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THE GLADIOLUS THRIPS, *TAENEOTHRIPS SIMPLEX* (MORISON), IN FLORIDA (THYSANOPTERA: THRIPIDAE)[1]

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INTRODUCTION: THE GLADIOLUS THRIPS WAS DESCRIBED BY MORISON AS *PHYSOTHRIPS SIMPLEX* IN 1930 FROM FIVE FEMALE SPECIMENS COLLECTED ON CARNATION FLOWERS FROM URRBRAE, SOUTH AUSTRALIA. THE HOLOTYPE AND ONE PARATYPE ARE DEPOSITED IN THE BRITISH MUSEUM. IN 1931, MOULTON AND STEINWEDEN DESCRIBED THIS THRIPS UNDER THE NAME *TAENIOTHRIPS GLADIOLI* FROM ONTARIO, CANADA, AND IT WAS SYNONYMIZED BY STEELE (1935). KELLIE O'NEILL OF THE U. S. NATIONAL MUSEUM HAS SUGGESTED THAT THIS THRIPS PROBABLY ORIGINATED IN AFRICA AS DID ITS PREFERRED HOST GLADIOLUS.

DISTRIBUTION: THIS THRIPS IS WIDESPREAD AND FOUND WHERE GLADIOLUS IS GROWN IN AFRICA, ASIA, AUSTRALIA AND THE PACIFIC ISLANDS, EUROPE, NORTH AND SOUTH AMERICA. IT IS FOUND IN ALMOST ALL STATES OF THE UNITED STATES. ALTHOUGH IT CANNOT OVERWINTER OUT OF DOORS IN NORTHERN EUROPE AND NORTH AMERICA, THE SPREAD OF THIS THRIPS PROBABLY RESULTS FROM ITS INFESTING CORMS WHICH ARE SHIPPED TO ALL PARTS OF THE COUNTRY. IT WAS FIRST FOUND IN FLORIDA IN 1932 (WATSON, 1941).

HOSTS: THIS THRIPS FEEDS AND REPRODUCES PRIMARILY ON GLADIOLUS PLANTS, FLOWER SPIKES AND CORMS; HOWEVER, IT HAS BEEN RECORDED FROM *PHILODENDRON SELLOUM*, *CLITORIA* SP., *RHODODENDRON INDICUM*, *CALENDULA*, AND CROW-FOOT GRASS, *ELEUSINE INDICA*. THIS THRIPS HAS NEVER BEEN REARED FROM THESE PLANTS AND THEY CANNOT BE CONSIDERED VALID HOSTS. IT HAS BEEN REPORTED TO REPRODUCE ON *TRITONIA* SP., *TIGRIDIA* SP., AND *KNIPHOFIA* SP.

ECONOMIC IMPORTANCE: INJURY IS CAUSED BY THE FEEDING OF THE LARVAL AND ADULT STAGES ON FOLIAGE, FLOWER SPIKES AND CORMS. . THE DAMAGE ON THE FOLIAGE FIRST APPEARS AS SILVERY-WHITE SCARS. INJURED FOLIAGE AND DEFORMED FLOWERS SOON TURN BROWN AND RUIN THE MARKETABILITY OF THE FLOWER SPIKES (FIG. 1). THE CORMS ARE FED UPON IN STORAGE, BUT THIS IS NOT USUALLY A SERIOUS PROBLEM IN FLORIDA (FIG. 2).

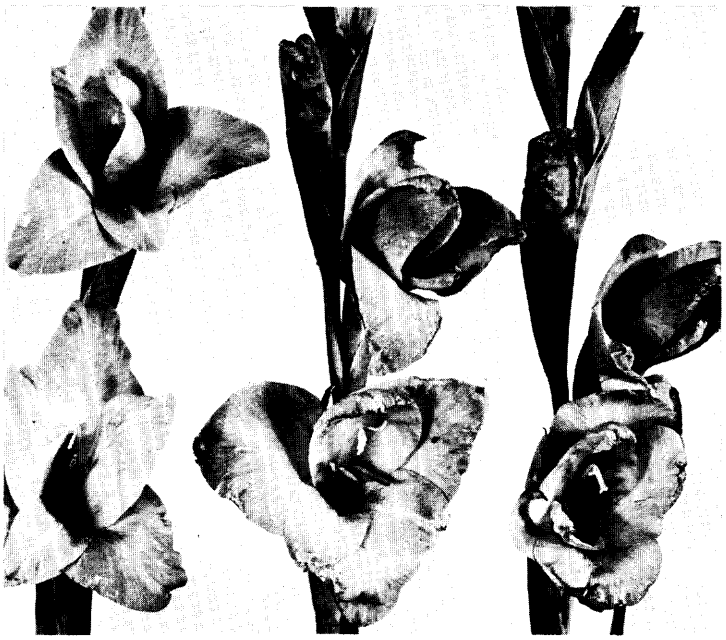

FIG. 1. FLORETS ON RIGHT SHOWING THRIPS DAMAGE.

FIG. 2. CORM ON RIGHT SHOWING ADVANCED STAGE OF INJURY.

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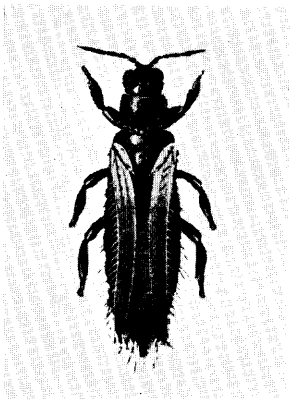

FIG. 3. ADULT FEMALE.

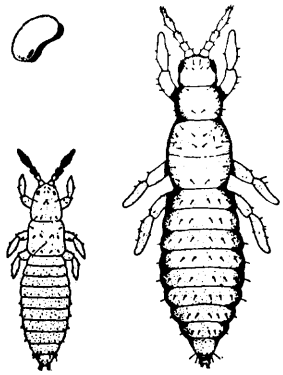

FIG. 4 & 5. EGG AND TWO LARVAL STAGES.

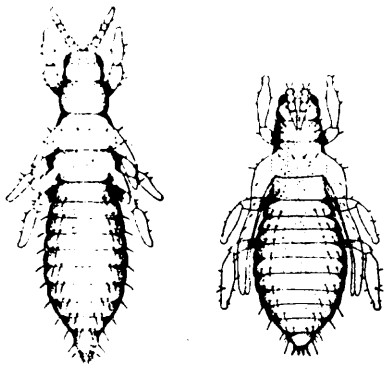

FIG. 6 & 7. FIRST AND SECOND PUPAL STAGES.

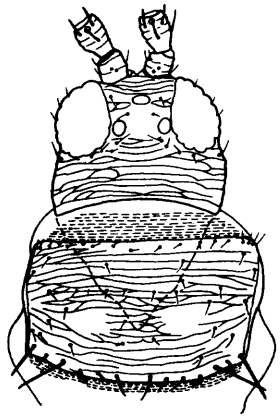

FIG. 8. HEAD AND PROTHORAX SHOWING SETAE. (AFTER L. J. STANNARD)

DESCRIPTION: ADULTS EMERGE A MILKY-WHITE, BUT SOON TURN DARK BROWN AND BEGIN FEEDING. THE FEMALE (FIG. 3) IS APPROXIMATELY 1.65MM LONG AND SLIGHTLY LARGER THAN THE MALE. THE ANTENNAE ARE DARK BROWN EXCEPT FOR THE THIRD SEGMENT WHICH IS LIGHT BROWN. THE WINGS HAVE A LIGHT TRANSVERSE BAND NEAR THE BASE. THE EGG (FIG. 4) IS ABOUT 0.3MM LONG, OPAQUE WHITE, SMOOTH, AND BEAN SHAPED. EGGS ARE DEPOSITED IN THE LEAVES AND CORMS. THE TWO LARVAL STAGES (FIG. 5) ARE LIGHT YELLOW AND ARE USUALLY FOUND BENEATH THE LEAVES OR BRACTS. THE FULLY DEVELOPED SECOND INSTAR LARVA IS ABOUT THE SIZE OF THE ADULT. THE FIRST PUPAL STAGE (FIG. 6) IS DISTINGUISHED FROM THE SECOND PUPAL STAGE BY HAVING FORWARD PROJECTING ANTENNAE AND SHORT WING PADS. THE PUPAL STAGE (FIG. 7) HAS THE ANTENNAE FOLDED OVER THE BACK AND MUCH LONGER WING PADS. THERE IS A QUIESCENT PERIOD AT THE END OF EACH PUPAL STAGE. THE HEAD AND PROTHORACIC SETAE ARE SHOWN IN FIG. 8.

CONTROLS: EFFECTIVE CONTROL OF GLADIOLUS THRIPS HAS BEEN ACHIEVED WITH DDT SPRAYS OR DUSTS; HOWEVER, THE RESTRICTED USE OF THIS COMPOUND HAS APPARENTLY LED TO A RESURGENCE OF THRIPS POPULATION. CURRENT TREATMENT PRACTICES INCLUDE THE FOLLOWING:

FIELD SPRAYS, POUNDS ACTIVE INGREDIENT/100 GAL/ACRE APPLIED EVERY 10 DAYS TO 2 WEEKS.

MATERIAL	FORMULATION	RATE	% EFFECTIVENESS
META-SYSTOX-R	2EC	0.5	94
DIMETHOATE	2EC	0.5	88
CARBARYL	80 WP	1.0	82
SOIL TREATMENTS (IN THE FURROW AT PLANTING)			
PHORATE	10 G	8	GOOD
DI SYSTON	10 G	2-4	GOOD
CORM TREATMENTS DURING STORAGE			
		GRAMS/100 CORMS/TRAY	
LINDANE	5% DUST	0.25	GOOD
MALATHION	4% DUST	0.25	GOOD
CARBARYL	5% DUST	0.25	GOOD
DIAZINON	5% DUST	0.25	GOOD

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