

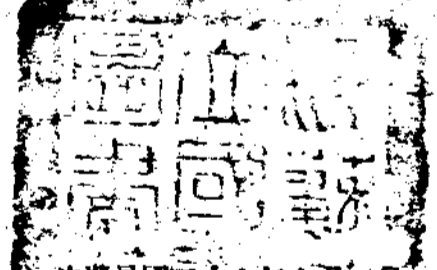
# 昆蟲與植病

## ENTOMOLOGY & PHYTOPATHOLOGY

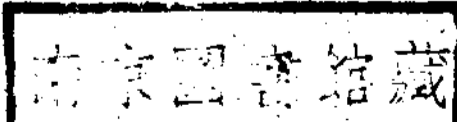
July 1, 1937.

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中華民國二十六年七月一日  
 杭州浙江省昆蟲局發行  
 THE BUREAU OF ENTOMOLOGY  
 HANGCHOW, CHEKIANG, CHINA.



## FOUR NEW COCCIUS FROM CHEKIANG

## 浙 產 介 殼 蟲 四 新 種

陳方潔 By CHEN, FONG GE.

*Entomological Laboratory, College of Agriculture,  
National University of Szechuen.**Matsucoccus sinensis* sp. nov.

Test—Oval shaped, with narrower end bending downward and a small round opening just in the extremity, texture hard and toughish, becoming from the intermediate female skin, palish black to black, over the dorsum beset with many small waxy plates, the adults hiding within it, before the laying eggs, occasionaly getting out from the hole and wandering on the pine needles. Length 2mm.

Adult female—Elongate or nearly circular, derm membranous throughout; antennae 9-segmented, the basal two segments larger and very incompletely chitinized, the remaining segments shorter than wide, greatly enlarged at their distal parts, with many small setae on them, and those segments following fifth each occurring a pair of stout sensory setae, eyes at the lateral sides of antennae, mouthpart not clear in all the specimens. Legs short and stout, coxa mostly membranous and hardly located; trochanter with several (about 5) sensory pores; tarsus distinctly two segments, the basal one very small; claw with two large digitules on the base; all the segments each bearing some small setae, in addition to the latter, some larger ones settling in lines on the tibia and few on the tarsus. Thoracic spiracles circular, without bar; abdominal spiracles present and smaller than the thoracic ones. Derm pores with bilocular centers and sometimes with ring of loculi surrounding the center, size various but usually minute, about half the diameter of disk-like simple pores, these latter more definite and greater in number.

Intermediate adult female—Similar to the test of adult but smaller and narrower, heavily chitinized; at the anterior part of ventral side with elongate oval patch, which around the mouth-part, more heavily chitinized and hardly cleared even being treated by potash. In the center of the patch occurring

a small hole from which the beak of mouth-part-carried out. Legs and antennae wanting, spiracles well-developed; anal opening obscurely.

Male—Unknown.

Host—On the leaf-needles of *Pinus* sp.

Host—Hwangyen (Chi-Lon-Shan), Chekiang.

Many intermediate females respectively collected by the writer and Mr. Ma, H. T. on January 30 and May 14, 1936.

Types in the writer's collection.

*Euphilippia aquifoliae* sp. nov.

Adult female—Broad oval shaped, flattened, those before laying eggs, polished soft, pale yellow, the dorsum marked with indefinite networks, and a pair rows of filamental wax erecting upon the anterior both submedian lines; in egg-laying female this wax completely covering the dorsal aspect and connecting with the ovisac which loosely constructed and with roof-ridge liking.

Antennae usually of eight segments, the basal one much wider than long, the comparative length of the segments varying—formula: 3, 4, 5, 1, (2, 8), 6, 7; the last segment with several blunt setae which usually not pointed at the distal ends.

Mouth-part and legs well-developed, the latter with claw digitules especially large. Spiracles very large and trumpet-like. Marginal setae regularly arranged in a single row, closely from each other, rather stout, allied to slender conical spines.

Stigmatic cleft rather deep, with many (8-13) stout and blunted spines crowded there, middle two of the spines more larger and stouter, the remaining ones more or less equal in size, anal cleft short and wide separated, at the margins of both sides each with a row of 8-10 large and slender setae, which just behind the anal plates. Anal plates irregularly triangular or oblong, with cephalo-lateral margins longer than the caudo-lateral, and at the anterior part of median margins each indistinctly bearing a weak angle; at the caudal parts with 5 long and stout setae along each the mesal margin of dorsal aspect and a smaller subapical one on the ventral.

Dorsum, along the submedian lines, with a pair of rows of short conical and invaginated spines, which intermixed with many small simple tubular glands; many conical pores (shown in the figure) scattered throughout the whole dorsum, larger and more definite than the pores of tubular glands. Tubular ducts abundant in dorsal side and the caudal part of the ventral side, those of the latter, around the anal ring. Quenquinocular pores of the stigmatic regions and the compound pores of the anal region normally developed

Measurements of two adult females as following:

Length of the body 3.4mm; width 2.2mm.; length of antennae 0.4mm.; mid-leg (coxa 0.19mm., trochanter 0.117mm., femur 0.239mm., tibia 0.212mm., tarsus 0.098mm., claw 0.083 mm.), anal plate 0.14mm.; marginal seta 0.041mm.; stigmatic spine 0.057mm.

Host—*Osmanthus aquifolia* B. et H.

Hab.—Hwangyen, Chekiang.

Two lots of adult females collected on May 14, 1936, on same species of host but in different places.

Types preserved in the writer's collection, many paratypes deposited in the Fruit Insects Laboratory of Hwangyen.

*Pseudaulacaspis hwangyensis*. sp. nov.

Scale of adult female—Subcircular, rather convex at the dorsum, opaque, palish white, always covered by the epidermal tissues of the host plants, nymphal skins near the frontal margin, and the 1st skin somewhat projecting out of the margin. Diameter about 3mm.

Adult female—Yellow, subcircular, with caudal portion wee tapering toward the extremity, all segments finely indicated. Antennae moderately far separated and about equal to the wide of endoskeleton of the mouth-part; anterior spiracles with 21-26 parastigmatic glands. In the sides of the thoracic and abdominal segments each with many dorsal gland orifices and gland spines, those spines which on the penultimate and 1 preceding segments very long and moderately stout, blunt at the apex.

(Pygidium)—Nearly as long as wide; anal opening circular, anterior to the genital one. Circumgenital pores in five groups,

the lower lateral with 34-67 pores. Dorsal gland orifices in four groups, forming two interrupted arches as shown in the figure, large, about similar in size to the marginal glands, anterior groups each with 5-7 pores, the posterior with 9-13 pores; marginal glands 5 on each side. Median lobes especially large, somewhat triangular, with both margins deeply serrated; second pair of lobes slightly developed, triangular and not incised. Gland spines 8-9 on each side, the anterior ones much longer than the median lobes. Marginal spines of dorsal aspect 5 pairs, the median pair most minute.

Scale of male—Elongate, about three times as long as wide, parallel at both lateral margins, loosely felted in texture, white and not carinated.

Host—On the stem of one unknown tree.

Hab.—Hwangyen (nearby the Fruit Insects Laboratory), Chekiang. Several females and a great number of male-scales collected by the author on September 30, 1936.

Types in author's collection.

*Lepidosaphes pinicolous* sp. nov.

Scale of Female—Very slender, usually straight and nearly parallel in both sides. The 1st nymphal skin light yellow to brownish yellow, with most of it reaching beyond the cephalic margin of the 2nd skin; this latter dark brown to blackish brown, sometimes with light, brownish margin along the caudal abdomen. Secretion brownish black, with transverse striae. Total length 3mm.

Adult female—The shape and structure very similar to *Lepidosaphes ficicola* Takah., but different from it by the following characters. (1) With 6 marginal glands on each side of pygidium. (2) Dorsal gland pores fewer and much stouter. (3) Slender ducts, cephaloid of the last marginal gland, usually wanting. (4) Median lobes usually longer than wide.

Host—On leaf-needles of *Pinus* sp.

Hab.—Hwangyen, Chekiang.

Many females collected by the writer on January 9, 1936. Types preserved in the writer's and Takahashi's collection.

(The writer wishes to express his sincere acknowledgements to Mr. E. E. Green, Prof. G. F. Ferris and Dr. R. Taka-

hashi for their kindness to examine and to confirm these species).

Explanation of the Plates:

(I) *Matsucoccus sinensis*

- A. & B. Disklike simple pore  $\times 1133\frac{1}{3}$
- C. Lateral view of the test  $\times 20$
- D. Bilocular derm pore  $\times 1133\frac{1}{3}$
- E. Lateral view of the same  $\times 2000$
- F. Thoracic spiracle  $\times 473\frac{1}{3}$
- G. Abdominal spiracle  $\times 473\frac{1}{3}$
- H. Antennae  $\times 200$

(II) *Euphilippia aquifoliae*

- A. Antennae  $\times 180$
- B. Quenqilocular pore  $\times 660$
- C. Compound pore  $\times 695$
- D. Minute tubular pore  $\times 755$
- E. Conical spine  $\times 188\frac{1}{2}$
- F. Tubular ducts  $\times 915$
- G. Newly emerged adult female  $\times 32$
- H. Anal cleft and anal plates  $\times 230$
- I. Stigmatic cleft and spines  $\times 255$

(III) *Pseudaulacaspis hwangyensis*

- A. Adult female  $\times 80$
  - B. Caudal margin of pygidium  $\times 625$
- Lepidosaphes pinicolous*
- C. Pygidium of adult female  $\times 175$

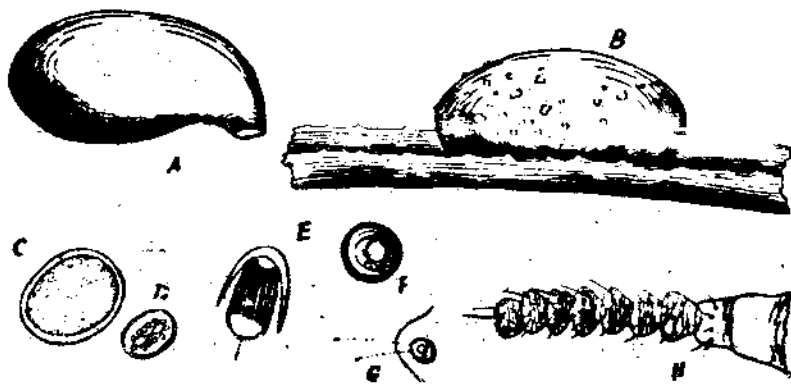


Plate I

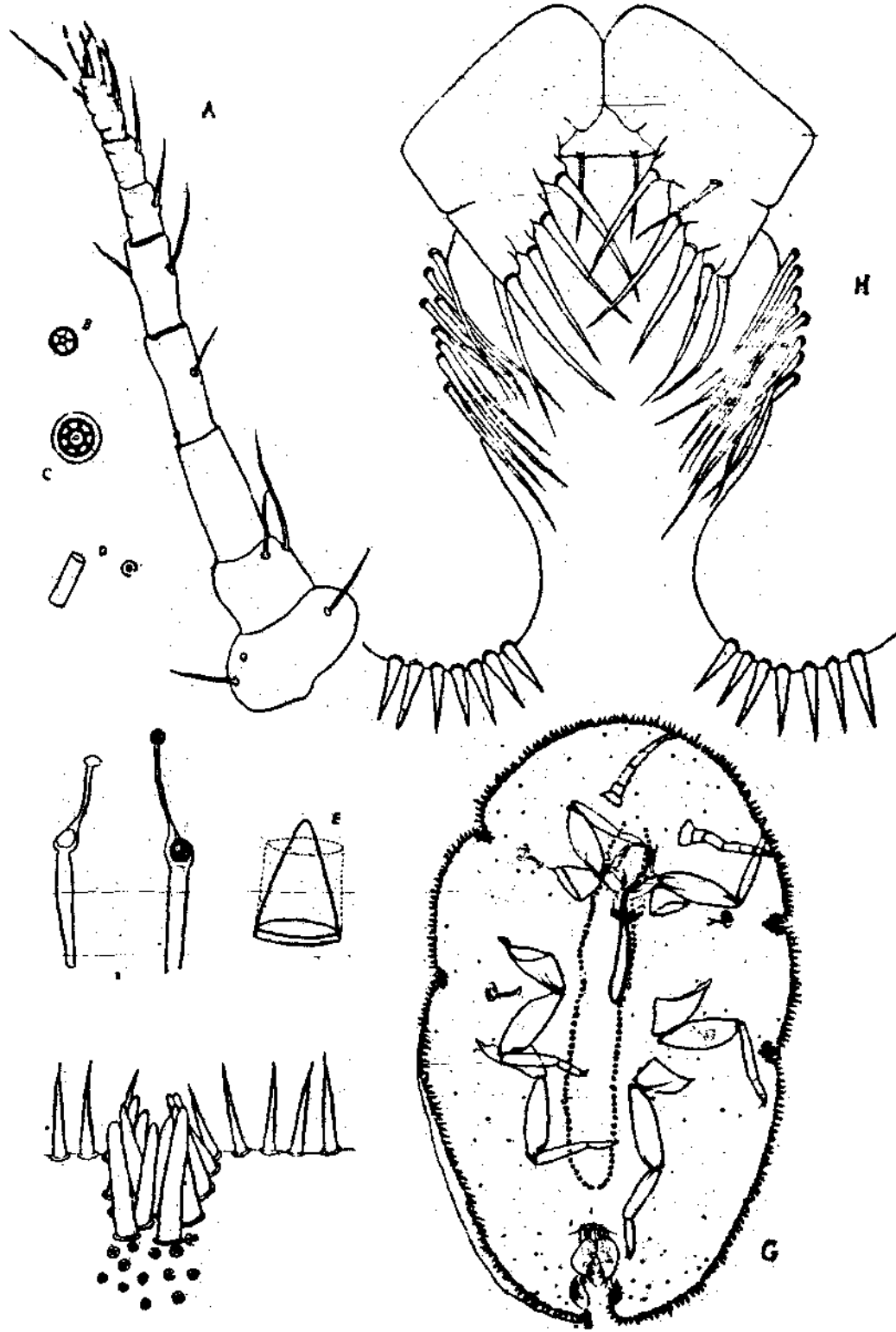


Plate II

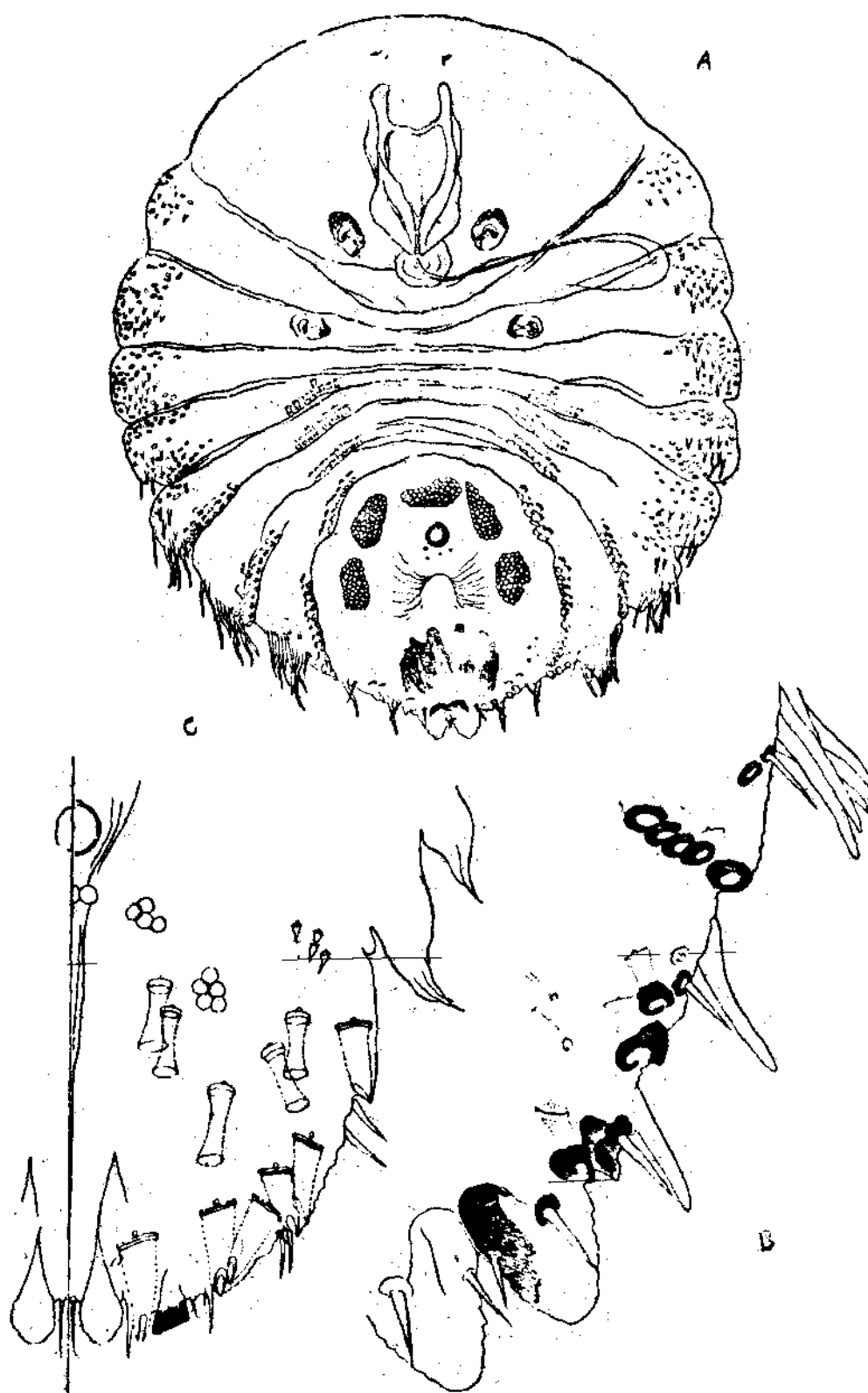


Plate III



華北未記錄雌葉切蜂之記述(膜翅目葉切蜂科)  
Description of the female *Megachile albuta* Cockerell new to the Fauna  
of North-China. (Hym, Megachilidae).

九州帝國大學農學部昆蟲學教室 季士儼 By CHI, SIEZE-YEN

*Megachile albuta* Cockerell (Pl. I)

*Megachile albuta* Cockerell, Ann. Mag. Nat. Hist., ser. 8, vol. 7, no. 41, p. 489, 1911.

♀ 體黑，大腮完全黑色，觸角之柄節及梗節黑，鞭節深赤黑褐色，肩板黑色，其外緣略呈黑褐，脚黑富有光澤，跗節內側密被暗赤褐色毛，腹部第一腹板乃至第六腹板黑色，翅與雄者相同，前翅之先端微暗，徑室之前緣略帶淡紅色，翅脈赤褐，緣紋褐色。

體面之軟毛灰白，腹部之刷毛為較深灰白色，惟其基部半截呈白色，腹部末節之毛黑色，顏面密被灰褐色長毛，鼻頂之毛為黑色，頸、前胸背板、中胸背板、肩板、小楯板及後胸背板之面上被以黃白色長毛，前伸腹節之後緣密生灰白色長毛，腹部第一背板後側方之部分生有較長之淡黃色細毛，第二乃至第四背板之後緣亦密被同色短毛。

頭楯微隆起，長度略長於寬，其前緣稍帶圓形，中央部疎佈點刻，周圍者則較為稠密。Ool: Pol=17:13. 顏面中縱溝達於前方單眼處，觸角基部上方之縱隆起及複眼間之部分點刻較為粗大顯著。頭頂部密佈點刻，其裝於後方單眼之後方部者較大為數亦少，觸角各節長度之比例為 I:II:III:XII=18:5:5:7. 柄節之長較幅三倍有奇，全面具有點刻，頗為粗糙。

前、中兩胸背板上之點刻粗大，側片溝(Parapsidal furrows)不相互平行，中胸楯板及後楯板之點刻形大且糙，中胸側板之前半部點刻較為稠密，後半部者稀少，微帶光澤，後胸側板之上下兩部散有小形點刻，前伸腹節：中央部之點刻大而疎布，兩側者則甚微小。

腹部之點刻微小，第一乃至第六背板之全面裝有大小不規則之點刻，第一腹板點刻微小，第二乃至第五腹板後半部之點刻較大而

粗糙，前半部者密布微小，第六腹板之兩側散有大形點刻，其於正中線者則較小。

長度……頭(背面)1.7耗 胸部3.7耗 腹部5.0耗

觸角3.2耗 前翅6.0耗 後翅4.5耗。

幅度……頭3.2耗 胸3.0耗 腹部第一背板3.4耗

腹部第二背板3.8耗。

採集地點： 1♀, 25. V. 1933, 釣魚台, 北平, Chi leg.

分 佈： 中國, 台灣。

♀. Black. Mandibles entirely black. Antennal scape and pedicel black, flagellum dark brown. Tegulae black, with the outer margin somewhat black brown in coloration. Legs shining black, hairs on inner side of tarsi fusco-rufous. Tergites first to sixth black coloured. Wings similar to that in male. Apex of fore wings slightly darkened, fore margin of Radial Cell rather faint reddish. Nervures ferruginous, stigma brown.

Pubescence grayish-white. Ventral scopa usually paler, the basal half white, hairs on last segment of abdomen black. Frons covered densely with long grayishbrown hairs and those on vertex blackish. Hairs on neck, pronotum, mesonotum, tergula, scutellum as well as on metanotum yellowish-white. Hind margin of propodeum with grayish-white, long hairs. Postero-lateral portions of the first abdominal tergite with comparatively long and faint yellowish hairs and the hind parts of from second to fourth ones with yellowish but short hairs.

Clypeus slightly convex, a little longer than broad, with the anterior margin gently rounded, central portion with a few scattered punctures, and the surrounding portion with comparatively dense punctures. Ool: Pol=17: 13. Front with a median impressed line which is reaching the anterior ocellus. Scrobi comparatively coarsely and distinctly punctured. Vertex finely punctured except the area just posterior to the segments of antenna: I: II: III: XII=18: 5: 5: 7. Antennal scape longer than thrice the width of it, with the whole surface coarsely punctured.

Pronotum and mesonotum strongly, comparatively coarsely and largely punctured. Parapsidal furrows not parallel to each other. Scutellum and post scutellum very coarsely and strongly punctured. Anterior of mesopleura comparatively densely punctured, but the posterior portion sparsely punctured and somewhat shining. Both upper and lower parts of metapleura with minute punctures. Propodeum: area medialis, comparatively largely and sparsely punctured, area lateralis much more densely and minutely punctured.

Abdomen minutely punctured. Tergites first to sixth with primary and secondary irregular punctures. First sternite somewhat densely and minutely punctured, posterior half of each sternite (2nd to 5th) with coarse and large punctures and the anterior half of each sternite (2nd to 5th) with minute, dense punctures. Punctures on the sides of sixth sternite large and on the median portion small.

Length: Head (Seen from above) 1.7mm. Thorax 3.5mm. Abdomen 5.0mm. Antenna 3.2mm. Fore wing 6.0mm. Hind wing 4.5mm.

Width: Head 3.2mm. Thorax 3.0mm. First abdominal tergite 3.4mm. Second abdominal tergite 3.8mm.

Locality: 1♀, 25. V. 1933. Tiao Yü Tai, Peiping, Chi leg.

Distribution: China and Formosa.



葉切蜂 *Megachile albata* Cockerell  
(♀) ca. ×4

### 梨樹赤星病之藥劑防治試驗

An Experimental Study On the Controlling of Pear Rust (*Gymnosporangium Haraeae* Syd.) by spraying different Fungicides.

浙江省昆蟲局植物病理研究室 林士楨 By LIN, SHIH-CHENG

梨樹赤星病，盛發於浙江，肆虐劇烈，驅除防治，實有刻不容

緩之勢。本病病原菌於秋冬之間，寄生於檜柏。翌春發生冬孢子角，雨後膨脹，冬孢子飛散，傳染於梨樹，旋即發病。故春季檜柏上冬孢子尚未飛散之際，噴射適當藥液，當有相當效果。本病之防治，研究者頗不乏人。述者鑒於本病之與農村經濟不無相當重要，爰於今春施行是項試驗，分藥劑之種類及噴射次數之多寡兩項以測其防病效力。茲將試驗方法及結果，分述如下：

本試驗蒙蔡局長接洽試驗場址，及改正試驗計劃。復承本室主任崔伯棠先生，工作上予以方便及指導，均所深感！

### 一、試驗方法

本試驗場地，初擬假杭市徐村五雲農場舉行，旋以該場於未舉行試驗前，曾噴射波爾多加砒酸鉛液，於本試驗之進行頗多妨碍。故迺改借杭市九溪十八澗口外許公武先生果園中舉行，該園梨樹品種尚未檢定，於1935年及1936年發生本病甚烈。是項試驗之目的有二，一、各種殺菌劑於本病預防效果之比較。二、噴藥次數之多寡與每次噴藥相距時間之長短，與本病預防效果之影響。後項試驗去年本室曾一度舉行，第以開始噴藥時間過遲，致各處理結果相差均不顯著。而其每週噴一次項，罹病率較低於他項。本年仍廣續舉行，以究其效果，是否較高於他項。茲將各項處理項目分列於下：

#### (1) 各種藥劑之預防效果比較試驗

- A. 0.8%式石灰波爾多液(成分比例：硫酸銅4，生石灰6，水500，)(均以重量計)
- B. 0.6%式石灰波爾多液(成分比例：硫酸銅3，生石灰6，水500)
- C. 沙糖波爾多液(成分比例：硫酸銅4，生石灰6，水500，沙糖20)
- D. 洋菜波爾多液(成分比例：硫酸銅4，生石灰6，水500，洋菜0.4)
- E. 石灰硫黃合劑(波美氏表0.1°)
- F. 對照區

是項試驗於三月卅一日開始噴射，經2週後(即四月十四日)復噴一次，共噴2次。

#### (2) 噴藥次數多寡於預防效果比較試驗

- A. 僅噴一次(三月三十一日噴射)
- B. 每週噴射一次(即三月三十一日，四月七日，四月十四日各噴一次共三次)
- C. 每二週噴射一次(即三月三十一日，四月十四日各噴一次共二次)

D. 對照區

第二項試驗，所用藥液為0.8%式石灰波爾多液。該園地處山坡，均係梯田，進行試驗時，以每級為一組或二組。每一處理為一株梨樹，重複五次，共六組，且均以隨機排列法排列。

二、試驗結果

五月二十日，就已處理各梨樹，任意取其二枝或三枝，視其葉之多寡而定。調查其總葉數及罹病葉數，再分別以總葉數除罹病葉數乘以100，得各項之發病百分率列下：

1. 各種藥液於本病預防效果之比較試驗

第一表 各種藥液噴射後之發病百分率

處理項目	A	B	C	D	E	F	總和	總和平方
區集1	5.50	5.62	1.90	3.17	19.31	38.64	74.14	5496.7396
區集2	4.12	3.42	2.69	2.20	16.99	24.47	53.89	2904.1321
區集3	1.85	4.56	1.99	4.11	23.99	22.17	58.67	3442.1689
區集4	5.83	6.04	2.00	0.77	20.28	28.39	63.31	4008.1561
區集5	1.79	0.94	1.67	4.36	11.00	35.25	55.01	3026.1001
區集6	5.51	13.04	0.93	0.45	36.81	15.50	72.24	5218.6176
總和	24.6	33.62	11.18	15.06	123.38	164.42	377.26	24095.9144
總和平方	605.1600	1130.3044	124.9924	226.8036	16481.4244	27037.9364		45602.6212
平均	4.1	5.6033	1.8633	2.5100	21.3966	27.4033	泛平均值 10.4749	

視上表，經噴藥液之梨樹，其發病率均減低。而是否可靠，亦有加以考慮之必要。故就上表之數值，依 Fisher 博士之 Analysis of Variance 法分析之如下：

各區平方總和 = 8460.182

各區總和平方除以總區數 =  $377.26^2 \div 36 = 3953.4474$

故總變異平方和 =  $8460.182 - 3953.4474 = 4506.7346$ .....(a)

區集變異平方和 =  $24095.9144 \div 6 - 3953.4474 = 62.5383$ .....(b)

處理變異平方和 =  $45602.6212 \div 6 - 3953.4474 = 3646.9895$ .....(c)

試驗差誤平方和 =  $a - b - c = 797.2068$

第二表 試驗結果之變量分析

變異來源	自由 度	平 方 和	變 量
區 集	5	62.5383	
處 理	5	3346.9395	729.3979
試驗 差 誤	25	797.2068	31.8883
總 計	25	4506.7346	

$$Z = \frac{1}{2} \log \frac{729.3979}{31.8883} = \frac{1}{2} \times 3.129885 = 1.5649425$$

$$\left. \begin{array}{l} N_1 = 5 \text{ 檢 } 0.05Z = 0.4783 \\ N_2 = 25 \text{ 檢 } 0.01Z = 0.6745 \end{array} \right\} \text{均較小於 } 1.5649425$$

視上諸數值，可知由處理所引起之變異，較試驗誤差所引起之變異為大，其結果頗為顯著。且據此可得各項處理罹病率之相互比及顯著度如第三表：

第三表 各種藥液噴射後之發病率顯著度比較

處理項目		發病率					
		F	E	B	A	D	C
		27.40	21.40	5.60	4.10	2.51	1.86
對 照 區	F	27.40					
0.1° Beaume's 石灰硫黃合劑	E	21.40	6.00				
0.6%式石灰波爾多液	B	5.60	21.80*	15.80*			
0.8%式石灰波爾多液	A	4.10	23.30*	17.30*	1.50		
洋菜波爾多液	D	2.51	24.89*	18.89*	3.09	1.59	
沙糖波爾多液	C	1.86	25.54*	19.56*	3.74	2.26	0.65

\*示機會數為5%時相差顯著者。

$$6 \text{ 區集平均數之標準誤差} = \sqrt{\frac{31.8883}{6}} = 2.3051$$

$$P = 0.05 \text{ 時相差顯著所需之值, } 2.3051 \times \sqrt{2} \times 2.06 = 6.716$$

視第三表，得知上列各種藥液，除 0.1° Beaume's 石灰硫黃合劑一項以外，其發病率均較 Check 項為低，且相差亦頗顯著。其中以沙糖波爾多液區發病率為最低，洋菜波爾多液區次之，0.8%式石灰波爾多液區又次之，0.6%式石灰波爾多液區為最高，而相差均不甚顯著。

2. 噴藥次數多寡於預防效果之比較試驗

第四表 噴藥次數不同各項處理之發病率

處理項目 區集	A	B	C	D	總和	總和平方
區集 1	1.75	4.69	4.14	18.10	28.68	822.5424
區集 2	2.68	4.31	2.80	7.14	16.03	286.6249
區集 3	3.67	1.08	5.19	21.92	31.86	1015.0596
區集 4	5.14	1.70	2.38	12.85	22.07	487.0849
區集 5	7.89	13.37	6.87	39.19	67.32	4531.9824
區集 6	3.60	2.75	5.36	26.57	38.28	1465.3584
總和	24.73	27.90	26.74	125.77	205.14	8608.6526
總和平方	611.5729	778.4100	715.0276	15818.0929	泛平均値	17923.1034
平均	4.12	4.65	4.46	20.96	8.63	

上表數值，再以變量分析法分析之，以決其是否可靠，結果如下：

- 各區平方總和 = 3755.8169
- 各區總和平方除以總區數 =  $205.14^2 \div 24 = 1753.4342$
- ∴ 總變異平方和 =  $3755.8169 - 1753.4342 = 2002.3827$ .....(a)
- 區集變異平方和 =  $8608.6526 \div 4 - 1753.4342 = 399.729$ .....(b)
- 處理變異平方和 =  $17923.1034 \div 6 - 1753.4342 = 1233.7497$ .....(c)
- 試驗差誤平方和 =  $a - b - c = 368.804$

第五表 試驗結果之變量分析

變異來源	自由 度	平 方 和	變 量
區 集	5	399.7290	
處 理	3	1233.7497	411.25
試驗差誤	15	368.8040	24.59
總 計	23	2002.2824	

$$Z = \frac{1}{2} \log \frac{411.25}{24.59} = \frac{1}{2} \times 2.81663 = 1.408315$$

$N_1 = 3$  } 檢0.05 = 0.5950  
 $N_2 = 15$  } 檢0.01 = 0.8448 } 均較小於1.408315結果亦頗顯著。

第六表 噴藥次數不同之各項處理發病率之顯著度比較

處理項目		處理項目			
		D	B	C	A
發病率		20.96	4.65	4.46	4.12
對照區	D	20.96			
每週噴射一次	B	4.65	16.31*		
每二週噴射二次	C	4.46	16.50*	0.19	
僅噴一次	A	4.12	16.84*	0.53	0.34

$$6 \text{ 區集平均數之標準差} = \sqrt{\frac{24.57}{6}}$$

$$= 2.024$$

P = 0.05 時相差顯著所需之值

$$2.024 \times \sqrt{6} \times 2.131 = 6.1$$

\*示機會數 5 次時相差顯著者。

視第六表，得知各項處理之發病率，均較 Check 項為低，且相差亦甚顯著，以此可知波爾多液預防本病確有效果。

### 結 論

1. 以波爾多液防治梨樹赤星病，確有相當效果。
2. 噴射 0.1° Beaume's 石灰硫黃合劑區，發病率雖較低於對照區，而相差仍不甚顯著，可知以 0.1° Beaume's 石灰硫黃合劑防治梨樹赤星病，無甚效果。
3. 僅噴一次區發病率，較每週噴一次區，及每二週噴一次區減低，且相差均不顯著。故於噴藥次數多寡，於本病防治效果，無多大影響。
4. 噴 0.8% 式波爾多液區發病率，較噴 0.6% 式波爾多液區略形減低，而相差亦不顯著。
5. 波爾多液中加沙糖及洋菜等粘着劑，效果較大，惟相差極微。

## 研究紀要

### (一) 本局稻蟲研究所工作一束

#### 一、小縱捲葉蟲生活史 去年飼育在室內過冬之幼蟲

，於五月上旬先後羽化，十五，十六日產卵，廿二，三日孵化，卵期 6 日，其孵化時刻均在清晨八時左右，時間僅需三分鐘，幼蟲孵化後經 5—6 日即行脫皮，第一齡平均 5.3 日，第二齡最早為四日。

#### 二、繼續春耕時混在流托內之稻蝗卵塊及各種蟲數之考查



考查日期	田別	前作	面積	流托數量	撈流托時間	稻時卵塊	頁子蟲	蠶	金龜子	黑椿象	象鼻蟲	金花蟲	不明蟎(口咬)
V.1	紫雲英返田	中稻	3.52畝	5.12市斤	98分	104	3			3	4		
..	..	..	2.74	6.4	102	119		3		2			
V.3	..	早稻	1.05	4.10	40	83			2				1
..	..	中稻	1.00	5.8	42	119				3		3	
V.4	..	..	2.37	13.8	33	14	3	1			25	4	3
..	..	..	2.61	7.0	35	19	3				21		14
V.5	..	早稻	1.50	7.2	40	15	4			2	16		1
V.12	..	..	5.95	18.0	110	244	5				5		
V.26	..	中稻	3.08	26.0	180	539	6				24		

三、大螟蛾產卵數及死後腹內遺卵之考查 室內飼育大螟蛾自交尾後開始產卵，至死亡後，復加解剖，觀察每♀蛾產出之卵與腹中未產出之卵列表如下：

A. 室內飼育大螟雌蛾產卵數之考查

雌蛾號	羽化期	產期	死亡	產出卵		腹中卵	總卵數
				塊數	粒數		
1	V.4	V.6-10	V.11	5	333	31粒	364粒
2	4	6-11	13	9	343	7	350
3	4	6-10	13	12	380	4	384
4	7	9-13	15	7	175	3	178
5	4	7-12	19	7	257	8	265
6	10	13-17	28	9	253	6	259
平均				8.2	290	9.8	300

B. 誘蛾燈下活捉籠內所得之大螟蛾產卵數之考查

雌蛾號	活捉期	產期	死亡	產出卵			腹中卵		總卵數	
				塊數	粒數	百分數	粒數	百分數	粒數	百分數
1	IV.30	V.1-5	V.10	7塊	343粒	88.86%	43粒	11.14	386粒	100%
2	V.5	V.6-13	V.15	4	254	100	0	0	254	100
3	..	..	V.15	3	156					
平均			逃	4.7	251	94.43	21.5	5.57%	313	

註：產出卵與腹中卵之平均百分數均以1與2兩號各相平均而得

## C. 誘蛾燈下誘殺蛾腹中遺卵之考查

蜂蛾號	去秋誘殺蛾腹中卵		總卵數	今春誘殺蛾腹中卵		總 卵 數
	成 熟	未成熟		成 熟	未成熟	
1	372粒		372粒	179粒		179粒
2	198		198	257		257
3	222		222	184		184
4	136	66粒	202	234		234
5	278	75	353	97	75粒	172
6	51		51	104	63	167
7	143	120	263	175	116	191
8	267	76	343	254		254
9	101	185	286	158	136	294
10	102	105	207	257		257
平 均	187	104.5	249.7	189.9	97.5	218.9

四、稗草螟蟲之觀察 此蟲于五月中下旬先後羽化，蛹期自16—25日，平均為18.1日，成蟲為灰色小蛾，形似二化螟而小，其前翅之前緣處具點紫色之帶紋，成蟲交尾後，二至三日產卵，卵塊極似二化螟，惟體積較小，卵粒呈長口形，初產時為灰玉色，過一日稍帶點黃色，二日後，卵面現紫色雲紋，放大鏡下視之，如龜甲状，在飼育室內產卵於葉上主脈近旁，稗草苗及秧苗上均有之，惟幼蟲能否加害水稻，須待孵化後證實之。

五、第一代稻螟蛉蛹之寄生率攷查 五月中下旬在早中稻秧田內採得稻螟蛉蛹96枚，檢查寄生率達40.6%，均係某種褐色小蜂所寄生。

六、攷查新豐春耕情形及螟蟲越冬死亡率 五月十二日赴新豐考查春耕情形及螟蟲越冬死亡率，據觀察該地畝田翻耕期最早在穀雨前三四日，最遲在清明後五六日，最遲在立夏後約十日，紫雲英田除留種者外，翻耕期與畝田略同。該地畝田及紫雲英種籽田所佔面積甚大，種蠶者往往不事翻耕灌水，紫雲英種籽田因收穫期甚遲，亦不能及時翻耕，此或係該處歷年螟害劇烈之主因。茲將該處紫雲英種籽田及已翻耕灌水18日之紫雲英田稻螟，檢查螟蟲死亡率如下：

田 別	蠶 數	三 化 螟			二 化 螟			附 註
		生	死	死亡率	生	死	死亡率	
紫雲英種籽田	200	3	4	57.14%	5			三化螟生蛹3枚 二化螟生蛹3枚
已翻耕灌水18日之紫雲英田	100		2		2			二化螟生蛹2枚

七、考查已翻耕浸水之畝田稻根螟蟲死亡率 本局稻蟲研究所農場畝田於五月一日翻耕灌水，嗣後每越五日檢測一次，共六次，計稻根3000選，其結果如下：

日期	選數	三化螟			二化螟			大螟		
		生	死	死亡率	生	死	死亡率	生	死	死亡率
V. 5	500		44	100%	8	4	40%	1	1	50%
10	,,		10	,,	3	2	40%			
15	,,		13	,,		2	100%			
20	,,		9	,,						
25	,,		25	,,	1					
30	,,		15	,,	1	1	50%			
總計	3000		116	,,	11	9	45%	1	1	50%

八、嘉興五月份誘蛾燈下過冬稻蟲之最初發現期

日期	蟲名
V. 5	粉白飛蟲，鶯色飛蟲，尾黑浮塵子，二點浮塵子，稻象蟲等五種
15	三化螟蛾，粗脈縱捲葉蟲等二種
17	黑褐飛蟲，大浮塵子及四點浮塵子等三種
19	紫色浮塵子絲飛蟲等二種。
23	闊肩浮塵子一種
24	方紋浮塵子一種
29	電光浮塵子一種

九、早中稻秧田內稻螟蛉煙粉防治試驗 五月十七日至十九日舉行煙粉防治早中稻秧田內之稻螟蛉幼蟲試驗，方法分撒粉後一，二，三，四，五小時等五組，煙粉用量以每畝六十斤計算，總死亡率自81.7%—100%，誠價廉效宏之藥劑也。

### (二) 湘第二農事試驗場棉蟲室研究綱要

該場於二十五年下半年度起增設棉蟲室其工作進行綱要業經厘訂，茲扼要摘錄如下：

- 調查方面：(1)棉蟲種類調查 (a)設置誘測燈 (b)舉行實地調查 (c)採集；  
 (2)棉蟲損失調查； (3)棉區農作制度調查。
- 研究方面：(1)研究方針(以實際需要兼事稻蟲研究)及室址選擇； (2)棉蟲生活史觀察； (a)紅鈴蟲 (b)大捲葉蟲 (3)防治方法之試驗 (a)紅鈴蟲及其他蛀果蟲防治試驗 (b)大捲葉蟲防治試驗 (c)棉蟲品種觀察。
- 推廣方面：(1)宣傳； (a)編印重要害蟲淺說及圖說 (b)注意小學講演及贈送標本； (2)示範； (3)代農民治蟲； (4)注意各合作場之害蟲防治； (5)推行已有優效之防治法。

設備：(1)圖書類；(2)儀器類；(3)玻璃器具類；(4)普通用具類殺蟲藥劑類。

### 論著摘錄

吳昌濟 -- 國內麥類黑穗病分佈調查第二次報告(附英文結論) -- 資部中央農實所特刊 15 號, 35 頁, 1 圖版, 5 表, 1936年10月。作者於22年秋至24年夏間徵集全國23省 298縣麥

類品種1022件, 施以肉眼, 顯微, 栽培等檢查, 復以實地調查, 斷定其罹病情形, 結果約如下述: 小麥散黑穗病 (*Ustilago Tritici*) 調查22省294縣, 發現罹病者19省184縣; 小麥丸腥黑穗 (*Tilletia laevis*) 調查22省283縣, 罹病者達15省72縣; 小麥網黑穗病 (*Tilletia Tritici*) 調查23省293縣, 罹病者16省65縣; 小麥稈黑穗病 (*Urocystis Tritici*) 調查22省290縣, 罹病者13省62縣。大麥堅黑穗病 (*Ustilago Hordei*) 調查23省251縣, 罹病者23省222縣; 大麥散黑穗病 (*Ustilago nuda*) 調查23省250縣, 罹病者17省129縣; 燕麥堅黑穗病 (*Ustilago laevis*) 調查13省56縣, 罹病者10省41縣; 又燕麥散黑穗病 (*Ustilago Avenae*) 發現於無錫及杭州; 黑麥散黑穗病 (*Ustilago Tritici*) 發現於南京。又以上病種發現各縣, 對於其調查總數所佔之百分率: 在小麥散黑穗病為 62.59%, 小麥稈黑穗為 21.38%, 小麥丸腥黑穗為 25.44%, 小麥網黑穗為 22.18%, 大麥散黑穗為 51.60%, 大麥堅黑穗為 88.45%, 燕麥堅黑穗為 73.68%; 其他於全國各地麥種中含有病毒之普遍, 麥種中黑穗病毒含量之鉅大, 均有數字之表出。

(夏慎修)

Yang, We-l [楊惟義] -- The Distribution of Chinese Insects as shown in the families of Plataspidae, Pentatomidae, Urostylidae, Cydnidae & Some Other families. (*Plataspidae*, 臭椿象科, *Urostylidae*, 蟻椿象科及其他數科在中國之分佈) -- *Pek. Nat. Hist. Bull.*, xi (4): 309-320, 13 refs., 1 pl. June 1937. 本文根據巴黎博物院英倫博物院及靜生生物調查所歷年所採標本, 首述上列各科在中國那幾省之種屬數, 次為各區域所佔上列數科各種之百分數及重要種類, 後為華南與華北此類昆蟲之色澤與大小之區別; 蟲之分佈與溫度環境之關係其結論如下: (一) 中國蟲相之分佈可分五區: 南洋區包含浙、蘇、閩、粵、西康(北部除外), 西藏之東南邊境, 陝西南部(終南山以南) 鄂西暨蘇皖南部。舊北區包含內外蒙古新疆(大戈壁除外), 東三省, 晉(南部除外) 甘, 青海, 冀北(北平以北) 陝(終南山之北) 西康及蜀之西北部; 中央區包含魯, 豫, 蘇北, 皖(揚子江北) 冀南(北平以南) 晉南及鄂東; 中亞區包含新疆及蒙古之大戈壁; 西藏區包含西藏高原介乎喜馬拉雅山與崑崙山之間(藏之東南邊界除外)。上列數科之種類中, 66%分佈於南洋區; 23%分佈於舊北區; 10%分佈於中央區; 1%分佈於中亞區; 西藏高原則無之。(2) 蟲之色澤大小, 華南與華北不同。(3) 蟲之分佈與溫度及環境因子頗有關係如: 食料與農業, 山之界限, 池沼湖河海洋及濕度, 泥土, 沙漠及岩石, 天敵及動物寄主, 交通, 地球之地質變化等。

(夏慎修)

**Liu, C. I.** [劉汝樂] -- A Bibliographic & Synonymic Catalogue of the *Vespidae* of China With a Cross-Referring Index for the Genera & Species (Part II Alphabetical Index: Genera & Species (中國胡蜂科名錄及種屬之互見索引續) II 種及屬之索引) -- *Ibid.*, 331 - - 350.

**Cheo, Ming-tsang** [周明祥] -- A preliminary List of the Insects & Arachnids to Economic Plants in China (中國經濟植物害蟲及節肢類動物表) -- *Ibid.*: 417-432. 本文續上期之害蟲類，包含天藍蛾11種，虹日蝶6種，天蛾2種，蠶蛾1種，捲葉蛾15種，燕蛾1種，木蠹蛾1種，斑蛾4種；線蟲25種，蜘蛛14種，蟻蝨4種，竹節蟲3種，螽蟴10種，管蠶馬3種，蠶馬5種。

**Hsu, Yin-Chi** [徐蔭祺] -- The Mayflies of China (中國之蜉蝣) (續上期) -- *Ibid.*, 433-440. 本期所發表之種類如下：*Ephemera pulcherrima* Eaton 福建、廣東；*E. purpurata* Ulmer, Kouy-Tohéou (?), *E. sauteri* Ulmer, 廣州羅浮山，*E. serica* Eaton 華北，香港及廣東，*E. shengmi* n. sp. 其模式標本採自江西生米副模式標本採自南昌。 (夏慎修)

**Wu, (Lenfu F.** [胡經甫] -- The Stoneflies of China (中國之石蠅) -- *Ibid.*, 441-2. 本期所載僅有一種：*Oymia nigribasis* Banks 分述屬及種之特徵，其模式標本及別模式標本均發現於鴨綠江。 (夏慎修)

**Drault, Max** -- Neue Agrotiden (=Noctuiden) Arten und Formen aus den Ausbeuten Von Herrn H. Hone, Shanghai. (上海漢粹氏所採夜蛾之新種新型) (續上二期) -- *Entomologische Rundschau* liv (32), 397-401, May 1937. 本期所載新種7，新亞種1：*Acronicta alni intensiva* 陝西秦嶺太白山 (p. 397)；*A. novella* 同上 (p. 397)；*A. agnata* 湖南衡山 (p. 398)；*A. edolatina* 秦嶺太白山及滇北瀾江 (p. 398)；*A. concepta* 秦嶺太白山 (p. 398-9)；*A. insitiua* 滇北瀾江 (p. 399)；*Trisuloides contaminata* 瀾江，太白山，天目山 (p. 399-400) *T. chekiana* 浙江天目山 (p. 400). (夏慎修)

**Osborn, H. T.** -- Studies on the transmission of pea virus 2 by aphids (蚜蟲傳佈豌豆視外生物病2之觀察) -- *Phytopath.* V (5): 589-603, 4 figs., 4 Tabs., 13 refs. May 1937. 下為作者之結論：一種視外生物所致之嵌工病(豌豆視外生物病2)係菜區中豌豆、甜豌豆、野豌豆、紅金花菜、紫金花菜及數種豆類之蚜蟲(*Vicia faba*)所傳佈，惟威斯康辛抵抗性豌豆則無感染性。病原在62°C十分鐘間，頗為活動，惟至64°C時十分鐘間即失活動力。又若在 *Vitro* 內歷時四日猶可活動，五日後活動力旋即消失。豌豆蚜、馬鈴薯蚜及莖蚜之幼蟲及成蟲等皆能傳佈此病。此類蚜蟲每種之羣取食於罹病植物五分鐘間即能得病；隨後五分鐘間可傳佈於健全植物。一羣之蚜蟲若于十五分鐘間至健全植物則已失其感染力。任何一羣若在健全植物上繼續一小時，則病原之持久性不能

超越一小時。若使蟲與食物離隔時，豆蚜可保存病原達5小時，豌豆蚜8小時，馬鈴薯蚜24小時。豌豆蚜馬鈴薯蚜及豆蚜在罹病植物上取食一日後遷至健全植物上繼續達十四日則可知病原無潛伏期。  
(夏慎修)

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