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GRAPE LEAF SKELETONIZER, HARRISINA AMERICANA (GUÉRIN-MÉNEVILLE), A MINOR PEST OF GRAPE IN FLORIDA. 1/ (LEPIDOPTERA: ZYGAENIDAE)

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INTRODUCTION: THIS SPECIES IS COMMON THROUGHOUT FLORIDA, WITH THE POSSIBLE EXCEPTION OF THE KEYS, AND IT RANGES WIDELY IN THE EASTERN HALF OF THE UNITED STATES. IT IS NOTICED PRIMARILY BECAUSE OF ITS DEFOLIATION OF GRAPE VINES IN HOME GARDENS.

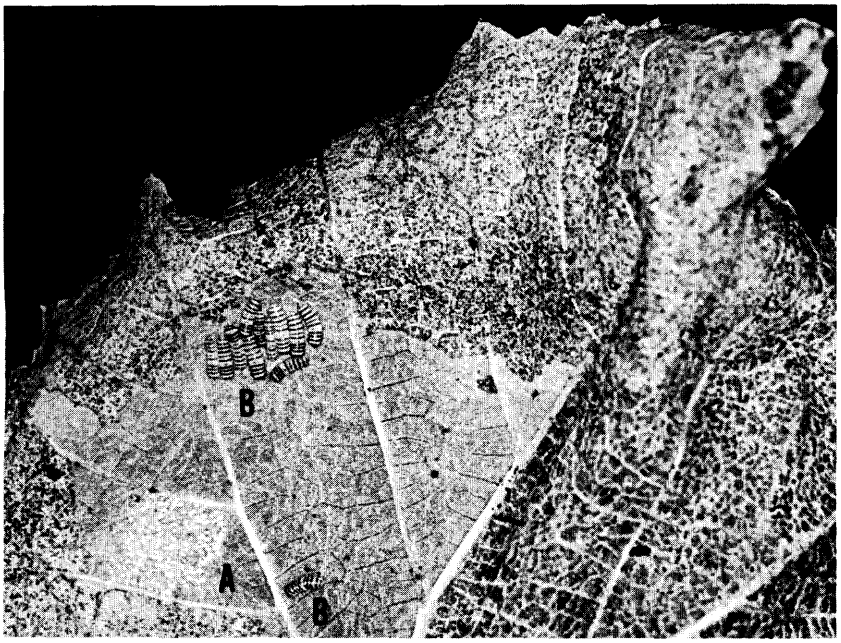

FIG. 1. UNDERSIDE OF 'LAKE EMERALD' GRAPE LEAF, SHOWING CONSIDERABLE DAMAGE BY YOUNG LARVAE OF GRAPE LEAF SKELETONIZER, HARRISINA AMERICANA (GUÉR.); ALSO: (A) REMAINS OF EGG MASS, AND (B) YOUNG LARVAE OF H. AMERICANA.

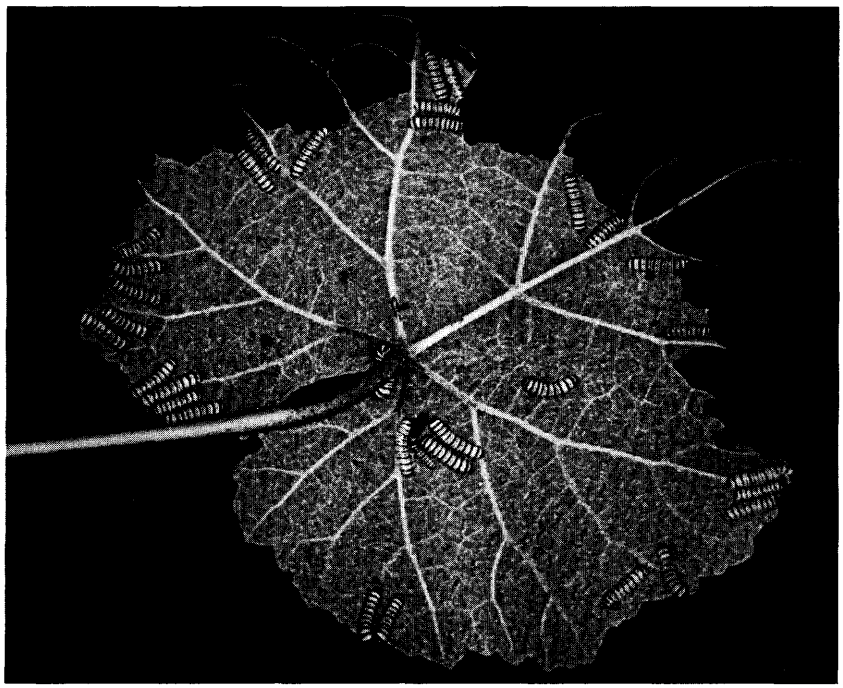

FIG. 2. PARTIAL SKELETONIZATION OF 'LAKE EMERALD' GRAPE LEAF BY LARVAE OF HARRISINA AMERICANA (GUÉR.).

DETECTION, DAMAGE, AND IDENTIFICATION: INITIAL SYMTOMS INCLUDE THE APPEARANCE OF BROWN, NECROTIC, SKELETONIZED LEAF TISSUE, RESULTING FROM YOUNG LARVAE EATING SOME BUT NOT ALL LAYERS OF THE LEAF (FIG. 1). LATER INSTAR LARVAE DEVOUR THE LEAF, LEAVING ONLY A FEW LARGE VEINS (FIG. 2). LARVAE ATTRACT ATTENTION BY FEEDING IN GROUPS, USUALLY SIDE BY SIDE IN A ROW. THIS IS THE ONLY PERTINENT LEPIDOPTEROUS INSECT THAT FEEDS IN A GREGARIOUS MANNER UPON GRAPE FOLIAGE. AS THE LARVAE OF THE COLONY BECOME MATURE THEY TEND TO DISPERSE AS ISOLATED INDIVIDUALS OR IN SMALL GROUPS. LARVAE ARE YELLOWISH AND HAVE BLACK SPOTS OR BANDS (FIG. 3). THEY ARE SLIGHTLY MORE THAN $\frac{1}{2}$ INCH LONG WHEN MATURE. EGGS ARE LEMON YELLOW IN COLOR, CYLINDRICAL-OVAL OR CAPSULE-SHAPED, SLIGHTLY OVER $\frac{1}{2}$ MM IN LENGTH, AND LAID IN CLUSTERS ON LOWER LEAF SURFACES. ADULTS (FIG. 4) ARE UNIFORMLY BLACK EXCEPT FOR A YELLOWISH OR ORANGE COLLAR. THE ANTENNAE ARE PECTINATE IN BOTH SEXES AND PLUMOSE IN THE MALE. THE FOREWINGS ARE FOUR TIMES AS LONG AS WIDE AND MORE THAN TWICE THE AREA OF THE HIND WINGS. THE ABDOMEN IS USUALLY CURLED UPWARDS AND EXPANDED AT THE TIP INTO A FAN-SHAPED, SOMEWHAT BILOBED CAUDAL TUFT. LENGTH OF THE MOTH IS 8-12 MM; WING EXPANSE IS 22-28 MM. SIMILAR SPECIES IN FLORIDA INCLUDE THE ZYGAENIDS ACOLOITHUS FALSARIUS CLEMENS AND A. RECTARIUS DYAR. THE FORMER IS MUCH SMALLER, THE LATTER SLIGHTLY SMALLER THAN HARRISINA, THE WING EXPANSE OF A. RECTARIUS NOT OVER 20 MM. NEITHER SPECIES OF ACOLOITHUS HAS THE TUFT ON THE TIP OF THE ABDOMEN. A COMMON SPECIES IN FLORIDA MOST LIKELY TO BE CONFUSED WITH HARRISINA IS THE CTENUCHID CISSEPS FULVICOLLIS (HÜBNER). CISSEPS IS SLIGHTLY LARGER AND THICKER BODIED BUT IS SIMILAR IN ITS BLACKISH COLORATION AND YELLOWISH COLLAR. THE HIND WINGS OF CISSEPS DIFFER FROM PERTINENT ZYGAENIDS BY BEING RELATIVELY LARGER, MORE TRIANGULAR, AND CLEAR IN THE MIDDLE PORTION INSTEAD OF BEING EVENLY DARK SCALED. CISSEPS ALSO LACKS THE TUFT ON THE APEX OF THE ABDOMEN. THE WESTERN GRAPE LEAF SKELETONIZER, HARRISINA BRILLIANS BARNES AND MCDUNNOUGH, IS VERY SIMILAR TO AND SLIGHTLY LARGER THAN ITS EASTERN CONGENER, H. AMERICANA, BUT HAS NOT BEEN TAKEN

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IN FLORIDA ACCORDING TO KIMBALL (1965). H. BRILLIANS RANGES FROM CALIFORNIA TO TEXAS AND SOUTH TO MEXICO.

HOSTS: NATIVE HOSTS INCLUDE WILD GRAPES AND VIRGINIA CREEPER, PARTHENOCISSUS QUINQUIFOLIA (L.) PLANCH. AMONG CULTIVATED GRAPES, H. AMERICANA SEEMS TO PREFER EXOTIC OR THE MORE CHOICE AND TENDER VARIETIES. ADULTS HAVE BEEN COLLECTED IN STEINER TRAPS SEVERAL TIMES.

FIG. 3. LARVAE OF HARRISINA AMERICANA (GUÉR.)

LIFE HISTORY: JONES (1909) GIVES AVERAGE LENGTH OF LIFE CYCLE AS 66.7 DAYS AND MINIMUM LIFE CYCLE AS 53 DAYS. HE LISTS THE AVERAGE LENGTH OF EGG STAGE AS NEARLY 8 DAYS, LARVAL STAGE 40 DAYS, PUPAL STAGE 15 DAYS, AND LENGTH OF LIFE OF THE ADULT MOTH AS $3\frac{1}{2}$ DAYS. KIMBALL (1965) LISTS MOTHS ON THE WING IN FLORIDA FROM MARCH TO SEPTEMBER. THE EARLIEST DIVISION OF PLANT INDUSTRY (DPI) RECORD IS FEBRUARY 25 AT HOMESTEAD, FLA. WINTER IS PASSED IN THE PUPAL STAGE. THE WRITER HAS SEEN EGG CLUSTERS AS EARLY AS APRIL 7 AT GAINESVILLE. DPI RECORDS SHOW THAT LARVAE HAVE BEEN COLLECTED FROM MAY TO NOV. 14. IT SEEMS PROBABLE THAT SOME LARVAE APPEAR IN APRIL. THERE ARE AT LEAST TWO GENERATIONS PER YEAR. ADULTS ARE DIURNAL AND NOCTURNAL.

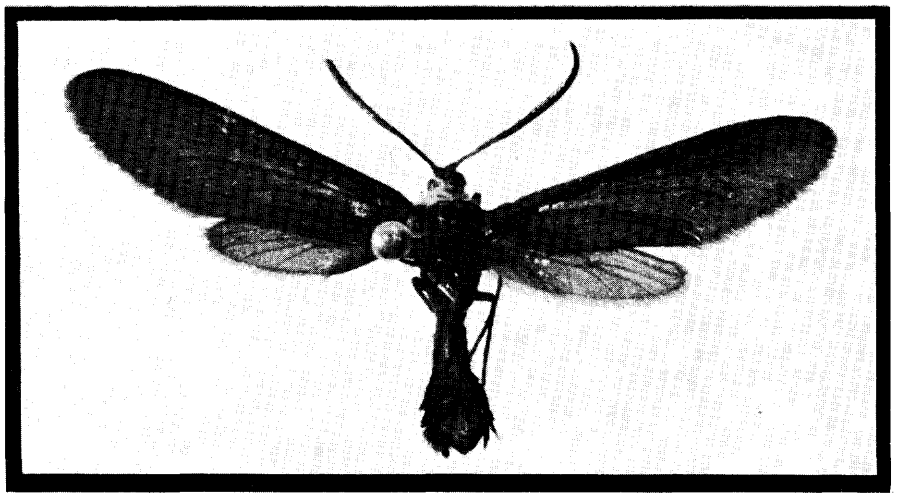

FIG. 4. PINNED AND SPREAD ADULT OF H. AMERICANA.

CONTROL: VINEYARDS RECEIVING THE REGULAR SPRAYS FOR IMPORTANT GRAPE PESTS ARE NOT TROUBLED WITH SKELETONIZERS. THE CURRENT STANDARD CHEMICAL USED AGAINST CATERPILLARS ON GRAPE IS CARBARYL (SEVIN) AT 1 1/4 POUNDS OF 80% SPRAYABLE PER 100 GALLONS OF WATER (1 1/4 TABLESPOONS PER GALLON OF WATER) OR 2 POUNDS OF 50% WETTABLE POWDER PER 100 GALLONS OF WATER (2 TABLESPOONS PER GALLON OF WATER). THERE IS NO TIME LIMITATION FOR USE OF CARBARYL ON GRAPES. HANDPICKING IN SMALL AREAS ALSO IS AN EFFICIENT TREATMENT BECAUSE OF THE GREGARIOUS FEEDING HABIT OF THE LARVAE. CATERPILLARS SHOULD BE DESTROYED AS SOON AS THEY ARE NOTICED ON THE FOLIAGE, AS ALL FROM EACH CLUSTER OF EGGS WILL BE IN A SINGLE GROUP, WHEREAS IF THE TREATMENT IS DELAYED UNTIL THE LARVAE HAVE SEPARATED INTO INDIVIDUALS OR SMALL GROUPS, MUCH MORE LABOR WILL BE INVOLVED. SINCE THE LARVAE SPIN THEIR COCOONS IN THE LEAVES AND TRASH AT THE BOTTOM OF THE VINES, CLEAN CULTURE IS RECOMMENDED.

LITERATURE CITED:

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