Carolina Poplar, Cottonwood
Chaitophorus populicola
Ch. stevensis
Pemphigus bursarius ?
P. populitransversus

Populus (balsamifera) deltoides var. **missouriensis** Balsam Poplar
Chaitophorus populicola
Pemphigus populimonilis
P. populivenae

Populus grandidentata Big-toothed Poplar
Chaitophorus populicola
Ch. stevensis
Ch. populifolii var. *simpsoni*
Pterocomma n.sp.
Pt. populifoliae

Populus heterophylla Swamp Poplar
Chaitophorus populellus ?

Populus nigra var. **italica** Lombardy Poplar
Pemphigus nortonii
P. populicaulis
P. populiglobuli
Pterocomma smithii

Populus tremuloides Aspen
Chaitophorus populicola
Ch. stevensis
Ch. populifolii var. *simpsoni*

Populus trichocarpa California Poplar
Pemphigus bursarius

Potato see **Solanum**

Potentilla norvegica var. **hirsuta**
Capitophorus thomasi

Potentilla recta Sulfur Cinquefoil
Macrosiphum euphorbiae
Myzus persicae

Pot Marigold see **Calendula**

Prenanthes (Nabalus) alba Rattlesnake Root
Dactynotus n.sp. No. 7

Prenanthes (Nabalus) trifoliata Lion's Foot
Amphorophora nabali
Dactynotus sp.

Primrose see **Primula**

Primula japonica Japanese Primrose
Prociphilus erigeronensis

Prince's Feather see **Amaranthus**

Privet see **Ligustrum**

Proboscidea jussievi see **Martynia**

Prune see **Prunus**

Prunus sp. Cherry
Aphis fabae
Myzus cerasi

Prunus avium Sweet Cherry
Aphis sp.
Hyalopterus arundinis
Myzus cerasi
M. lythri ?
M. persicae
Phorodon humuli

Prunus cerasus Sour Cherry
Myzus cerasi
M. persicae

Prunus domestica Plum, Prune
Anuraphis cardui
Aphis gossypii ?
Hyalopterus arundinis
Myzus persicae
Rhopalosiphum padi

Prunus hortulana Hortulana Plum
Hyalopterus arundinis

Prunus mahaleb Mahaleb Cherry
Myzus lythri

Prunus pennsylvanica Pin Cherry
Myzus cerasi

Prunus persica Peach
Anuraphis persicaeniger
Myzus persicae

Prunus sieboldii Siebold Cherry
Hyalopterus arundinis
Myzus persicae

Prunus serotina Black Cherry
Aphis feminca
Myzus persicae

Prunus virginiana Common Chokecherry
Aphis cerasifoliae
Asaphonaphis pruni
Myzus persicae

Prunus yedoensis Yoshina Cherry
Hysteroneura setariae
Myzus persicae

Ptelea trifoliata Common Hoptree
Aphis sp.

Pteretis nodulosa Ostrich Fern
Amphorophora laingi

Pteridium latiusculum Eastern Brake Fern
Macrosiphum ptericolens

Pteris sp. Bracken
Idiopterus nephrelepidis

Pumpkin see **Cucurbita**

Pussytoes see **Antennaria**

Pyrrhopappus carolinianus False Dandelion
Dactynotus rudbeckiae ?

Pyrus communis Pear
Aphis gossypii
A. pomi
Dactynotus ambrosiae
Myzus persicae

Quackgrass see **Agropyron**

Quercus sp. Oak
Lachnus sp.
Myzocallis (Tuberculoides) sp.
M. alhambra
M. bella
M. granovskyi
M. melanocera
M. punctata
M. spinosa
Neosymydobius albasiphus
Stegophylla sp.
S. quercicola

Quercus alba White Oak
Hoplochaitophorus quercicola
Myzocallis alhambra
M. discolor
M. punctatellus
Stegophylla quercicola

Quercus bicolor Swamp White Oak
Hyplochaitophorus quercicola
Myzocallis (Tuberculoides) sp.
M. alhambra

Quercus borealis Northern Red Oak
Myzocallis bella
M. melanocera
M. walshii

Quercus coccinea Scarlet Oak
Myzocallis alhambra
M. bella
M. melanocera
M. walshii
Stegophylla quercicola

Quercus falcata Southern Red Oak
Anaccia querci
Myzocallis bella ?
M. walshii ?
Stegophylla quercicola
Tamalia sp.

Quercus ilicifolia Scrub Oak
Myzocallis spinosa
M. walshii

Quercus macrocarpa Bur Oak
Myzocallis alhambra

Quercus marilandica Blackjack Oak
Myzocallis discolor

Quercus palustris Pin Oak
Longistigma caryae

Quercus palustris—Cont'd
Myzocallis frisoni
M. walshii ?
Stegophylla sp.

Quercus prinus Swamp Chestnut Oak
Monellia discolor
Neosymydobius sp.

Quercus robur English Oak
Myzocallis annulata

Quercus rubra see **Q. falcata**
Q. borealis

Quercus stellata Post Oak
Myzocallis discolor
M. punctata

Quercus velutina Black Oak
Myzocallis alhambra
M. punctata
M. walshii
Stegophylla quercicola

Quickweed see **Galinsoga**

Quince see **Cydonia**

Quince, Japanese Flowering
see **Chaenomeles**

Radish see **Raphanus**

Ragweed see **Ambrosia**

Ranunculus sp. Buttercup
Myzus persicae

Ranunculus asiaticus
Persian Buttercup
Myzus persicae

Ranunculus repens
Macrosiphum sp.
Thecabius populiconduplifolius ?

Rape see **Brassica**

Raphanus raphanistrum Wild Radish
Brevicoryne brassicae
Myzus persicae
Rhopalosiphum pseudobrassicae

Raphanus sativus Garden Radish
Aphis gossypii
Brevicoryne brassicae
Myzus persicae
Rhopalosiphum pseudobrassicae

Raspberry see **Rubus**

Rattlesnake Root see **Prenanthes**

Redpepper or Bellpepper
see **Capsicum**

Reed see **Phragmites**

Reedgrass see **Calamagrostis**

Rhamnus cathartica Buckthorn
Aphis nasturtii

Rheum rhaponticum Garden Rhubarb
Aphis fabae
Macrosiphum euphorbiae
Myzus persicae
Prociphilus sp.

Rhododendron micranthum
Amphorophora sp.

Rhododendron nudiflorum var. **roseum**
Masonaphis rhokalaza

Rhubarb see **Rheum**

Rhus sp. Sumac
Melaphis rhois
Rhopalosiphum rhois

Rhus aromatica Fragrant Sumac
Rhopalosiphum rhois

Rhus copallina Dwarf Sumac
Rhopalosiphum rhois

Rhus glabra Smooth Sumac
Melaphis rhois
Rhopalosiphum rhois

Rhus toxicodendron Poison Ivy
Rhopalosiphum rhois ?
Rh. n.sp.

Rhus typhina Staghorn Sumac
Melaphis rhois
Rhopalosiphum rhois

Ribes sp. Currant
Amphorophora sonchi
Capitophorus ribis
Kakimia sp.

Ribes dowingianum
(hirtellum × reclinatum)
Poorman Gooseberry
Amphorophora sonchi

Ribes hirtellum Hairystem Gooseberry
Amphorophora sonchi
Kakimia cynosbati
Nasonovia ribisnigri

Ribes nibrum Black Currant, Cult.
Amphorophora ribicola
Aphis varians

Ribes rotundifolium Roundleaf Gooseberry
Kakimia houghtonensis

Ribes sativum Common Red Currant
Amphorophora sonchi
Capitophorus ribis

Rib Grass see **Plantago**

Richweed see **Collinsonia**

Ricinus communis Castorbean
Myzus persicae

Robinia pseudaccacia Black Locust
Aphis craccivora

Robinia viscosa Clammy Locust
Aphis craccivora

Rosa sp. Rose
Macrosiphum dirhodum
M. pseudodirhodum
M. rosae
Myzus circumflexus
M. persicae
M. porosus
Pentatrichopus fragaefolii
Pergandeidia trirhoda

Rosa sp. Hybrid Tea
Macrosiphum rosae

Rosa sp. Moss Rose
Macrosiphum rosae

Rosa hugonis Father Hugo Rose
Macrosiphum rosae

Rosemallow see **Hibiscus**

Rosemary see **Rosemarinus**

Rose-of-Sharon see **Hibiscus**

Rosmarinus officinalis Rosemary
Macrosiphum sp.

Rubus spp. Cultivated Blackberry
Aphis rubifolii
Cerosipha rubifolii

Rubus sp. Wild Blackberry
Macrosiphum sp.

Rubus spp. Cultivated Raspberry
Aphis rubicola
A. rubifolii

Rubus argutus A Blackberry
Aphis rubifolii

Rubus frondosus Yankee Blackberry
Aphis rubifolii

Rubus idaeus Red Raspberry
Aphis rubicola

Rubus idaeus var. **strigosus** American Red Raspberry
Amphorophora rubi
A. sensoriata
Aphis rubicola
Masonaphis rubicola

Rubus laciniatus Cut-leaved Blackberry
Aphis rubifolii

Rubus occidentalis Blackcap Raspberry
Amphorophora rubi
Aphis rubicola
A. rubifolii
Masonaphis rubicola

Rubus phoenicolasius Wineberry
Amphorophora rubi ?

Rudbeckia (serotina) hirta Blackeyed Susan
Dactynotus ambrosiae
D. rudbeckiae ?

Rudbeckia laciniata Goldenglow
Dactynotus ambrosiae
D. rudbeckiae

Rumex sp. Dock
Aphis rumexicolens
A. rumicis

Rumex acetosella Sheep-sorrel
Aphis rumicis

Rumex crispus Curled Dock
Aphis rumicis
Myzus persicae
Pemphigus brevicornis

Rumex obtusifolius Broad-leaved Dock
Aphis armoraciae
A. fabae
A. rumicis
Myzus persicae

Rumex verticillatus Swamp Dock
Aphis sp.
A. fabae

Russian Olive see **Elaeagnus**

Rutabaga see **Brassica**

Rye see **Secale**

Saccharum officinarum Sugarcane
Sipha flava

Saintpaulia ionantha African Violet
Myzus persicae

Salix sp. Willow
Aphis salicti
Cavariella aegopodii
Chaitophorus viminalis
Lachnus salignus
Macrosiphum californicum
Pterocomma n.sp.
Pt. salicis
Pt. salicti

Salix alba White Willow
Chaitophorus viminalis
Pterocomma smithiae

Salix babylonica Weeping Willow
Chaitophorus viminalis
Lachnus salignus
Pterocomma bicolor
Pt. smithiae

Salix blanda Wisconsin Weeping Willow
Pterocomma smithiae

Salix caprea Goat Willow
Macrosiphum californicum

Salix cordata Hartleaf Willow
Chaitophorus saliciniger ?
Ch. viminalis
Pterocomma bicolor
Pt. salicis

Salix discolor Pussy Willow
Chaitophorus viminalis

Salix (incana) elaeagnus Elaeagnus Willow
Lachnus salignus

Salix fragilis Brittle Willow
Clavigerus smithii

Salix humilis Prairie Willow
Aphis salicti

Salix incana
Lachnus salignus

Salix matsudana var. **tortuosa** Dragonclaw Willow
Lachnus saligna

Salix nigra Black Willow
Chaitophorus viminalis

Salix purpurea Basket Willow
Chaitophorus viminalis

Salix viminalis Osier
Chaitophorus viminalis

Sambucus canadensis American Elder
Aphis fabae
A. sambucifoliae
A. sanborni

Sambucus racemosa European Red Elder
Aphis sambucifoliae

Sanicula canadensis Black Snake-Root
Aphis sp.

Scirpus sylvaticus Woodland Bulrush
Thripsaphis balli

Scotch Thistle see **Onopordum**

Sea Myrtle see **Baccharis**

Secale cereale Rye
Macrosiphum granarium
Rhopalosiphum fitchii
R. maidis

Sedum hispaninicum Spanish Stonecrop
Aphis sedi

Sedum (triphyllum) telephium purpureum Liveforever
Aphis sedi

Senecio cineraria Silver Groundsel
Myzus circumflexus

Senecio cruentus Common Cineraria
Aphis gossypii
Dactynotus ambrosiae ?
Macrosiphum euphorbiae
Myzus persicae

Senecio mikanioides German Ivy
Aphis gossypii
Myzus persicae

Senecio pauperculus
Dactynotus ambrosiae

Senecio vulgaris Common Groundsel
Aphis sp.

Sensitive Fern see **Onoclea**

Setaria faberii Foxtail
Rhopalosiphum maidis

Setaria glauca Bristly Foxtail
Sipha flava
Rhopalosiphum maidis

Shadbush see **Amelanchier**

Shasta Daisy see **Chrysanthemum**

Sheep-sorrell see **Rumex**

Shepard's Purse see **Capsella**

Shepherdia argentea Buffalo Berry
Capitophorus sp.

Silene noctiflora Night-flowering Silene
Dactynotus rudbeckiae

Sisymbrium officinale Hedge Mustard
Aphis sp.
Myzus persicae
Rhopalosiphum pseudobrassicae

Sium (cicutifolium) suave Water Parsnip
Aphis fabae
Cavariella sp.

Smartweed see **Polygonum**

Smilax herbacea Carrion Flower
Neoprociphilus attenuatus

Smoke Tree see **Cotinus**

Snakeroot, White see **Eupatorium**

Snapdragon see **Antirrhinum**

Snowball Tree see **Viburnum**

Sobralia macrantha
Cerataphis lataniae

Solanum carolinense Horse-nettle
Myzus solani ?

Solanum dulcamara Bitter Nightshade
Myzus persicae

Solanum melongena Eggplant
Macrosiphum euphorbiae
Myzus persicae

Solanum pseudocapsicum Jerusalem Cherry
Macrosiphum euphorbiae
Myzus persicae

Solanum tuberosum Potato
Aphis gossypii ?
Geoica radicicola
Macrosiphum euphorbiae
Myzus persicae
M. solani
Trifidaphis radicicola

Solidago sp. Goldenrod
Aphis gossypii
A. solidaginifoliae
Dactynotus n.sp. No. 5
D. ambrosiae
D. chrysanthemi
D. erigeronensis
D. gravicornis
D. luteola
D. rudbeckiae
D. tissoti

Solidago altissima Tall Goldenrod
Dactynotus n.sp. No. 5
D. ambrosiae ?
D. tissoti
Rhopalosiphum serotinae

Solidago arguta
Dactynotus n.sp. No. 5

Solidago aspera
Dactynotus n.sp. No. 5

Solidago canadensis
Dactynotus ambrosiae ?
D. n.sp. No. 5
D. n.sp. No.7

Solidago canadensis var. **hargeri**
Dactynotus ambrosiae ?

Solidago (serotina) gigantea leiophylla
Dactynotus ambrosiae ?
D. rudbeckiae ?

Solidago graminifolia
Rhopalosiphum asterensis

Solidago juncea
Dactynotus gravicornis
D. tissoti

Solidago memoralis
Dactynotus ambrosiae

Solidago odora
Dactynotus sp.
D. rudbeckiae ?

Solidago puberula
Dactynotus sp. ?

Solidago rugosa
Dactynotus n.sp. No. 5
D. tissoti
Rhopalosiphum serotinae

Solidago rugosa var. **aspera**
Rhopalosiphum serotinae

Solidago sempervirens Seaside Goldenrod
Dactynota ambrosiae

Solidago uliginosa Bog Goldenrod
Rhopalosiphum serotinae

Sonchus arvensis Sowthistle
Amphorophora sonchi
Dactynotus ambrosiae ?
Myzus persicae

Sonchus asper Spiny Sowthistle
Amphorophora sonchi

Sonchus oleraceus Common Sowthistle
Amphorophora sonchi
Dactynotus n.sp. No. 7

Sorbus americana American Mountain Ash
Aphis pomi

Sorbus aucuparia European Mountain Ash
Aphis pomi

Sorghum a cult. var.
Amphorophora sp.

Sorghum vulgare
Rhopalosiphum maidis

Sorrel see **Rumex**

Sourgum see **Nyssa**

Sowthistle see **Sonchus**

Sparaxis grandiflora Wandflower
Myzus circumflexus

Spartina sp. Marsh-grass
Hyalopterus arundinis

Spearmint see **Mentha**

Speedwell see **Veronica**

Spinach see **Spinacia**

Spinacia oleracea Spinach
Macrosiphum euphorbiae
Myzus persicae

Spindle Tree see **Euonymus**

Spiraea bumalda var. **Anthony Waterer**
Aphis spiraecola

Spiraea japonica Japanese Spiraea
Aphis spiraecola

Spiraea latifolia
Macrosiphum sp. (near *M. pseudodirhodum*)

Spiraea prunifolia Bridalwreath Spiraea
Aphis spiraecola

Spiraea vanhouttei Vanhoutte Spiraea
Aphis spiraecola

Spruce see **Picea**

Squash see **Curcubita**

St. Johnswort see **Hypericum**

Star Thistle see **Centaurea**

Steironema ciliatum Fringed Loosestrife
Aphis sp.

Stellaria sp. Chickweed
Myzus persicae

Stellaria media Common Chickweed
Myzus persicae

Stinking Clammyweed see **Polanisia**

Stock see **Matthiola**

Stonecrop see **Sedum**

Strawberry see **Fragaria**

Strawberry-bush see **Euonymus**

Strawflower see **Helichrysum**

Sugarcane see **Saccharum**

Sumac see **Rhus**

Sunflower see **Helianthus**

Sweetfern see **Comptonia**

Sweetflag see **Acorus**

Sweet Jarvil see **Osmorhiza**

Sweet Pea see **Lathyrus**

Sweet Potato see **Ipomoea**

Swiss Chard see **Beta**

Sycamore see **Platanus**

Symphoricarpos (racemosus) albus Common Snowberry
Rhopalosiphum conii

Tagetes erecta African Marigold
Geoica lucifuga ?
Dactynotus ambrosiae

Tanacetum vulgare Tansy
Macrosiphoniella tanecetaria
M. ludovicianae

Tansy see **Tanacetum**

Taraxacum sp. Dandelion
Macrosiphum taraxaci

Taraxacum officinale Common Dandelion
Macrosiphum taraxici

Teasel see **Dipsacus**

Teosinte see **Euchlena**

Thalictrum polyganum Tall Meadowrue
Kakimia purpurascens

Thalictrum revolutum Purple Meadowrue
Aphis craccivora
Kakimia purpurascens

Thaspium (aureum) trifoliatum Meadow Parsnip
Rhopalosiphum conii

Thistle see **Cirsium**

Thlaspi arvense Pennycress
Brevicoryne brassicae

Thoroughwort see **Eupatorium**

Thuja orientalis Oriental Arborvitae
Cinara sp.

Tick Trefoil see **Desmodium**

Tilia sp. Linden, Basswood
Myzocallis tiliae

Tilia americana American Linden
Macrosiphum tiliae
Myzocallis tiliae

Tilia cordata Littleleaf Linden
Myzocallis tiliae

Tilia europea European Linden
Longistigma caryae
Myzocallis tiliae

Tithonia sp.
Geoica lucifuga ?

Tithonia (tagetiflora) rotundifolia Scarlet Tithonia
Aphis fabae ?

Tobacco see **Nicotiana**

Tomato see **Lycopersicon**

Tradescantia fluminensis Wandering Jew
Myzus circumflexus

Tragopogon porrifolius Vegetable-oyster
Geoica lucifuga ?

Trifolium sp. Clover
Therioaphis trifolii

Trifolium arvense Rabbit's-foot Clover
Therioaphis trifolii

Trifolium hybrida Alsike Clover
Anuraphis bakeri
Macrosiphum pisi

Trifolium incarnatum var. **elatius** Crimson Clover
Macrosiphum pisi

Trifolium medium Zigzag Clover
Macrosiphum pisi

Trifolium officinale Yellow Sweet Clover
Anuraphis maidiradicis

Trifolium pratense Red Clover
Anuraphis bakeri
Aphis craccivora
Macrosiphum euphorbiae
M. pisi
Myzus persicae
Therioaphis trifolii

Trifolium repens White Clover
Macrosiphum pisi
Therioaphis trifolii

Triticum aestivum Wheat
Geoica squamosa
Macrosiphum granarium
Rhopalosiphum fitchii
R. padi

Tropaeolum majus Nasturtium
Aphis fabae
Myzus persicae

Trumpetcreeper see **Campsis**

Tuberose see **Polianthes**

Tulipa sp. Tulip
Aphis fabae
A. spiraecola
Macrosiphum euphorbiae
M. rosae
Myzus circumflexus
M. persicae
Rhopalosiphoninus staphyleae

Tulip Tree see **Liriodendron**

Tupelo see **Nyssa**

Turnip see **Brassica**

Typha angustifolia Narrowleaf Cattail
Rhopalosiphum enigmae

Typha latifolia Common Cattail
Rhopalosiphum enigmae
R. nymphaeae

Ulmus sp. Elm
Colopha ulmicola
Eriosoma lanigerum
E. lanuginosa
E. rileyi
Myzocallis ulmifolii

Ulmus sp. certain English Elms
Eriosoma lanigerum
E. ulmi

Ulmus americana American Elm
Colopha ulmicola
Eriosoma americana
E. lanigerum
E. ulmi
Myzocallis ulmifolii

Ulmus fulva Slippery Elm
Georgiaphis ulmi
Gobaishia ulmifusa

Ulmus (montana) glabra Scotch Elm
Colopha ulmisacculi

Ulmus thomasi Rock Elm
Georgiaphis ulmi
Myzocallis ulmifolii

Urtica gracilis Stinging Nettle
Macrosiphum sibiricum

Vaccinium sp. Blueberry
Masonaphis (Ericobium) pepperi

Vaccinium atrococcum Downy Blueberry
Masonaphis (Ericobium) azaleae

Valeriana sp. Valerian
Aphis fabae

Valeriana officinalis
Aphis gossypii ?

Vegetable-oyster see **Tragopogon**

Veratrum viride
American False Hellebore
Aphis sp. (near *coweni*)

Verbena sp.
Aphis gossypii
Pemphigus brevicornis

Verbena hybrida Garden Verbena
Aphis gossypii
Myzus solani

Vernonia sp. Ironweed
Dactynotus ambrosiae

Vernonia noveboracensis
New York Ironweed
Dactynotus rudbeckiae ?

Veronica sp. Speedwell
Dactynotus ambrosiae ?

Veronica longifolia Speedwell
Aphis sp.

Vetch see **Vicia**

Viburnum sp.
Anuraphis viburnicola

Viburnum acerifolium
Mapleleaf Viburnum
Anuraphis viburnicola
A. viburniphila

Viburnum dentatum
Arrowwood Viburnum
Anuraphis viburnicola
A. viburniphila

Viburnum lentago Nannyberry
Anuraphis viburnicola
Aphis fabae

Viburnum opulus
European Cranberrybush
or Snowball Tree
Anuraphis viburnicola
A. viburniphila
Aphis fabae

Viburnum opulus var. **americanum**
American Cranberrybush
Anuraphis viburnicola
Aphis fabae

Viburnum (tomentosum) plicatum
Anuraphis viburnicola
Aphis fabae

Viburnum recognitum Arrow-wood
Anuraphis viburnicola

Vicia sp. Vetch
Macrosiphum pisi

Vinca sp. Periwinkle
Myzus persicae

Vinca major var. **variegata**
Mottled Periwinkle
Myzus circumflexus
M. persicae

Viola odorata Violet
Micromyzus violae

Violet see **Viola**

Virginia Creeper see **Parthenocissus**

Vitis sp. Grape
Aphis illinoisensis

Vitis aestivalis Summer Grape
Aphis illinoisensis

Vitis labrusca Fox Grape
Aphis illinoisensis

Wahoo, Eastern see **Euonymus**

Walnut see **Juglans**

Wandering Jew see **Tradescantia**

Wandflower see **Sparaxis**

Washingtonia see **Osmorhiza**

Watercress see **Nasturtium**

Water Hemlock see **Cicuta**

Water Hemlock or Parsnip see **Sium**

Water Horehound see **Lycopus**

Waterlily see **Nymphaea**

Watermelon see **Citrullus**

Waterwillow see **Decodon**

Wax Myrtle see **Myrica**
Wheat see **Triticum**
White Sweet Clover see **Melilotus**
Wild Indigo see **Baptisia**
Willow see **Salix**
Willowweed see **Epilobium**
Wineberry see **Rubus**
Witch Grass see **Panicum**
Witchhazel see **Hamamelis**
Wormwood **Artemesia**

Xanthium (canadense) orientalis Oriental Cocklebur
Dactynotus rudbeckiae ?

Yarrow see **Achillea**
Yellow Chamomile see **Anthemis**

Yucca filamentosa Adamsneedle Yucca
Aphis fabae
Macrosiphum euphorbiae
Myzus persicae

Zantedeschia aethiopica Callalily
Myzus circumflexus

Zanthoxylum (clavi-herculis) americanum Hercules Club
Aphis spiraecola

Zea mays Corn
Macrosiphum granarium
Rhopalosiphum maidis

Zigzag Clover see **Trifolium**

Zinnia elegans Common Zinnia
Macrosiphum euphorbiae

Fred Raetz

F.R.A.S.

Many will mourn the departure from this life of Fred Raetz on Wednesday morning, August 22, 1962. Quietly he lived and as quietly passed away, leaving an emptiness which cannot be filled by another.

Master mechanic, machinist par excellence and automobile repair-man of whom it could be said: "When you leave your car with him, you know it will be taken care of." Fred operated his garage and machine shop for more years than most of us can remember. A host of drivers would take their cars to no one else, if Fred were available for consultation and work. For him, putting a car into good running order was an art and one to which he was truly dedicated.

Dedicated he was, too, to the youth of our community, for he served as scoutmaster of Troop 60 of Salem Church for 40 years. Fred was a woodsman and his knowledge of woodcraft has been passed along to more boys than most of us have ever known.

The out-of-doors was Fred's temple. He knew it, he loved it, he pined when illness or foul weather kept him indoors too long. Dean of natural historians of the Rochester area, he possessed great knowledge and love of both birds and plants, and, to be sure, of all living creatures. His study of birds and their habits was deep.

No detail of tree or wildflower structure was too small to escape Fred's keen observation and to give him pleasure and delight in the complexity, orderliness and beauty of the plants he so deeply revered. There was always a pot of something he was saving from destruction and wanted to watch, set on the garage floor under the skylight or at the edge of his work bench nearest the solitary window.

One of his most appealing hobbies was the carving, from special bits of wood which he collected, of replicas of birds, with which he was so well acquainted. He painted the model, once completed to his satisfaction, and mounted it, usually on a dead branch of the kind of tree or shrub where it would be found in the field.

To visit with Fred was to experience refreshment of mind and spirit. He never hurried, he maintained a most enviable and admirable calm in his speech, his movements and his life. Of late he had been making a garden of our native ferns at the Burroughs-Audubon Nature Sanctuary—this will be among his countless memorials.

B. B. C.

CITATIONS IN THE ROCHESTER ACADEMY OF SCIENCE

1961

HELEN DAKIN

Fellow

The Rochester Academy of Science not only encourages and publishes the work of scientists, but also gives the layman a chance to maintain an interest in science. The activities of this candidate illustrate how the Academy guides such interest. Nature's cycles are stimulating to one who notices them. Yet the slow precision of the stars or the fluttering excitement of the warbler migration are much more meaningful when knowledge supports observation, and more satisfying when enjoyed with a group. Our candidate both participates in such activities and helps others to do the same.

She is active in the Ornithology, Astronomy and Mineral Sections and has been secretary for the first two. For the past three years she has been the Editor of the Monthly Bulletin of the Academy. Many hours of work are required to keep our Members informed of activities and highlights in the yearly program. Somehow she finds time to build up a collection of nature photographs, with birds and insects her forte.

For her exemplary enthusiasm and ready service we are happy to confer the honor of Fellow upon Helen Dakin.

JOEL T. JOHNSON

Fellow

It is fitting that an engineer should be interested in mechanics, geometry and hydraulics. But one might wonder why an electrical engineer should be concerned with these branches of applied science. It becomes clear when it is noted that our candidate applies his knowledge of electrical phenomena in his profession and of the others in his recreation. The elegant convolutions of the stars present a year-round mechanical spectacle. The precise arrangement of crystals hold a fascination that has beauty and geometry. The surge of sap each Spring unfolds intricate forms from the lifeless earth. Thus it is understandable why the activities of the Astronomy, Mineral and Botany Sections should attract him.

Testifying to his conviction that worthwhile recreation in science ought to be encouraged was his leadership as President of the Academy during the 1959 and 1960 seasons. He has been particularly vigorous in connection with our relationship with science students. He is past Chairman

of the Astronomy Section. He initiated, through his editorship, the Monthly Bulletin in its present informative style.

For his long and active service and his discerning leadership we are proud to welcome as a Fellow, Joel Johnson.

STEPHEN C. WEBER

Fellow

The Rochester Academy of Science serves a double function. It provides activities for its Members and service to the community. This latter phase is seldom so evident as it is in the work of our candidate. His Academy interests are indicated by past Chairmanship of the Astronomy Section and his current leadership of the Botany Section. His interest in our community becomes apparent from a summary of his contacts with it.

He has presented many public slide lectures, especially to young people in YMCA, church and Scout groups. He is an instructor in astronomy for the first organization. He has been a leader in the science seminars of Mercy High School—girls as well as boys have a keen interest in science. He has helped to judge the numerous entries in student science fairs. Because of the varied nature of these amazingly mature exhibits, a wide knowledge is a necessary safeguard against being unfavorably judged *by* the students.

He is a keen nature photographer, being particularly adept at photographing flowers. This activity provides him with many illustrations so that his lectures instill a love for sciences as well as skill.

For his services to the Academy and to our future scientists we are honored to extend our Fellowship to Stephen Weber.

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