菌物系统 18(2):121～124,1999
Mycosystema

TAXONOMIC STUDIES OF *ALTERNARIA* FROM CHINA II. NEW SPECIES AND NEW RECORDS ON AMARANTHACEAE, BASELLACEAE AND CHENOPODIACEAE

ZHANG Tian-Yu

(*Department of Plant Protection, Shandong Agricultural University, Taian, Shandong*, 271018)

ZHANG Jing-Ze CHEN Wei-Qun GAO Min-Xia

(*Department of Plant Protection, Northwestern Agricultural University, Yangling, Shaanxi*, 712100)

ABSTRACT 3 new species and 2 new records of *Alternaria* are reported. The type specimens are deposited in Herbarium of Shandong Agricultural University, Plant Pathology (HSAUP).

KEY WORDS: new species, *A. achyranthis*, *A. basellae*, *A. chenopodiicola*, new records, *A. celosiae*, *A. spinasiae*

Taxa on Amaranthaceae

Alternaria achyranthis J.Z. Zhang et T.Y. Zhang, sp. nov. Fig.1

Maculae suborbiculares, griseae, 5mm diam. Caespituli epiphylli. Conidiophora solitaria, pallide brunnea vel brunnea, non ramosa, recta vel geniculata, septata, 25.5～48.5 × 3.5～7μm. Conidia solitaria vel breviter catenata, obclavata, obpyriformia vel ellisoidea, leviter flavo-brunnea, 3～5 transverse septata, 0～3 longitudinaliter vel oblique septata, echinata, 33.5～45 × 13.5～17.5μm. Rostra cylindrica vel triangulariter subulata, pseudorostra geniculata, non septata, 7.5～45 × 3.5～5μm.

Hab. in foliis vivis *Achyranthis bidentatae* Bl., Xian, Shaanxi Provincia, HSAUP 950200(= ZW93-269), holotypus.

Leaf spots circular to subcircular, greyish, ca. 0.5cm in diam. Fruiting mainly epiphyllous. Conidiophores solitary, erect, straight to geniculate unbranched, septate, pale brown to brown, paler towards the apex, 25.5～48.5 × 3.5～7μm; Conidia solitary or in short chains, obclavate, obpyriform or ellipsoidal, slightly narrower at base ends, pale yellowish brown to brown, with 3～5 transverse and 0～3 longitudinal or oblique septa, some conidia with verrucose surface, 33.5～45 × 13.5～17.5μm excluding beaks; Rostra shorter or the same length as spore bodies, cylindrical or sometimes conical, aseptate, some of them may transform into secodary conidiophores (pseudorostra) and become geniculate, 7.5～45 × 3.5～5μm.

Holotype: HSAUP 950200 (= ZW93-269), on leaf spots of *Achyranthes bidentata* Bl., Xian, Shaanxi province, Zhang Jing-ze & Wang Jin, 29 Sept. 1993.

The project supported by NSFC (39391800) and SMLL.

Received 1998-03-26, Revised 1998-04-07.

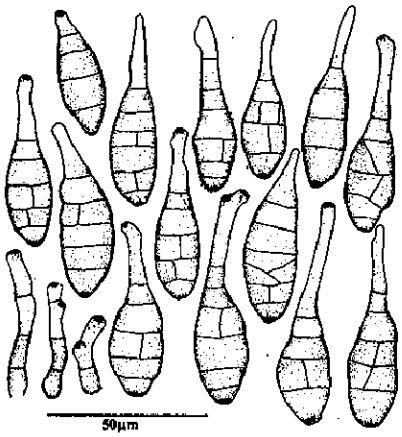

Fig.1 *Alternaria achyranthis* J.Z.Zhang & T.Y.Zhang. Conidia and conidiophores ex HSAUP 950200, the holotype.

Discussion: Three species have been described on species of Amaranthaceae. Among them, A. alternantherae Helcomb & Antonopoulos (1976) has been transfered to the genus *Nimbya* by Simmons (1995) as *N. alternantherae* (Helc. & Antonop.) Simmons & Alcorn. *A. achyranthis* can be easily distinguished from *A. amaranthi* (C. H. Peck) van Hook by its conidial shape. The other most closely related species is *A. celosiae* (Tassi) O. Savulescu (1968). However, the character of that the conidia of the new taxon have only 0–3 longitudinal and oblique septa clearly differentiates it from *A. celosiae* (Tassi) O. Savulescu.

Alternaria celosiae (Tassi) O. Savulescu.

Herb. Mycol. Roman. "Tr. Savulescu". Bucuresti. (1968). P.770

Macrosporium celosiae Tassi, Bull. Labor. Orto Botan. Siena 4:12. 1901.

Specimen examined: HSAUP 950201 (= ZW93049) on leaf spots of *Amaranthus* sp., J. Z. Zhang & J. Wang, Xian, Shaanxi, 22 Sept. 1993.

This species is a new record to China.

Taxon on Basellaceae

Alternaria basellae **T.Y. Zhang, sp. nov., Fig.2**

Maculae orbiculares, centro albae vel pallide brunneae, margine subpurpuratae, 2～10 mm diam. Caespituli epiphylli. Conidiophora plerumque solitaria, infuscata, ramosa vel non ramosa, septata, 17.5～58.5 × 3～4μm. Conidia solitaria vel breviter catenata, infuscata vel brunnea, obclavata, 5～8 transverse septata, 2～7 longitudinaliter vel oblique septata, distincte constricta, (21.5～)27.5～43.5(～55.5) × 9～11.5(～13) μm. Rostra cylindrica, septata, pseudorostra ad apicem leviter sufflata, (0～)7～66.5(～125) × 2.5～4μm.

Hab. in foliis vivis *Basellae rubrae* L., Yangling, Shaanxi Provincia, HSAUP 950006(= ZTY94-002), holotypus; Leling, Shandong Provincia, HSAUP 950240(= ZTY95-234); Taian, Shandong, HSAUP 950241 (= ZTY95-220); Milin, Xizang (Tibet), HSAUP 950113(= ZTY95-113).

Leaf spots circular, whitish grey to pale brown in

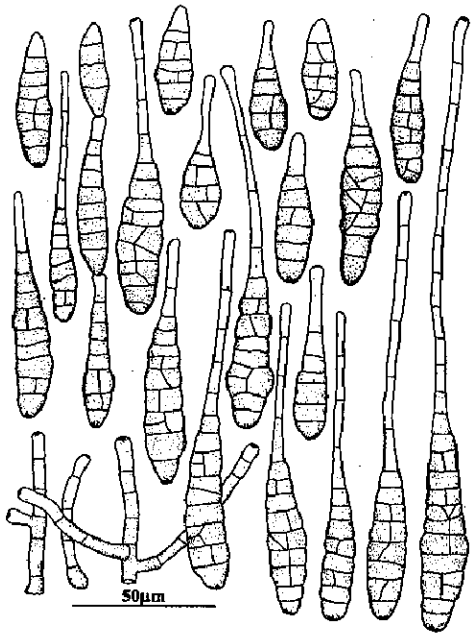

Fig.2 *Alternaria basellae* T.Y. Zhang. Conidia and conidiophores ex HSAUP 950006, the holotype.

the central area, olivaceous brown in peripheral area, with a subpurple margin, 2～10mm in diam. Fruiting mainly epiphyllous. Conidiophores solitary or in small fascicles, light brown, branched or unbranched, septate, 17.5～58.5 × 3～4μm; Conidia solitary or in short chains, obclavate, light brown to brown, spore body with 5～8 (often 7) transverse and 2～7 (often 4) oblique and longitudinal septa, constricted at septa, (21.5～) 27.5～43.5(～55.5) × 9～11.5(～13)μm; Rostra and pseudorostra cylindrical, septate, often swollen at apex of pseudorostra, (0～)7～66.5(～125) × 2.5～4μm.

Holotype: HSAUP 950006(= ZTY94-002), on leaf spots of *Basella rubra* L., Yangling, Shaanxi, T.Y.Zhang. 15 Aug.1994.

Specimens examined: On leaf spots of Basella rubra L., include HSAUP 950240 (=ZTY95-234), Leling, Shandong, T. Y. Zhang,8 Oct. 1995; HSAUP 950241 (= ZTY95-220), Taian, Shandong, T. Y. Zhang, 3 Aug. 1995; HSAUP 950113 (= ZTY95-113), Milin, Xizang (Tibet), T.Y. Zhang, 19 July 1995.

This is the first report of an *Alternaria* species parasitizing species of Basellaceae to cause remarkable leaf spots.

Taxa on Chenopodiaceae

Alternaria chenopodiicola T.Y. Zhang, W.Q. Chen et M.X. Gao, sp. nov. Fig.3

Maculae irregulares, flavo-brunneae. Caespituli hypophylli. Conidiophora solitaria vel fasciculata, infuscata, recta vel curvata, ramosa vel non ramosa, septata, 20～70 × 4～6μm. Conidia solitaria vel breviter catenata, flavo-brunnea, obclavata, obpyriformia vel longe ellipsoidea, 5～8 transverse septata, 3～6 longitudinaliter vel oblique septata, leviter constricta, 33～62 × 12～18μm. Rostra infuscata, plerumque 1 septata, 20～46 × 2.5～6μm.

Hab. in foliis vivis *Chenopodii glauci* L., Qufu, Shandong Provincia, HSAUP 950251 (= CG95-092), holotypus.

Leaf spots mostly at the point ends of the blades, irregular, yellowish brown. Fruiting mainly hypophyllous. Conidiophores solitary or fasciculate, branched or unbranched, erect, straight or geniculate, septate, light brown, 20～70 × 4～6μm; Conidia yellowish brown, solitary or in short chains, obclavate, obpyriform or ellipsoidal, with 5～8 transverse and 3～6 longitudinal and oblique septa, 33～62 × 12～18μm excluding beaks; Rostra light brown, mostly with 1 septum, cylindrical, 20～46 × 2.5～6μm.

Holotype: HSAUP 950251 (= CG95-092), on leaf spots of *Chenopodium glaucum* L., Qufu, Shandong, China, Y, Chen and M.X. Gao, 25 Sept. 1995.

Discussion: 3 taxa at species level have been described so far on species of Chenopodiaceae. Among them, *Alternaria salicorniae* H.Riedl & Ershad (1977) has small spores (24～30 × 8～12μm) and looks morphologically very similar to *A. alternata* (Fr.) Keissl., *A. chenopodii* Raabe (1939) has relatively narrow (10～12μm) and long beaked conidia. In conidial morphology, *A.chenopodiicola* is close to *A.spinaciae* Allesch et Noack (see saccardo, 1902). Longitudinally and obliquely multi-septate

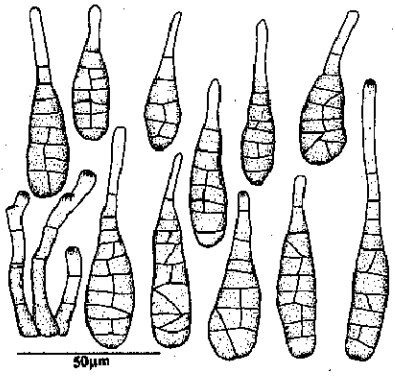

Fig.3 *Alternaria chenopodiicola* Zhang, Chen et Gao. Conidia and conidiophores ex HSAUP 950251, the holotype.

and short beaked conidia of *A. chenopodiicola* readily differentiate it from *A. spinaciae* which has distinctly cylindrically beaked conidia.

Alternaria spinaciae Allesch et Noack

Bolet. Instit. Agron. do Estago de sao paulo em Campinas (1898), 9(2):83.

Specimens examined: HMUABO 100680, on leaf spots of *Spinacia oleracea* L. Yangling, Shaanxi; HSAUP 950142 (= TYZ95-142), T. Y. Zhang, 20 July 1995, Milin, Xizang (Tibet).

This species is a new record to China.

ACKNOWLEDGEMENTS We are grateful to prof. Y. L. Guo for preparing the latin diagnoses, Mr. F.C. Meng for inking the line drawings.

REFERENCES

Holcomb GE, AA Antonopoulos, 1976. *Mycologia* **68**(5):1125～1129.

Raabe A, 1939. Parasitische pilze der Umgebung von Tubingen. *Hedwigia* **78**:86.

Riedl H, D Ershed, 1977. *Sydowia* **29**(1～6):155～169.

Saccardo PA, Sylloge Fungorum: (1899)14:1096; (1902) 16:1080 (1906)18:619.

Savulescu Tr, 1968. Herbarium Mycologicum Romanicum "Tr. Savulescu", Bucuresti, P. 770. [A. Celosiae (Tassi) Olga Savulescu].

Simmons EG, 1995. *Alternaria* themes and Variations (112～144). *Mycotaxon* **55**:142～144.

中国链格孢属的分类研究 II.
生于苋科、落葵科和藜科植物上新种与新记录种

张天宇 张敬泽 陈伟群 高民侠

(山东农业大学植保系 山东 泰安 271018) (西北农业大学植保系 陕西 杨凌 712100)

摘 要 链格孢生于苋科植物上新种一个，*Alternaria achyranthis*，新记录种一个，*A. celosiae*；生于落葵科植物上的新种一个，*A. basellae*；生于藜科植物上的新种一个，*A. chenopodiicola*，中国新记录种一个，*A. spinaciae*。新种模式标本保藏在山东农业大学植物病理学标本室(HSAUP)。

关键词：新种，牛膝链格孢，落葵链格孢，藜生链格孢，新记录，青葙链格孢，菠菜链格孢

中图分类号 Q939.5 **文献标识码** A **文章编号** 1007-3515 (1999) 02-0121-0124

国家自然科学基金资助项目(39391800)