

FUNGI OF AJMER (RAJASTHAN)—I.

By N. C. JOSHI

Botany Department, Government College, Ajmer

FIFTY-FIVE species of both pathogenic and non-pathogenic fungi belonging to different groups and their respective hosts have been recorded for the first time from Ajmer and are listed in this paper.

SINCE 1952, the writer with the co-operation of his colleagues and post-graduate students started collecting fungi from Ajmer in order to have some idea about their occurrence and distribution in this locality. These collections have been kept in the Mycology Herbarium of the Botany Department, Government College, Ajmer and some interesting ones have been deposited at C.M. 1, Kew, Surrey, England and Herb. Crypt. Indiae, Orient, New Delhi, India.

LIST OF FUNGI

1. BREMIA LACTUCAE Regl. (*Sacc**. VII : 244; *B. & B***., 2).

On living leaves of *Sonchus oleraceus* L. (Compositae) Govt. College Campus, 6-8-1950, Leg A. N. P., Myco. Herb. No. 1 (Conidial stage).

2. ALBUGO CANDIDA (Pers.) Léveille (*Sacc*. VII : 334; *B. & B.*, 3)

On living leaves of *Brassica campestris* L. (Cruciferae), Bot. Garden, Govt. College, 15-8-1950, Leg N. C. J., Myco. Herb. No. 2 (Conidial stage only); of *Raphanus sativus* L. (Cruciferae), Victoria Hospital, 3-11-1952, Leg N. C. J., Myco. Herb. No. 6 (Conidial Stage).

3. ALBUGO IPOMOEAE-AQUALIGAE Sawada

On living leaves of *Ipomoea reniformis* Choisy (Convolvulaceae), Taragarh, 8-8-1952, Leg N. C. J., Myco. Herb. No. 3 (Conidial stage).

4. ALBUGO PORTULACAE (D.C.) Léveille (*Sacc*. VII : 235; *B. & B.*, 3)

On living leaves of *Portulaca oleracea* L. (Portulacaceae), Government College Campus, 8-8-1952, Leg. N. C. J., Myco. Herb. No. 4 (Conidial stage).

5. ALBUGO BLITI (Biv.) deBary (*Sacc*. VII : 236; *B. & B.*, 2)

On living leaves of *Amarantus paniculatus* L. (Amarantaceae), Bot. Garden, Govt. College, 15-8-1952, Leg N. C. J., Myco. Herb. No. 5

* *Sacc.* = Saccardo, P.A.

** *B. & B.* = Butler, E. J. & Bisby, G. R.

(Conidial stage); of *Digera arvensis* Forsk. (Amarantaceae), Pushkar valley 10-8-1952, Leg N. C. J., Myco. Herb. No. 8 (Conidial stage).

6. ALBUGO PLATENSIS Speg. (*Sacc.* XI : 242; *B. & B.*, 3).

On living leaves of *Boerhaavia diffusa* L. (Nyctaginaceae), Civil lines, 6-9-1953, Leg N. C. J., Myco. Herb. No. 6 (Conidial stage).

7. PERENOSPORA EFFUSA (Grev.) Raben. (*Sacc.* VII : 256; *B. & B.*, 4)

On living leaves of *Chenopodium album* L. (Chenopodiaceae), Tabeji Farm, 2-2-1953, Leg N. C. J., Myco. Herb. No. 9 (Conidial stage).

8. PERENOSPORA TRIFOLIUM deBary (*Sacc.* VII : 249; *B. & B.*, 4)

On living leaves of *Melilotus alba* Desv. (Leguminosae), Pushkar Fields, 6-10-1954, Leg N. C. J., Myco. Herb. No. 10 (Conidial stage).

9. PERENOSPORA PARASITICA (Pers.) deBary (*Sacc.* VII : 249; *B. & B.*, 4)

On living leaves of *Brassica campestris* L. (Cruciferae), Link Road, 6-10-1953, Leg N. C. J., Myco. Herb. No. 11 (Conidial stage).

10. PERENOSPORA CELSIAE Syd. (*Sacc.* XXIV : 60; *B. & B.*, 4)

On living leaves of *Celsia coromandeliana* Vahl. (Scrophulariaceae), Foysagar, 2-2-1953, Leg N. C. J., Myco. Herb. No. 12 (Conidial stage).

11. PHYTOPHTHORA COLOCASIAE Raciborski (*Sacc.* XVI : 292; *B. & B.*, 5)

On living leaves of *Colocasia antiquorum* Schott. (Araceae), Beer Village, 2-3-1953, Leg N. C. J., Myco. Herb. No. 13 (Conidial stage).

12. SCLEROSPORA GRAMNICOLA (*Sacc.*) Schroeter (*Sacc.* VII : 238; *B. & B.*, 7)

On living leaves and the inflorescence of *Pennisetum typhoideum* Rich. (Gramineae), Adarsh Nagar, 11-11-1952, Leg N. C. J., Myco. Herb. No. 14 (Conidial and oosporic stages).

13. RHIZOPUS NIGRICANS Ehrenberg (*Sacc.* VII : 212; *B. & B.*, 9)

Isolated from the soil, Govt. College Campus, 6-9-1953, Leg N. C. J., Myco. Herb. No. 15 (Asexual stage).

14. ASPERGILLUS CANDIDUS Link. (*Sacc.* IV : 66; *B. & B.*, 139)

A contaminant in the culture media in the Botany Laboratory, 3-9-54, Leg N. C. J., Myco. Herb. No. 16 (Conidial stage).

15. CAPNODIUM RAMOSUM Cooke (*Sacc.* XI : 271; *B. & B.*, 18)

On living leaves of *Mangifera indica* L. (Anacardiaceae), Happy valley, 3-9-1954, Leg N. C. J., Myco. Herb. No. 17 (Conidial and the perithecial stages).

16. CAPNODIUM CITRI Berk. and Desen. (*Sacc.* I : 78)

On living leaves of *Citrus* Sp. (Myrtaceae), Pushkar, 3-9-1953, Leg B. S., Myco. Herb. No. 18 (Conidial and perithecial stages).

17. ERYSPHE POLYGONI D.C. (*Gaur*, 1949; *Joshi*, 1956)

On living leaves and twigs of *Cuminum cyminum* L. (Umbelliferae), Kekri, 3-3-1953, Leg N. C. J., Myco. Herb. No. 19 (Conidial stage).

18. ERYSIPIHE CICHORACEARUM D.C. (*B. & B.*, 22)

On living leaves and twigs of *Coccinia indica* (Cucurbitaceae), Nasirabad Road, 2-2-1953, Leg A. N. P., Myco. Herb. No. 20 (Conidial and perithecial stages).

19. PROTOMYCES MACROSPORUS Unger. (*Sacc.* VII : 319 ; *B. & B.*, 9)

On living leaves, stem and branches of *Coriandrum sativum* L. (Umbelliferae), Civil Lines, 1-1-1950, Leg B. D. T., Myco. Herb. No. 21A (Resting spores).

20. PROTOMYCOPSIS AJMERENSIS Gupta (*Gupta*, 1956)

On living leaves of *Sesbania aculeata* Pers. (Leguminosae), Anasagar (Lake), 8-9-1950, Leg B. B. T., Myco. Herb. No. 21B (Resting spores).

21. PHYLLACTINIA CORYLEA var. SUBSPIRALIS Salmon (*B. & B.*, 35)

On living leaves of *Dalbergia sissoo* Roxb. (Leguminosae), Kishangarh Road, 2-2-1952, Leg N. C. J., Myco. Herb. No. 22 (Conidial and perithecial stages).

22. PHYLLACHORA CYNODONTIS (Sacc.) Niessel (*Sacc.* II : 602 ; *B. & B.*, 33)

On living leaves of *Cynodon dactylon* Pers. (Gramineae), Civil lines, 1-1-1953, Leg N. C. J., Myco. Herb. No. 23 (Perithecial stage).

23. XYLARIA ASPERSA Masee (*Sacc.* XVI : 444 ; *B. & B.*, 41)

On soil, Bot. Dept. Campus, 2-3-1952, Leg N. C. J., Myco. Herb. No. 24.

24. PSALLIOTA CAMPESTRIS L. (*Sacc.* V : 997 ; *B. & B.*, 84)

On soil, Foyasagar, 8-9-1953, Leg N. C. J., Myco. Herb. No. 25.

25. COPRINUS NIVEUS (Pers.) Fr. (*Sacc.* V : 1088 ; *B. & B.*, 89).

On dung and heaps of rotten straw, Lohagal Village, 6-9-1953, Leg N. C. J., Myco. Herb. No. 26.

26. GANODERMA LUCIDUM (Leyss.) Karst. (*Sacc.* VI : 157 ; *B. & B.*, 98)

On trunks of old trees, Mayo College Road, 6-8-1953, Leg Sunita, Myco. Herb. No. 27.

27. SCIZOPHYLLUM COMMUNE Fr. (*Sacc.* V : 655 ; *B. & B.*, 128)

On moist dead wood at Kishangarh Road, 11-8-1953, Leg N. C. J., Myco. Herb. No. 28.

28. PODAXON CARCINOMALIS (L.) Fr. (*Sacc.* VII : 588 ; *B. & B.*, 137)

On moist soil, Foyasagar, 4-9-1954, Leg N. C. J., Myco. Herb. No. 29.

29. MELAMPSORA LINI (Pers.) Lév. (*Sacc.* VII : 588 ; *B. & B.*, 60)

On living leaves, twigs and branches of *Linum usitatissimum* L. (Linaceae), Bot. Dept. Garden, Govt. College, 12-2-1950, Leg B. T., Myco. Herb. No. 30 (Uredo- and Teleuto-stages).

30. *HAPLOPHRAGMIOPSIS PONDEROSUM* (Syd. & Butler) Thirum. (*B. & B.*, 59)

On living twigs of *Acacia leucophloea* Willd. (Leguminosae), Lohagal Road, 3-1-1952, Leg N. C. J., Myco. Herb. No. 31 (Telial stage).

31. *PUCCINIA HETEROSPORA* Berk. and Curt. (*Sacc.* VII : 695; *B. & B.*, 68)

On living leaves of *Sida* sp. (Malvaceae), Chamunda, 1-1-1953, Leg N. C. J., Myco. Herb. No. 32 (Telial stage).

32. *PUCCINIA GLUMARUM* (Schum.) Eriks. and Henn. (*Sacc.* XVII : 380; *B. & B.*, 67)

On living leaves, culms and glumes of *Triticum* sp. (Gramineae), Tabeji Farm, 2-2-1954, Leg N. C. J., Myco. Herb. No. 33 (Uredinial and Telial stages); also on living leaves, culms and glumes of *Hordeum vulgare* (Gramineae), Kishangarh Road, 12-2-1953, Leg N. C. J., Myco. Herb. No. 34 (Uredinial and Telial stages).

33. *PUCCINIA GRAMINIS* Pers. (*Sacc.* VII : 622; *B. & B.*, 67-68)

On living leaves, culms and glumes of *Triticum* sp. (Gramineae), Tabeji Farm, 3-4-1952, Leg N. C. J., Myco. Herb. No. 35 (Uredinial and Telial stages).

34. *PUCCINIA TUMIDEPES* Peck. (*Dalela*, 1956)

On living leaves of *Lycium europaeum* L. (Solanaceae), Tabeji Farm, 6-4-1954, Leg N. C. J., Myco. Herb. No. 36 (Uredinial and Telial stages).

35. *MELAMPSORA HELIOSCOPIAE* (Pers.) Wint. (*Sacc.* VII : 586; *B. & B.*, 60)

On living leaves of *Euphorbia dracunculoides* Lamk. (Euphorbiaceae), Anteer, 3-4-1954, Leg C. R., Myco. Herb. No. 37 (Uredinial and Telial stages).

36. *RAVENELIA AJMERENSIS* Sanwal

On living leaves of *Acacia* sp. (Leguminosae), Adarsh Nagar, 11-11-1953 Leg B. D. T., Myco. Herb. No. 38 (Uredinial and Telial stages).

37. *RAVENELIA SESSILIS* Berk. (*Sacc.* VII : 773; *B. & B.*, 77)

On living leaves and pods of *Albizzia lebbek* Benth. (Leguminosae), Civil lines, 10-11-1953, Leg N. C. J., Myco. Herb. No. 39 (Uredinial and Telial stages).

38. *RAVENELIA ORNATA* Syd. (*Sacc.* XXI : 738; *B. & B.*, 77)

On living leaves of *Abrus precatorius* L. (Leguminosae), Lohagal Rade, 17-12-1954, Leg N. C. J., Myco. Herb. No. 40 (Telial stage).

39. *TROCHODIUM AJREKERI* Gharse (*Gharse*, 1949)

On living leaves of *Rivea ornata* var. *Griffithii* Cl. (Convolvulaceae), Foyasagar, 6-12-1953, Leg N. C. J., Myco. Herb. No. 41 (Uredinial, Telial and Aecidial stages).

40. PERICLADIUM GREWIAE Pass. (Sacc. VII : 838 ; *Thirumulachar & Mundkur*, 1951)
On twigs, petiole and stem of *Grewia orbiculata* Rottl. (Tiliaceae), Adarsh Nagar, 15-9-1954, Leg N. C. J., Myco. Herb. No. 42.
41. SPHACELOTHECA SORGHI (Link.) (Clinton (B. & B. 46; *Thirumulachar & Mundkur*, 1951)
In ovaries of *Sorghum vulgare* Pers., Pushkar, 9-11-1953, Leg N. C. J., Myco. Herb. No. 43.
42. SPHACELOTHECA MACALPINEAE Zundel (*Joshi*, 1955)
In inflorescence of *Andropogon controtus* L. (Gramineae), Foyasagar, 10-10-1952, Leg N. C. J., Myco. Herb. No. 44 (This pathogen produces long whip-like structure like that in sugarcane).
43. USTILAGO HORDEI (Pers.) Killerm. and Swingle (Sacc. IX : 263 ; *Thirumulachar & Mundkur*, 1951)
In spikelets of *Hordeum vulgare* L. (Gramineae), Pushkar, 2-2-1953, Leg N. C. J., Myco. Herb. No. 45.
44. USTILAGO TRITICI (Pers.) Jensen (Sacc. IX : 283; B. & B., 5; *Thirumulachar & Mundkur*, 1951)
In spikelets of *Triticum vulgare* (Gramineae), Pushkar, 2-2-1953, Leg. N. C. J., Myco. Herb. No. 46.
45. USTILAGO SPARSA Underwood (Sacc. XIV : 416 ; *Thirumulachar & Mundkur*, 1951)
In ovaries of *Eleusine aegyptiaca* (Gramineae), Foyasagar, 13-11-1953, Leg N. C. J., Myco. Herb. No. 47.
46. USTILAGO CYNODONTIS Henn. (Sacc. XIV : 416; B. & B., 48)
In inflorescence of *Cynodon dactylon* Pers. (Gramineae), Taragarh, 17-11-1954, Leg N. C. J., Myco. Herb. No. 48.
47. USTILAGO SCITAMINEA var. SACCHARI-OFFICINARUM Mundkur (*Thirumulachar & Mundkur*, 1951)
In inflorescence of *Saccharum officinarum* L. (Graminae), Buddha Pushkar, 6-11-1952, Leg N. C. J., Myco. Herb. No. 49.
48. ALTERNARIA BURNSII Uppal. Patel and Kamat (*Joshi*, 1956)
On living leaves and shoots of *Cuminum cyminum* L. (Umbelliferae), Kishangarh Road, 2-2-1954, Leg N. C. J., Myco. Herb. No. 50 (This fungus causes a serious disease of Cumin in this State).
49. ALTERNARIA ALLI Nolla
On living leaves of *Allium cepa* L. (Liliaceae), Kekri, 3-3-1953, Leg J. P. A., Myco. Herb. No. 51 (This pathogen causes an epiphytotic disease on *Allium cepa* L.).
50. CERCOSPORA PERSONATA Berk. and Curt. (Sacc. IV : B. & B., 143)
On living leaves, petiole and stem of *Arachis hypogoea* (Leguminosae), Kekri, 2-2-1954, Leg N. C. J., Myco. Herb. No. 52.

51. CERCOSPORA CAPSICI Heald and Wold. (*B. & B.*, 141)

On living leaves of *Capsicum annuum* L. (Solanaceae). Pushkar, 6-9-1953, Leg N. C. J., Myco. Herb. No. 53.

52. CERCOSPORA FOENICULI Magn. (*B. & B.*, 142)

On living leaves, stem and fruits of *Foeniculum vulgare* (Umbelliferae), 6-5-1953, D. A. V. College, Ajmer. Leg N. C. J., Myco. Herb. No. 54.

53. CEPHALOSPORIUM CURTIPES Sacc. (*Joshi*, 1954)

In seeds of *Ricinus communis* L. (Euphorbiaceae), Bot. Dept., 6-9-1953, Leg N. C. J., Myco. Herb. No. 55.

54. FUSARIUM MONILIFORME Sheldon (*Mundkur*, 1938).

Isolated from the diseased endosperm of the castor seeds, Bot. Dept., 6-9-1953, Leg N. C. J., Myco. Herb. No. 56.

55. RHIZOCTONIA SOLANI Kuhn. (*Shaw et al.*, 1915)

On fruits of *Lycopersicum esculentum* L. (Solanaceae), 2-1-1955, Beer Village, Leg N. C. J., Myco. Herb. No. 57. (On the fruits of *Lycopersicum esculentum* L. causing a serious disease in this State).

ACKNOWLEDGEMENT

The author is grateful to Dr. M. J. Thirumalachar and Dr. S. P. Gordon for the identification of some of the Fungi and to Mr. M. B. Raizada for the identification of some of the hosts. Thanks are also due to the Principal, Government College, Ajmer and to Prof. B. Tiagi for facilities.

REFERENCES

- Butler, E. J. and Bisby, G. R. (1931). *The Fungi of India*, I. C. A. R., Sci. Mono., No. 1.
- Gaur, M. M. (1949). Diseases of Cumin and Fennel. *Plant. Prot. Bull.* **6**, 20-21.
- Dalela, D. D. (1956). *Puccinia tumidipes* Peck on *Lycium europaeum* L. *Indian Phytopathology*, **9**, 74.
- Gharse, P. S. (1949). Life-history and morphology of *Trochodinium ajrekeri* sp. nov., *J. Ind. Bot. Soc.*, **23**, 53-58.
- Gupta, J. S. (1956). A new species of *Protomyces* on *Sesbania aculeata* Pers., *Indian Phytopathology*, **9**, 72-73.
- Joshi, N. C. (1954). Rotting of castor seeds by *Cephalosporium curtipes* Sacc. *Sci. and Cult.*, **20**, 242.
- Joshi, N. C. (1955). Occurrence of *Sphacelotheca megalpiniae* Zundel on *Heteropogon contortus* L. *Curr. Sci.*, **24**, 62-63.
- Joshi, N. C. (1956). Two diseases of *Cuminum cyminum* L. from Ajmer State and methods of their control. *Sci. and Cult.*, **21**, 101-102.
- Mundkur, B. B. (1938). *Fungi of India*, Supplement—1, I. C. A. R., Sci. Mono. No. 12.
- Saccardo, P. A. (1882-1931). *Sylloge fungorum omnium hucusque cognitorum*, **1-25**.
- Sanwal, B. D. (1951). Some note-worthy *Ravenelias* from India. *Sydowia*, **5**, 412-417.
- Shaw, F. J. F. et al. (1915). The genus *Rhizoctonia*. *Mem. Dept. Agri., India.* Bot. Sr. 7, 179-184.
- Thirumalachar, M. J. and Mundkur, B. B. (1951). *Ustilaginales of India*. C.M.I., Kew Surrey, England.

(Received for Publication 15 April 1957)