Friday, August 17th, 1883.

The Club met at the call of the President at 2 p.m., in the room in the University assigned to the use of Section F.

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Prof. Osborn presented a paper on the Phytoptera, a group of insects formerly regarded as the larvæ of mites, the individuals of which are so small as to be invisible to the unaided eye. Reference was made to one form found on the soft maple, which occurs as a small swelling on the upper surface of the leaves, containing sometimes a number of these insects, at other times only two or three. One species affects the ash, occurring on both the upper and lower sides of the leaves, one occurs on elm and one on box elder, that on the last named tree having a woolly structure beneath the surface. This paper was illustrated by a very interesting series of carefully mounted microscopic specimens.

Prof. Riley remarked that the species which occur in Europe had been well worked up there, and that in studying our species the work already done on this group should be carefully examined, so as to avoid the making of synonyms. He considered that the hybernating habits of these mites was one of the most interesting discoveries which had been made in reference to them, and he hoped that the attention of investigators would be especially turned to this point. He referred also to additional species which occur on. the plum, cherry and linden.

Mr. Osborn said that the Phytoptis on plum was not common in the neighbourhood of Ames, although he had found it occasionally; that on the maple is particularly abundant.

Mr. Saunders referred to the unusual amount of black knot seen in Ontario this year, especially on the common red cherry trees, and stated that he had scarcely seen a specimen of this fungus on the cherry which had not one or more specimens of the plum curculio feeding on the interior.

Mr. Riley remarked that the black knot had been very common of late all through the northern portions of New England.

Mr. Kellicott had observed it as very common in western New York, and had also noticed that a large proportion contained larvæ.

Mr. Osborn stated that he had observed the larvæ of *Gortyna nitela* boring in young twigs of ash, and had noticed many dead twigs from this cause. He had failed to rear the imago from them on account of parasites; he had also observed the same species feeding externally upon the leaves of the common plantain.

Miss Murtfeldt had found the same insect in twigs of the maple, Acer dasycarpum.

Prof. Riley stated that it had occurred also in peach twigs and in the stalks of wheat; also in *Ambrosia artemisifolia*, where it enters from the sides.

Prof. D. S. Kellicott offered the following notes on three lepidopterous stem-borers. First, Arzame obliguata.—Prof. Riley has referred to the habits of this species at a previous session of the Club, and I shall refer only to a few points. As I said yesterday, I feel sure that in Buffalo, N.Y., it is single-brooded. The eggs I have not found, but the recently hatched larvæ I have found feeding upon the flowers about the 12th of June. It occurs in Typha latifolia, rarely in Sparganum. I have not found it in Sagittaria or Nuphar. Mr. Riley has referred to the large posterior pair of spiracles placed dorsally. On account of this structure it may remain a long time swimming at the surface. I have had these larvæ confined in a pail of water for five or six hours without apparent injury. When removed from their galleries and dropped into the water, they sink to the bottom and remain there for a considerable time; then rising to the surface, they swim about with a snake-line motion. In the autumn they leave their food plants and bury themselves in the earth, or crawl into old wood, etc. They pupate in May.

Second.—The second larva is that of a Nonagria, which I have called Nonagria subcarnea. This species is also single-brooded; the larvæ are found boring the stems of Typha early in the summer, forming galleries in the stems; it may be readily distinguished from those of A. obliquata by the lighter colour, often carneous, and by the fact that the last pair of spiracles is not sub-dorsal. I have found it rarely in Scirpus. It appears not to be so nearly aquatic, and probably does not pass from one plant to another through the water, or mud. When the time comes for pupation it prepares a

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Mr. Rile greatly intere gria. As to thought it mi ence occurred but in the fen between the p indicated ende lepidoptera, a philosophical (clypeal point imago, the puj Prodoxus deci of the stem ar head. In som open, the pups pupa did the digoneutic nat illustrated by Some spec that in Dakota The meeti versation, and

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