

terior end, and the posterior margin of the last segment bears a close series of fine hairs. The general body color is yellowish brown. The male is shorter and stouter than the female and lacks the series of hairs on the posterior margin of the last segment. This species occurs commonly and often abundantly in company with *M. pallidum*. It can readily be distinguished from the latter by its larger size and less compact form. It has been recorded in America also from the turkey and pigeon, and is said to attack the pea fowl.

THE VARIABLE CHICKEN LOUSE  
(*Lipeurus variabilis* N.)

The length of this species is about .09 to .095 inches. The body of the female is elongate and slender. The head is broadly rounded in front and the antennæ are slender with the first joint short. The legs are long and the abdomen tapers weakly from the sixth segment. The color is whitish, the margins of the body and front margins of the legs being pitchy black. The abdominal segments each bear a large squarish median brown patch. The male is more slender than the female and the first joint of the antenna is very large,

and bears a peg-like appendage as does also the third segment.

This species is quite common and can usually be found on any heavily infested flock.

THE LESSER CHICKEN LOUSE.  
(*Goniocotes hologaster* N.)

The length of this species is about .035 to .06 inches. The body of the female is very broad. The head is squared behind, the legs short and the abdomen regularly rounded behind. The color is light yellowish brown. The abdomen of the male is much shorter and broader and squared behind.

This species is not common in Canada, though I have specimens taken at Guelph at various times. It has been recorded in the United States and I have received specimens from Prof. Haseman taken at Columbia, Mo.

EXPLANATION OF PLATE.

1. *Goniocotes hologaster* N. ♂
2. *Goniocotes hologaster* N. ♀
3. *Menopon biseriatum* Piaget.
4. Egg of a Bird Louse.
5. *Menopon pallidum* N.
6. *Lipeurus variabilis* N. ♀
7. *Lipeurus variabilis* N. ♂

## Alfalfa: Premier of Crops

By Thos. Cooper, '18.

AGRICULTURE, within the last few years in Canada, has been gradually changing from grain to stock farming. Owing to the increasing value of land, the decreasing fertility of the soil and the high prices prevailing for live stock, grain farming has become unprofitable. Mixed farming is giving way to specialized agriculture. With this change has come a demand for special forage crops by those who are

specializing in beef and milk production. Such a crop is found in Alfalfa.

### HISTORY.

Alfalfa has been cultivated for twenty-five hundred years. It is a habitant of central Asia. When the Persians invaded Greece in 490 B. C. it was known. The Romans carried the plant from Greece after conquering that empire in 146 B. C. Spain was the next to be benefitted by this crop. But