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Novel fungal taxa from the arid Middle East introduced prior to the year 1940. II - Anamorphic Fungi: Hyphomycetes

Jean MOUCHACCA

Département de Systématique & Evolution (Laboratoire de Cryptogamie), USM 602 Taxonomie & Collections, Muséum National d'Histoire Naturelle, Case Postale 39, 57 rue Cuvier, 75231 Paris Cedex 05, France
mouch@mnhn.fr

Abstract – The second contribution of this series surveys 44 hyphomycetes having holotypes from the Middle East region and original protologues elaborated before 1940. The oldest binomial disclosed is *Torula hammonis*; it was written by Ehrenberg in 1824 on the voucher specimen of a fungus he collected in Egypt. From 1824-1900 simply 8 new taxa were named. None was established in the first decade of the 20th century, while a large proportion was issued in the years 1910-1930: 68.2%. Most novelties were described as species, and fewer were considered varieties or forma of known species; the genus *Lacellina* was proposed for *L. libyca*, now *L. graminicola*. The relevant protologues were elaborated by few mycologists active in France, Germany and Italy. The new organisms commonly developed on parts of green plants collected by European residents or travellers botanists. The original localities of collections are now situated in Egypt, Irak, Libya, Palestine and Yemen. Over half of the novel taxa originates from Egypt. Such includes the oldest 6 species due to Ehrenberg and Thuemen (1876-1880), and another 16 taxa due to Reichert in 1921; the specimens of the latter were collected by Schweinfurth and Ehrenberg with occasional ones by Th. de Heuglin and K. Snell. The Egyptian subgroup is distinguished however by the sole 4 taxa based on living cultures: the agent of the Cotton wilt disease isolated by Fahmy, a yeast species from human source and two soil-borne strains, due to Sabet from his pioneer studies of local soil communities, selected as holotypes by van Beyma. The 12 Libyan taxa were authored by Saccardo and Trotter from material gathered at the onset of the Italian occupation of the country (1911-1942). Two interesting plant pathogens relate to the area: *Mauginiella scaettae*, agent of the date palm fruit decay, and *Cercosporella smyrnii* due to R. Maire, then active in Algeria. The few remaining novelties originate either from the Palestine area (3 spp.), Irak (2 spp. by F. Bubák) or Yemen (*Tuberculina pelargonii* Pat., collected by A. Deflers). A taxonomic update of the original binomials underlines their latest valid names relate to 24 genera. Four comprise about half of all novelties. Eleven taxa are in *Coniothecium* and in *Cladosporium*, two genera awaiting monographic treatments. The taxonomic positions of the 4 respective units of *Macrosporium* and *Oidium* are presently well assessed. Two taxa relate to either *Acremonium*, *Alternaria*, *Cercospora*, *Passalora* and *Hormiscium*, a genus requiring a modern revision. The remaining 15 genera are each represented by a single species. This distribution clearly underlines all the hyphomycete novelties are the result of casual discovery rather than the outcome of a survey of the group. Most of the pre-1940 novelties (68.2 %) were introduced in the decades 1910-1930. The remaining ones were named either before 1900 by German mycologists or in the 4th decade of the 20th century by non German specialists. This scientific activity was apparently not slackened by the First World War: the Libyan names appeared between the period of 1912 to 1917 and the Egyptian taxa defined by Reichert in 1921 were based on material sent to Berlin before 1914 by German collectors. The First World War apparently, however, brought German interest in the Biodiversity of the Middle East to an end. In the lapse between the two World Wars local interest in fungi was confined to Egypt and Palestine due to the activity of native (Egypt) or recently established mycologists. This intermediate period is marked by the development of the *in vitro* studies of plant-related

and of soil-borne fungi. A scrutiny of the taxonomic information of hyphomycetes named before World War II stress that several are still known *via* their concise protologues and/or their collecting sites. A regional survey of this major group of fungi needs to be resumed. The two major pre-1940 regional surveys by Bubák (1914) and Reichert (1921) also convey data on 19 known fungi: such includes two species from Irak and 17 from Egypt; among the latter *Polythrincium trifolii* was equally reported from Syria, a country for which no novel hyphomycete had been disclosed. The taxonomic positions of these known fungi were also updated; among the genera represented *Aspergillus*, *Botrytis*, *Brachysporium*, *Fumago*, *Polythrincium* and *Torula* are additions to those of the novel taxa. The known taxa raises to 62 the total of all hyphomycetes here considered, as *Passalora dissiliens* relate to either subgroups under two different synonyms. Finally, the documents scanned for the region also revealed the characterisation of *Absidia aegyptiaca* (Zygomycete) and *Rhizoctonia gossypii* var. *aegyptiaca* (Agonomycete).

Fungi / anamorphic hyphomycetes / Novel taxa / Taxonomy / Biodiversity / Middle East / Egypt / Irak / Libya / Palestine / Syria / Turkey / Yemen

Résumé – La seconde note de cette série traite des 44 hyphomycètes ayant des holotypes originaires du Moyen Orient et des protologues établis avant 1940. Le plus ancien binôme mis en évidence est *Torula hammonis* ; il fut attribué par Ehrenberg en 1824 a un champignon observé sur un fragment de plante, collecté lors de son périple égyptien. De 1824-1900, seuls 8 nouveaux hyphomycètes seront nommés ; aucun ne sera défini durant la première décade du 20e siècle, alors que la majorité des inédits le seront durant la période 1910-1930, soit 68,2 % du groupe. La plupart des inédits furent introduits au rang d'espèce de genres connus, et relativement très peu au rang inférieur de variété ou de forme ; le genre *Lacellina* fut créé pour *L. libyca*, un synonyme ultérieur de *L. graminicola*. Les protologues furent rédigés par des mycologues établis en Allemagne, en France ou en Italie. Ces taxons nouveaux furent observés sur des organes de plantes vertes, herborisés par des botanistes Européens résidents ou en mission dans la région. Les localités originales de collecte se situent actuellement en Egypte, Irak, Libye, Palestine et Yémen. La majorité des taxons inédits a une origine égyptienne. Cela concerne les six plus anciens éléments dûs à Ehrenberg et Thuemen (1876-1780) et seize taxons définis par Reichert en 1921 ; ces derniers se rattachent à des spécimens collectés par Schweinfurth et Ehrenberg et, a un degré moindre, par Th. De Heuglin et K. Snell. Cet ensemble égyptien comporte également les seuls quatre hyphomycètes basés sur des cultures vivantes : l'agent de dépérissement du coton isolé par Fahmy, une levure de source humaine et deux moisissures telluriques, issues des études pionnières de Sabet sur les champignons des sols, désignées ensuite par van Beyma comme matériel type. Les 12 taxons Libyens furent nommés par Saccardo et Trotter à partir de spécimens collectés au début de l'occupation italienne (1911-1942). Deux parasites particuliers de plantes concerne ce pays : *Mauginiella scaettae*, agent du dépérissement des fruits du palmier-dattier, et *Cercosporella smyrnii* précisé par R. Maire, de l'Université d'Alger. Le reste des hyphomycètes inédits sont originaires de Palestine (3 spp.), d'Irak (2 spp. dues à F. Bubák) ou du Yémen (*Tuberculina pelargonii* Pat., collecté par A. Deflers). La mise en conformité des positions taxonomiques des noms originaux, souligne l'appartenance des binômes actuellement en vigueur à 24 genres. Quatre y rassemblent près de la moitié des taxons inédits. Onze espèces se rattachent à *Coniothecium* et *Cladosporium*, deux genres en attente de révisions modernes. Les statuts des 4 inédits respectifs de *Macrosporium* et *Oidium* ont récemment fait l'objet de décisions définitives. Les genres *Acremonium*, *Alternaria*, *Cercospora*, *Passalora* et *Hormiscium* rassemblent chacun deux espèces ; seul ce dernier requiert une révision approfondie. Enfin, les 15 genres restants sont représentés chacun par un seul taxon. Cette distribution souligne le caractère aléatoire des découvertes en hyphomycètes. La plupart des inédits d'avant 1940 (68,2 %) furent précisés entre 1910 et 1930. D'autres furent nommés soit avant 1900 par des experts allemands, ou durant la 4e décade du 20e siècle par des experts non germaniques. Cette activité scientifique ne semble pas avoir été infléchie par la

Première Guerre mondiale : les noms Libyens datent des années 1912-1917 et les taxons égyptiens de Reichert de 1921 sont fondés sur du matériel expédié à Berlin avant 1914, par des collecteurs allemands. Cet événement mondial serait néanmoins à l'origine de la fin de l'interêt des allemands pour la Biodiversité du Moyen-Orient. Entre les deux grandes guerres, l'étude des champignons sera confinée à l'Egypte et à la Palestine ; elle sera alors assurée par des experts locaux (Egypte) ou par des mycologues récemment établis. Cette période intermédiaire se distingue par le début des études *in vitro* d'espèces pathogènes de plantes et d'organismes vivants dans le sol. Un examen critique des informations taxonomiques des hyphomycètes nommés avant 1940 confirme bien que plusieurs restent connus par des diagnoses succinctes peu explicites et/ou par les localités initiales de récoltes. Une exploration régionale de ce groupe majeur de champignons mérite d'être réalisée. Les deux études régionales majeures d'avant 1940 de Bubák (1914) et de Reichert (1921) rapportent également des données sur 19 hyphomycètes connus : deux furent collectés en Irak et 17 en Egypte ; de ces derniers, seul *Polythrincium trifolii* fut aussi observé en Syrie. Le statut de ces taxons connus a également fait l'objet d'un processus d'actualisation ; des genres représentés, *Aspergillus*, *Botrytis*, *Brachysporium*, *Fumago*, *Polythrincium* et *Torula* s'ajoutent à la liste de ceux des taxons inédits. Ces hyphomycètes connus portent à 62 le total des taxons traités, puisque *Passalora dissiliens* figure dans les deux sous-groupes mais avec des noms synonymes différents. Enfin, l'ensemble des publications analysées pour la région révèlent aussi la charactérisation d'*Absidia aegyptiaca* (Zygomycète) et du *Rhizoctonia gossypii* var. *aegyptiaca* (Agonomycète).

Champignon / Hyphomycète anamorphique / Taxon inédit / Taxonomie / Biodiversité / Moyen Orient / Egypte / Libye / Palestine / Syrie / Turquie / Yémen

INTRODUCTION

For convenience, the anamorphic fungi, originally called Fungi Imperfecti, had been classified in the now defunct Subdivision Deuteromycotina (Kendrick, 1989) with two classes: Hyphomycetes characterized by forms that are sterile or bear conidia on separate or aggregated conidiophores (synnemata or sporodochia); and Coelomycetes characterized by forms that produce their conidia in pycnidial, pycnothyrial, acervular, cupulate or stromatic conidiomata. The categories Hyphomycetes and Coelomycetes have been rejected as formal taxonomic ranks (because they actually form a biological continuum), but accepted as collective terms (in common with Ascomycetes and Basidiomycetes) as general indicators of the major morphological category to which a taxon belongs (Nag Raj, 1993; Sutton, 1980).

The first note of the present series reviewed novel ascomycetous taxa originating from the Middle East region and introduced prior to 1940 (Mouchacca, 2008). The second note deals with hyphomycetous taxa. The oldest disclosed novel binomial is *Torula hammonis*; it was written by C.G. Ehrenberg (1795-1856) on the voucher specimen of a fungus he collected in Egypt. This German biologist started his long (1820-1825) exploration of Africa and Asia by visiting Egypt, Libya and Nubia; the material collected was deposited at the Berlin Botanical Museum. Later, Reichert examined the specimens collected in Egypt by Ehrenberg and described several novelties including some anamorphic hyphomycetes (Reichert, 1921).

Two other notable German collectors also contributed to our knowledge of fungi present in the Middle East. The famous traveller G. Schweinfurth (1836-1925) collected intensively in the last decades of the 19th century all along the Nile

basin down to Central Africa and in adjacent countries, before residing in Cairo for a long period. He organised a regular flow of material to Berlin and to some mycologists in France. The African specimens of fungi were studied by F. von Thuemen, P. Hennings and P. Magnus, resulting in the description of several new hyphomycetes. Similarly, J. Bornmüller (1862-1948) made extensive travels in the region: Syria and Palestine (1897), Egypt (1908) and Lebanon and Anti-Lebanon (1910); the material collected was however handed mainly to Magnus who introduced several new species, including *Oidium haplophylli* Magnus 1900, from Palestine.

At the start of the 20th century, the Italian occupation of Libya (1911-1942) rapidly promoted biodiversity studies of its living organisms. The examination of Libyan specimens by P.A. Saccardo and A. Trotter and later on by R. Parisi, resulted in a series of notable papers (Saccardo, 1913, 1917; Saccardo & Trotter, 1913; Trotter, 1912). Finally, the 1910 Handel-Mazzetti expedition in the Orient – Syria and Irak – provided material of an array of fungi, including yet unknown hyphomycetes (Bubák, 1914).

The exploration of the Middle East by German botanists was, however, interrupted by the First World War. The post-war years saw the development of studies on fungal diseases of local economic plants, a trend notable only in Egypt. There, in addition to investigations undertaken by local plant pathologists, invited experts as H.R. Britton-Jones (UK) and Leo. Edw. Melchers (USA) also contributed to this effort. During his 2-years stay at Cairo, Britton-Jones authored several Technical Bulletins of the Egyptian Ministry of Agriculture, including one entitled 'Mycological work in Egypt during 1920-22' (Britton-Jones, 1925). Melchers was appointed as Chief Mycologist in the years 1927-1929. During his 18-months stay, he gathered material for the first comprehensive 'Check-list of plant diseases and fungi occurring in Egypt' (Melchers, 1931); the list comprises names reported by Reichert (1921). A general account on 'Plant Disease Problems in Egypt' was subsequently produced by Melchers (1932).

In the same post-war period, T. Fahmy investigated the wilt disease of cotton in Egypt. His description of the responsible agent as *Fusarium vasinfectum* var. *aegyptiacum* represents the first hyphomycete named by a local expert (Fahmy, 1927). Concomitantly the agronomist Y.S. Sabet became interested in the soil fungi of the country (Sabet, 1935, 1939); examination of his isolates by F.H. van Beyma resulted in the proposal of three new hyphomycetes (van Beyma, 1933 a, b).

Information treated in this second contribution gradually accumulated in the course of work relating to the mycology of the Middle East region. As no regular publication equivalent to the Index of Fungi exists for the years before 1940, several documentary sources had to be consulted for names of fungi new to science introduced during that period. It follows that, despite the extensive bibliographic search undertaken, omissions are to be expected in the established final list of names.

LIST OF TREATED TAXA

The general lay out of the present note is similar to the previous one dealing with ascomycetes. Details about the mode of data presentation, herbaria housing authentic material, items reported and used abbreviations could thus be found in the published article (Mouchacca, 2008). Taxa accepted from a nomenclatural and taxonomic point of view are in bold character.

A – TAXA described as novelties.

– ***Acremonium egyptiacum*** (F.H. Beyma) W. Gams – *Cephalosporium*-artige Schimmelpilze (Hyphomycetes): 64. 1971.

≡ *Oospora egyptiaca* F.H. Beyma – Zentralbalbltt für Bakteriologie, Parasitienkunde und Infektionskrankheiten Abt. 2, 89: 242. 1933. EGYPT. Isolated by Y.S. Sabet from a loamy soil at Guizeh, close to Cairo (Sabet, 1935); sent to van Beyma, Centraalbureau voor Schimmelcultures, Baarn, The Netherlands, for identification. The original description was repeated by Gams (1971). The type culture had been eliminated from the CBS collection in 1959 as being 'atypical' (Gams, 1971).

– ***Acremonium luzulae*** (Fuckel) W. Gams – *Cephalosporium*-artige Schimmelpilze (Hyphomycetes): 92. 1971.

≡ *Torula luzulae* Fuckel – Symbolae mycologicae: 348. 1870.

= *Gliomastix luzulae* (Fuckel) E. Mason, in Rimington – Natural History of Scarbrough District 1: 154. 1953; (combination invalid) ex S. Hughes – Canadian Journal of Botany 36: 769. 1958.

= *Sagrahamala luzulae* (Fuckel) Subram. – Current Science 41: 48. 1972.
= *Torula opuntiae* Reichert – Botanische Jahrbücher für Systematik 56: 718. 1921. XXVI: 1334. EGYPT. On cladodes of *Opuntia ficus-indica*, Cairo, 1822/25, leg. Ehrenberg.
For other synonyms, see Gams (1971: 92).

Crane (2001) re-examined the authentic material of *Torula opuntiae* in B and concluded that it is similar to *Gliomastix luzulae*.

– ***Alternaria euphorbiicola*** E.G. Simmons & Engelhard, in Simmons – Mycotaxon 25: 196. 1986; *nomina nova*.

≡ *Macrosporium euphorbiae* Reichert – Botanische Jahrbücher für Systematik 56: 723. 1921; illegitimate (ICBN Art. 53): a later homonym of *Macrosporium euphorbiae* Barth., in Bartholomew – Fungi Colombiani No. 2633 (description published on exsiccata label), fig. 27. 1908. EGYPT. On leaves of *Euphorbia prunifolia*, Village of Salamah, City of Mansourah, Lower Egypt, 6 Dec. 1891, leg. Schweinfurth.

Simmons (1986) examined the holotype in B and concluded to the validity of the species. He established a modern description based on the representative isolate E.G.S. 41.029, CBS 119410. A more elaborate description of the same taxon was recently provided by Simmons (2007: 478).

According to Simmons (2007) sporulation of *Alternaria euphorbiicola* in nature is 'decidely catenate by means of sturdy apical secondary conidiophores, whereas *A. euphorbiae* (Barth.) Aragaki & Uchida (Simmons, 2007: 224) with its very long, sinuous, filamentous beaks gives no evidence of secondary conidium production in the field specimens examined'.

Another novel *Alternaria* relating to Egypt is the recently described *A. soliaegyptiaca* E.G. Simmons (Simmons, 2007: 506). The organism was based on a soil-borne isolate obtained by Y.S. Sabet in the course of his pioneer investigations of the telluric mycobiota of the country (Sabet, 1935, 1939) and long maintained as CBS 103.33. It belongs to the same *Alternaria* group as *A. euphorbiicola* following the classification established by Simmons (2007) for accepted members of the genus.

– ***Alternaria macrospora*** A. Zimmerm. [as *makrospora*] – Berichte über Land- und Forstwirtschaft in Deutsch-Ostafrika 2: 24. 1904, tab. II, fig. 13.

≡ *Macrosporium macrosporum* (A. Zimmerm.) Nisikado & Oshima – Nogaku Kenkyu [Agricultural Research (Kurishiki)] 36: 391. 1944.

≡ *Macrosporium macrosporum* (A. Zimmerm.) Morsy [as *macrospora*] – Agricultural Research Review, Cairo 47: 163. 1969; *nomen invalidum*, ICBN Art. 33; also a later homonym.

= *Sporidesmium longipedicellatum* Reichert [as *Sporodesmium*] – Botanische Jahrbücher für Systematik 56: 723. 1921. EGYPT. On leaves of *Gossypium* sp., Village of Bahtim, close to Cairo, Lower Egypt, 15 Sep. 1912, leg. K. Snell.

≡ *Alternaria longipedicellata* (Reichert) Snowden – Annual Report Department of Agriculture Uganda Protectorate 1926: 31. 1927.

The similarity of Reichert's *Sporidesmium* species with *Alternaria macrospora* was recognized by Ellis (1971: 495) and Subramanian (1971, publ. 1981). The fungus is an established pathogen able to induce cases of severe leaf-shedding of Cotton plants in several countries including Egypt; it is said to also occur sometimes on other plants (Ellis, 1971: 495). From Egypt, Morsy (1969) proposed the combination *Macrosporium macrosporum* (A. Zimmerm.) Morsy for a hyphomycete thought to induce a Cotton disease being new to the Nile Valley (Mouchacca, 1999). Morsy was apparently unaware that the combination had been established a few years earlier by two Japanese pathologists. In addition to being invalid, this combination is also incorrect since the genus *Macrosporium* Fr. had already been rejected against *Alternaria* Nees (Hughes, 1958).

A comprehensive modern description of *Alternaria macrospora* is provided by Simmons (2007: 322) based on the representative isolate E.G.S. 50-190, CBS 117228.

– ***Bispora opuntiicola*** **Reichert** – Botanische Jahrbücher für Systematik 56: 719. 1921. XXVI: 1336. EGYPT. On dry cladodes of *Opuntia ficus-indica*, City of Alexandria, Jan. 1822/25, leg. Ehrenberg. No comprehensive document about *Bispora* Corda is yet available (Carmichael *et al.,* 1980).

– ***Candida tropicalis*** **(A. Castellani) Berkhout** – Die Schimmelgeslachten *Monilia*, *Oidium*, *Oospora en Torula*, Thesis, University of Utrecht: 44. 1923.

≡ *Oidium tropicale* A. Castellani – Philippine Journal of Science, C, Botany 5 (2): 202. 1910.

= *Monilia aegyptiaca* Khouri – Comptes rendus des Séances de la Société de Biologie 111: 419. 1932. EGYPT. Isolated from the sputum of a patient suffering from an acute attack of pulmonary blastomycosis which terminated fatally, at Alexandria City (Khouri, 1932).

≡ *Castellania aegyptiaca* (Khouri) C.W. Dodge – Medical Mycology. Fungous diseases of men and other mammals, Mosby, St. Louis: 254. 1935.

A fairly large number of other synonyms and relevant combinations are also listed by Meyer *et al.* (2000).

A modern description of the yeast is provided by Meyer *et al.* (2000). Following these authors, the three yeast species *Candida tropicalis*, *C. maltosa* Komagata *et al.* and *C. sake* (Saito & Oda) van Uden *et al.,* are physiologically similar; they can, however, be separated by growth at 35°C (*C. sake*: negative) and the assimilation of soluble starch (*C. maltosa* and *C. sake*: negative).

– ***Cercospora punctiformis*** **Sacc. & Roum.** – Revue mycologique, Toulouse 3: 29. 1881. IV: 450.

= *Cercospora cynanchi* Lobik – Materialy po floristicheskim i faunisticheskim obsledovaniyam Terskogo Okruga, Pjatigorsk: 53. 1928.

= *Fusicladium cynanchi* Reichert – Botanische Jahrbücher für Systematik 56: 720. 1921. XXVI: 1341. EGYPT. On leaves of *Cynanchum acutum*, close to Damietta City, Lower Egypt, Apr. 1822/25, leg. Ehrenberg.
= *Cercospora punctiformis* forma *catalaunica* Gonz. Frag. – Memorias. Real Academia de Ciencias Exactas, Fisicas y Naturales de Madrid., Ser. 2, 6: 250-252. 1927.

Schubert, Ritschel & Braun (2003: 114) re-examined the type material of *Fusicladium cynanchi* (Herb. B) and concluded to its similarity with *Cercospora punctiformis*. According to Crous & Braun (2003) the latter is a true *Cercospora s.str*. distinct from *C. apii s.lat*. *sensu* Braun & Mel'nik (1997: 85).

– ***Cercospora tripolitana*** **Sacc. & Trotter** [as *tripolitania*] – Annales mycologici 11: 419. 1913. XXV: 886. LIBYA. On leaves of *Emex spinosa*, Bir Sbea, Tripolitania, Feb. 1913, leg. Trotter; H.: PAD.
= *Cercospora barrasii* Gonz. Frag. – Trabajos del Museo Nacional de Ciencias Naturales y Jardin Botanico. Madrid, Ser. Bot., 9: 68. 1916.
= *Cercospora emicis* Pat., in Pitard C.-J. – Contribution à l'étude de la flore du Maroc: 73. 1931.
Both synonymies *fide* Crous & Braun (2003: 411).

A modern description is provided by Crous & Braun (2003: 411). They consider the species as a true *Cercospora s.str*. being distinct from *C. apii s.lat*. by having very short conidiophores.

– ***Cladosporium acaciae*** **Reichert** – Botanische Jahrbücher für Systematik 56: 720. 1921 [non *Cladosporium acaciae* Panwar – Current Science 39 (18): 423. 1970; illegitimate, a later homonym, ICBN Art. 53]. XXVI: 1336. EGYPT. On dry fruits of *Acacia farnesiana*, in the river Nile Island of Rhodah at Cairo, Feb. 1822/25, leg. Ehrenberg.

No critical account of the several hundreds of taxa ascribed to *Cladosporium* Link is yet available (Dugan *et al.,* 2004). The related genus *Heterosporium* Klotsch ex Cooke is now regarded as representing a subgenus of *Cladosporium* (David, 1997).

– ***Cladosporium herbarum*** **forma** ***cleomes*** **Trotter** – Annales mycologici 10: 514. 1912. LIBYA. On leaves of *Cleome amblyocarpa*, Tajoura, Tripoli, Mar. 1912, leg. Trotter; H.: not in PAD.

The new forma is not reported by Kirk (1985) nor by Reed & Farr (1993: 133). Excellent accounts of the history of the type species of *Cladosporium* Link, *C. herbarum* (Pers.:Fr.) Link, have recently been provided by McKemy and Morgan-Jones (1991) and by Schubert *et al.* (2007). These authors did not, however, consider known varieties of the species. The status of the Libyan-based forma *cleomes* was also not accounted for by David (1997) in his partial treatment of the genus. It is even not cited in the Check-list of *Cladosporium* names established by Dugan *et al.* (2004).

– ***Cladosporium heuglinianum*** **Thuem.** – Revue mycologique, Toulouse I (1): 10. 1879. X: 603. EGYPT. On decaying leaves of *Buddleya polysticha*, Terra Habab, Village of Nakfa, Red Sea shore, Feb. 1875, leg. Th. de Heuglin. The species has been overlooked since its introduction (Dugan *et al.,* 2004).

– ***Cladosporium hibisci*** **Reichert** – Botanische Jahrbücher für Systematik 56: 721. 1921. XXVI: 1338. EGYPT. On dry stems of *Hibiscus esculentus*, City of Assiut, Higher Egypt, Oct. 1822/25, leg. Ehrenberg. Besides the original description, no other report on this dematiaceous hyphomycete could be located (de Vries, 1952; Ellis, 1976; David, 1997).

– ***Cladosporium pyriforme*** **Reichert** [as *pyriformum*] – Botanische Jahrbücher für Systematik 56: 721. 1921. XXVI: 1338. EGYPT. On cladodes of *Opuntia ficus-indica*, Village of Bulak, close to Cairo, 1822/25, leg. Ehrenberg. The name is included in the Check-list of *Cladosporium* names recently established by Dugan *et al.* (2004).

– ***Clasterosporium lindavianum*** **Reichert** – Botanische Jahrbücher für Systematik 56: 722. 1921. XXVI: 344.
EGYPT. Two collections are cited: On stems of *Phoenix dactylifera*, Cairo, 1822/25, leg. Ehrenberg; on dry stems of *Phragmitis communis* var. *isiacae*, City of Mansourah, Lower Egypt, (date ?), leg. Ehrenberg. A fair number of *Clasterosporium* Schwein. species were re-assessed by Ellis (1971, 1976) but *C. lindavianum* was not accounted for.

– ***Clathrococcum magnusianum*** **Reichert** – Botanische Jahrbücher für Systematik 56: 726. 1921. XXVI: 1424. EGYPT. On leaves of *Euphorbia prunifolia*, Village of Salamah, City of Mansourah, Lower Egypt, 6 Dec. (year ?), leg. Schweinfurth. *Clathrococcum* Höhn. is still simply reported to represent a probable synonym of *Epicoccum* Link (Carmichael *et al.,* 1980; Kirk *et al.*, 2008). This taxonomic disposition was not however debated by Schol-Schwarz (1959) in her monographic treatment of the genus *Epicoccum*. The status of *Clathrococcum magnusianum* awaits clarification.

– ***Coniosporium geophilum*** **Sacc. & Trotter** – Annales mycologici 11: 419. 1913. XXV: 756. LIBYA. On dead and decorticated roots of *Citrus aurantium* and *C. deliciosa*, close to Tripoli City, Oct. 1913, leg. Trotter; H.: PAD. No information on this species other than the relevant protologue could be located (Ellis, 1971, 1976).

– ***Coniothecium corticola*** **Bubák** [as *corticulum*] – Annalen des K. K. Naturhistorischen Hofmuseums. Wien 28: 217. 1914. XXV: 841. IRAK. On living cortex of *Populus euphraticus*, in the woods of an island of the river Tiger, south of Baghdad City, Mesopotamia, 35 m, 23 Apr. 1910, leg. Handel-Mazzetti no. 912. The generic name *Coniothecium* Corda is definitely regarded as a *nomen dubium* (Kirk *et al.,* 2008). So far only its lichenicolous members have been the subject of a taxonomic revision (Hawksworth, 1975).

– ***Coniothecium heterosporum*** **Reichert** – Botanische Jahrbücher für Systematik 56: 722. 1921. XXVI: 1362.
EGYPT. Two collections are cited: On dry leaves of *Phoenix dactylifera*, Bir Haie, North Sinaï, close to El-Arish City, Nov. 1822/25, leg. Ehrenberg; on leaves of *Thymelaea hirsuta* at Bir Hamam, North Sinaï, close to El-Arish City, Dec. 1822/25, leg. Ehrenberg.

– ***Coniothecium mucigenum*** **Bubák** – Annalen des K. K. Naturhistorischen Hofmuseums. Wien 28: 218. 1914. XXV: 842. IRAK. In the mixed forests of *Populus* and *Salix* on the banks of the river Tigris, close to Mossul City, on old twigs and cortex of *Populus euphratica* and on stems of *Cuscuta monogyna* parasitic on *Populus* sp., 250 m, 24 May 1910, leg. Handel-Mazzetti no. 1251.

– ***Coniothecium pampaninianum*** **Sacc.** – Nuovo Giornale Botanico Italiano, N.S. 24: 166. 1917. LIBYA. On dry leaves of *Dactylis glomerata* var. *hispanica*, Benghazi, Tripolitania, Mar. 1916, leg. Rev. P.D. Vito Zanon; H.: PAD. The name was reported by Kirk in his list of Saccardo's omissions (1985: 17).

– ***Coniothecium rhois*** **Sacc. & Trotter**, in Trotter – Annales mycologici 10: 514. 1912. XXII: 1399. LIBYA. On dead twigs of *Rhois oxyacanthae*, Mergheb, close to

Khums, Tripolitania, Mar. 1912, leg. Trotter, *socio cum Hyalothyridium leptitanum* Sacc. & Trott. (a coelomycete); H.: not in PAD.

– ***Coniothecium tamariscinum* Thuem.** – Flora 63 (30): 477. 1880. IV: 511. EGYPT. On living branches of *Tamarix mannifera*, at Wadi Giaffra, Village of Belbeis, Lower Egypt, Apr. 1880, leg. Schweinfurth. The original description was reproduced by Roumeguère – Revue mycologique, Toulouse 3 (9): 42. 1881. Reichert (1921) regarded the fungus as an endemic component of the Egyptian mycoflora.

– ***Fusarium oxysporum* Schelcht.** – Flora berolinensi 2: 139. 1824 emend. Snyder & Hansen – American Journal of Botany 27: 64-67. 1940 var. *oxysporum* (*pro maxima parte*).
= *Fusarium vasinfectum* Atk. – Bulletin of the Alabama Agricultural Experimental Station 41: 19. 1892.
= *Fusarium vasinfectum* var. *aegyptiacum* T. Fahmy – Phytopathology 11: 749-767. 1927. EGYPT. Agent of the Fusarium wilt of Cotton plants in Egypt.

A survey conducted in Egypt in the years 1924 and 1925 showed the *Fusarium* wilt of Cotton to be highly destructive in several parts of the Delta region. The disease could be circumscribed by the substitution of the highly susceptible long-staple Sakel variety by the resistant short-staple varieties Ashmouni and Zagora then having lower economic value (Fahmy, 1927). A comparative study was then undertaken of *Fusarium* species causing Cotton wilt in Egypt, India and the United States, respectively.

The Egyptian strains showed few cultural and morphological variations: chlamydospores being smaller towards one or both extremities of the chain, and specific substratum coloration as brilliant yellow with light cobalt violet shades on rice and different shades of mauve on oatmeal agar. Most important, the Egyptian *Fusarium* was found to be capable of attacking some of the Indian cotton varieties, while the pathogenecity of the Indian and American strains were practically restricted to the varieties of their respective countries of origin. According to Fahmy (1927), the noted differences justify the establishment of the new *F. vasinfectum* var. *aegyptiacum*, for the Egyptian strains.

Snyder & Hansen (1940) subsequently regarded *Fusarium vasinfectum* var. *aegyptiacum* as indistinguishable from the species *F. vasinfectum* Atk. They also considered the latter as a forma specialis of *F. oxysporum* and provided the following combination: *F. oxysporum* f.sp. *vasinfectum* (Atk.) Snyder & Hansen – American Journal of Botany 27: 66. 1940. Information about the distribution and pathogenecity of this forma specialis is provided by Booth (1971: 152-3).

The *Fusarium* wilt of cotton is a serious fungal disease responsible for significant yield losses throughout the world. Evolution of the causal organism *Fusarium oxysporum* f.sp. *vasinfectum*, including the eight races described for this specialized form, was recently studied using multigene genealogies by Skovgaard *et al.* (2001).

The study involved 28 isolates of this *Fusarium* assuming to represent the global genetic diversity of this forma specialis. The results indicated that the eight races of the f.sp. that appeared to be nonmonophyletic, have at least two independent, or polyphyletic, evolutionary origins: races 3 and 5 formed a strongly supported clade separate from the other six races. Besides, sequence data from the same isolates disclosed four lineages correlating with differences in virulence and geographic origin: lineage I contained race 3, mostly from Egypt, and race 5 from Sudan; lineage II contained races 1, 2, and 6 from North and South America and Africa; lineage III contained race 8 from China; and lineage IV contained

isolates of races 4 and 7 from India and China, respectively. Further taxonomic work is undoubtedly needed to correctly assess the true taxonomic position of the agent of the wilt disease of Cotton.

– ***Fusicladium psammicola*** **(Sacc.) U. Braun & K. Schub.** – Mycotaxon 103: 212. 2008.

≡ *Exosporium psammicola* Sacc., in Saccardo & Trotter – Annales mycologici 11: 420. 1913. XXV: 993. LIBYA. On dead leaves of *Psamma arenaria* (≡ *Ammophila arenaria*), Ras Carrac, Magna Syrte, Tripolitania, 18 May 1913, leg. Trotter; H.: PAD.

≡ *Cladosporium psammicola* (Sacc.) Morgan-Jones & W.B. Kendr. – Canadian Journal of Botany 50 (9): 1817. 1972.

According to Braun, Crous & Schubert (2008), on account of clear differences between this species and the basic features of the genus *Exosporium* Link, Morgan-Jones and Kendrick (1972) reallocated *E. psammicola* to *Cladosporium s.lat*. However, because of the non-coronate conidiogenous loci and conidial hila, this species has to be excluded from *Cladosporium s.str*. The presence of sub-denticulate, truncate, unthickened, but darkened-refractive scars suggests the fungus should be assigned to *Fusicladium* Bonord. (Schubert, Ritschel & Braun, 2003). This assignment is supported by the structure of the development of radiating hyphal strands and stromatic plates as well as the broad conidia, mostly formed singly.

– ***Hormiscium calligoni*** **Reichert** – Botanische Jahrbücher für Systematik 56: 718. 1921. XXVI: 1326. EGYPT. On dry strems of *Calligonum comosum*, on the path between the wells of Bir Haie and Bir Lebek, North Sinaï, close to El Arish City, Dec. 1822/25, leg. Ehrenberg. The type species of *Hormiscium* Kunze was found to match *Torula herbarum* (Pers.) Link (Crane & Shoknecht, 1986). However not all members of the former genus have yet been re-appraised.

– ***Hormiscium saccharicola*** **Reichert** [as *saccharicolum*] – Botanische Jahrbücher für Systematik 56: 718. 1921. XXVI: 1327. EGYPT. On stems of the sugar-cane plant *Saccharum biflorum*, between the cities of Guirgeh and Akhmin, Higher Egypt, Jan. 1822/25, leg. Ehrenberg.

– ***Lacellina graminicola*** **(Berk. & Broome) Petch** – Annals of the Royal Botanical Gardens. Peradeniya 9: 171. 1924.

≡ *Chaetopsis graminicola* Berk. & Broome – Journal of the Linnean Society, Botany 14 : 90. 1873.

= *Lacellina libyca* Sacc. & Trotter – Annales mycologici 11: 419. 1913. XXV: 781. LIBYA. On twigs and leaves of undetermined hosts mostly *Gramineae*, at Ain Zara and at Bir Tobras, Tripoli, Mar. 1913, leg. Trotter; H.: PAD.

Lacellina libyca Sacc. & Trotter is the type species of *Lacellina* Sacc. (Annales mycologici 11: 419. 1913), dedicated to Dr. Paulo Della Cella (1792-1854), an eminent Italian traveller and botanical collector in Libya. The above synonymy was proposed by Ellis (1957). A modern comprehensive description is provided by Ellis (1971: 173).

– *Macrosporium commune* forma *calotropidis* Trotter – Nuovo Giornale Botanico Italiano, N.S. 23: 30. 1916; a name correction for *Macrosporium commune* forma *calotropis* Trotter – Annales mycologici 10: 514. 1912; invalid, *nomen nudum fide* Simmons E.G. (2007: 708). LIBYA. On living leaves of *Calotropis procera*, Tajoura, Tripoli, Mar. 1912, leg. Trotter; H.: not in PAD.

The name of the forma is not reported by Kirk (1985) and by Reed & Farr (1993). The type species of *Macrosporium* Fr. was redisposed by Hughes (1958) as *Alternaria cheiranthi* (Libert:Fr.) P.C. Bolle. According to Simmons (2007), *Macrosporium commune* Rabenh. could be regarded as a *nomen nudum* when published. It was never validated and such renders invalid about 15 names published subsequently as varieties or forms of the species (ICBN Art. 43.1). Besides most of these varieties and forms are *nomina nuda*.

– *Macrosporium lineare* Sacc. – Bulletino della Societa Botanica Italiano 22: 156. 1913; Annales mycologici 11: 567. 1913. XXV: 858. LIBYA. On leaves of *Stipa tenacissima*, Wadi Gherrim, Mesellata, Apr. 1913, leg. R. Pampanini. Following Simmons (2007: 724), the described broadly fusoïd conidia, somewhat muriform-septate, 16-18 x 14 µm, were not found in the holotype; the taxon is of doubtful identity.

– *Macrosporium nitens* forma *colocynthidis* Trotter – Nuovo Giornale Botanico Italiano, N.S. 23: 30. 1916. XXV: 857. LIBYA. On fruits of *Citrullus colocynthis*, Sharshara, Tarhuma, Mar. 1914, leg. Trotter; H.: not in PAD. Simmons (2007: 730) was unable to locate the relevant type material. In the absence of any illustration to accompany the concise published basic description, no proper conclusion could be reached: the taxon is of doubtful identity.

– *Macrosporium oleae* Reichert – Botanische Jahrbücher für Systematik 56: 724. 1921. EGYPT. On leaves of *Olea europaea*, Guizeh Horticultural Garden, Experimental farm, Egyptian Ministry of Agriculture, Cairo, 26 Nov. 1912, leg. Brown & K. Snell. The name was not reported by Kirk (1985) and by Reed & Farr (1993). According to Simmons (2007: 731) 'the 20-30 × 7-12 µm conidia in the type specimen are of an *Alternaria* taxon that is not distinguishable among small-spored species of the genus'.

– ***Mauginiella scaettae*** **Cavara** – Atti della Reale Accademia dei Lincei. Rendiconti delle Seduti Solenni 322, Sér. 6, 1-2: 67. 1925. LIBYA. On inflorescences of *Phoenix dactylifera*, Cyrenaica.
= *Geotrichum scaettae* (Cavara) Maire, in Maire & Werner – Mémoires de la Société des Sciences Naturelles du Maroc 45: 133. 1937, publ. 1938.

The fungus causes a severe date palm disease in North Africa and in the Middle East (Abdullah *et al.,* 2005), rotting the spadix and inflorescences. It was first described by Cavara (1924, publ. 1925) from Cyrenaica, Lybia. The name has been chosen in honour of Drs. A. Maugini and H. Scaetta, at that time working at the 'Istituto Agricola Coloniale Italiano'. Maire and Werner (1937) rediscovered the fungus in Morocco and renamed it *Geotrichum scaettae* (Cavara) Maire. Ciferri (1958) incorrectly considered it to be identical with *Sporendonema epizoum* (Corda) Ciferri & Redaelli, now *Wallemai sebi* (Fr.) v. Arx.

According to von Arx *et al.* (1981), the ultrastructure of the cell wall and the hyphal septa, together with the diazonium blue B test show that *Mauginiella scaettae* represents an anamorph of an unknown ascomycete. The hyphomycete was again recently isolated by Abdullah *et al.* (2005) from infected date palms at the Elx grove in south-east Spain. Results of analysis of the ITS sequencing data underlined it is closely related to species of the ascomycete genus *Phaeosphaeria* I. Miyake clade B., and in particular to *P. triglochinicola* (Curr.) Leuchtm. (Sydowia 37: 111. 1984). Most *Phaeosphaeria* species form pseudoparenchymatous ascomata with bitunicate asci and occur mainly on monocotyledonous plants (Shoemaker & Babcock, 1989).

– ***Monilia hammonis*** **Ehrenb. ex Link** – In Willdenow Species Plantarum Edn. 4, 6 (1). Hyphomycetes: 127. 1824.

= *Torula hammonis* Ehrenb., *in litt*. – In Link, Willdenow Species Plantarum Edn. 4, 6 (1). Hyphomycetes: 127. 1824; *nomen nudum*, ICBN Art. 32.1, *fide* Crane (2001). IV: 258. EGYPT. Link provides the following indications for the relevant specimen he examined: '*Habitat in Arundine hammonis* Sprengel, *prope* Bir Haie *in Aegypto*, Ehrenberg (v.s.)'.

In his treatment of the genus *Torula* Pers.:Fr., Fries (1832) accepted *T. graminis* Desm. (Systema mycologicum 3: 502. 1832) but listed *Monilia hammonis* (Ehrenb.) Link as a synonym, stating that it was scarcely different. In their attempt to assess the correct taxonomic position of *Torula graminis*, Crane & Schoknecht (1977) introduced the new genus *Rutola* Crane & Schoknecht, type species *R. graminis* (Desm.) Crane & Schoknecht. However, as they were unable to locate any type material of *Torula hammonis*, the reported synonymy could not then be ascertained.

Reichert (1921: 719) examined the following specimens labelled *Torula hammonis* present in Berlin: On *Phragmites communis* var. *isiacae*, close to Bir Haie, near El-Arish City, Sinaï Peninsula, Nov. 1822/25, leg. Ehrenberg; on *Phoenix dactylifera*, close to Bir Haie, El-Arish City, Dec. 1822/25, leg. Ehrenberg; on leaves of *Salicornia fruticosa*, close to Cairo, Mar. 1822/25, leg. Ehrenberg. He concluded that the fungus should better be ascribed to the genus *Bispora* Corda as *B. hammonis* (Ehrenb.) Reichert. Recently however, Crane (2001) underlined again he was unable to locate any authentic material of *Torula hammonis*. Reichert's taxonomic decision could thus not be substantiated.

– ***Myrothecium verrucaria*** **(Alb. & Schwein.:Fr.) Ditmar** – Systema mycologicum 3: 217. 1829; Tulloch M. – Mycological Papers 130: 27. 1972.

≡ *Peziza verrucaria* Alb. & Schwein. – Conspectus Fungorum. Leipzig: 340. 1805.

= *Cryptomela acutispora* F.H. van Beyma – Zentralblatt für Bakteriologie, Parasitienkunde und Infektionskrankheiten, Abt. 2, 89: 240. 1933. EGYPT. Isolated from loamy soil, Guizeh, Cairo, leg. Y.S. Sabet, prior to 1935, and sent to van Byema for identification, CBS 157.33. Re-examination of the preserved authentic culture proved it represents a strain of *Myrothecium verrucaria* (Mouchacca, 1995).

– ***Oidium abelmoschi*** **Thuem.** – Grevillea 5-6: 102. 1876-1878. IV: 42. EGYPT. On living leaves of *Hibiscus esculentus* (= *Abelmoschus esculentus*), City of Mansurah, Lower Egypt, Aug. 1876, leg. Schweinfurth. Following Braun (1995) the taxon is insufficiently known and detailed investigations based on fresh material is required.

The two combinations subsequently published: *Acarosporium abelmoschi* (Thuem.) Subram. – Hyphomycetes (New Delhi): 838. 1971, and *Euoidium abelmoschi* (Thuem.) Y.S. Paul & J.N. Kapoor [as *abelmosci*] – Indian Journal of Mycology and Plant Pathology 17 (3): 302. 1987, should be regarded as insufficiently founded.

– ***Oidium haplophylli*** **Magnus** – Verhandlungen der K. K. Zoologisch-Botanischen Gesellschaft 50: 445. 1900. IV: 42. PALESTINE-ISRAEL. On *Haplophyllum buxbaumi*, among grasses, Valley of Galilee, City of Jaffa, old Palestine territory, Apr. 1897, leg. J. Bornmüller no. 1034.

Teleomorph: *Léveillula taurica* (Lév.) G. Arnaud – Annales des Epiphyties 7: 94. 1921.

For a modern description of both states of the fungus and of its host-plant relationships and the numerous known synonyms of the anamorph and of the teleomorph, see Braun (1995: 201-203).

– *Oidium lippiae* Thuem. – Grevillea 5-6 (no. 39): 103. 1876-78. IV: 45. EGYPT. On leaves of *Lippia nudiflora*, in a garden at Guizeh, Cairo, leg. Schweinfurth. According to Braun (1987) this is not a powdery mildew. Reichert (1921: 717) regarded the fungus as an endemic component of the Egyptian mycoflora.

– *Oidium medicagineum* Thuem. – Grevillea 7-8: 49. 1878-1880. IV: 43. EGYPT. On living leaves of *Medicago denticulata*, locality of Serssene, Fayum depression, Higher Egypt, Mar. 1879, leg. Schweinfurth. According to Braun (1987), this is a doubtful fungus of unclear status. It was regarded by Reichert (1921: 717) as an endemic component of the Egyptian mycoflora.

– ***Passalora dissiliens*** (Duby) **U. Braun & Crous**, in Crous & Braun (2003) *Mycosphaerella* and its anamorphs: 1. Names published in *Cercospora* and *Passalora*. CBS Biodiversity Series 1: 164. 2003.

≡ *Torula dissiliens* Duby – Mémoires de la Société de Physique et d'Histoire Naturelle de Genève 7: 128. 1835.

≡ *Phaeoramularia dissiliens* (Duby) Deighton – Transactions of the British Mycological Society 67: 223. 1976.

= *Cercospora leonii* S vulescu & Rayss – Revue de Pathologie Végétale et d'Entomologie Agricole de France 22: 222. 1935; Annales de Cryptogamie Exotique 8: 68. 1935. PALESTINE. On living leaves of *Vitis vinifera*, Malia, 29 May 1935, leg. J. de Leon.

= ? *Cercospora coryneoides* S vulescu & Rayss – Revue de Pathologie Végétale et d'Entomologie Agricole de France 22: 223. 1935; Annales de Cryptogamie Exotique 8: 67. 1935. PALESTINE. On living leaves of *Vitis vinifera*.

For the several other known synonyms, see Crous & Braun (2003).

Among the other accepted synonyms there is *Cercospora judaica* Rayss – Palestine Journal of Botany, Jerusalem series 3: 41. 1943, also collected in the Palestine area on living leaves of *Vitis vinifera* (Mouchacca, 1999).

– ***Pseudocercosporella smyrnii*** **(Maire) U. Braun** – Nova Hedwigia 58: 214. 1994.

≡ *Cercosporella smyrnii* Maire, in Maire & Weiller – Contribution à l'étude de la flore de la Libye. Fascicule 27. In Contribution à l'étude de la flore de l'Afrique du nord par le dr R. Maire. Bulletin de la Société d'Histoire Naturelle de l'Afrique du nord 30: 314. 1939. LIBYA. On leaves of *Smyrnium olusatrum*, Gaigub, Cyrenaica, Apr. 1938, leg. Maire & Weiller 11697. A modern description is provided by Braun (1995: 139).

– ***Sirosporium mori*** **(Sydow & P. Sydow) M.B. Ellis** – Mycological Papers 87: 7. 1963.

≡ *Clasterosporium mori* Sydow & P. Sydow – Mémoires de l'herbier Boissier 4: 6. 1900.

= *Cercospora snelliana* Reichert – Botanische Jahrbücher für Systematik 56: 724. 1921; synonymy *fide* Ellis (1963). XXVI: 1384. EGYPT. On leaves of *Morus alba*, in the vicinity of Bahtim City, close to Cairo, Nov. 1913, leg. K. Snell.

The original material is apparently lost. Ellis (1963) gives the following annotations for the specimen of *Cercospora snelliana* he examined: Israël, I. Reichert, Nov. 1921, authenticated for the name *Cercospora snelliana* (IMI 8344). A modern description is provided by Ellis (1971: 290).

– ***Stilbella fimetaria* (Pers.) Lindau** – Verhandlungen der Botanischen Vereins der Provinz Brandenburg 47: 75. 1905.

≡ *Leotia fimetaria* Pers. – Icones et Descriptiones Fungorum minus cognitorum. Leipzig 2: 21. 1799, publ. 1800.
= *Stilbella dielsiana* Reichert – Botanische Jahrbücher für Systematik 56: 725. 1921; synonymy *fide* Seifert (1985). XXVI: 1401. EGYPT. On dung collected in the Cities of Cairo and Mansourah (Lower Egypt), Mar. 1822/25, leg. Ehrenberg.

According to Seifert (1985), the authentic material examined from Herb. I. Reichert, kept at B, was dated 20 March 1921.

– ***Tuberculina pelargonii* Pat.** – Journal de Botanique, Morot 3: 168. 1889. X: 710. YEMEN. Parasitising the aecidia of the rust *Puccinia granularis* infecting leaves of a *Pelargonium* sp. H.: FH no. 425 (A. Deflers no. 295).

Recently Lutz *et al*. (2004) conducted ultrastructural investigations of the *Tuberculina* type species, *T. persicina* (Ditmar) Sacc., and molecular analyses of the three well known members of the genus: *T. maxima* Rostr., *T. persicina* and *T. sbrozzii* Cavara & Sacc. Within the Urediniomycetes, *Tuberculina* clustered as a sister group of *Helicobasidium* Pat., closely related to the rusts (Uredinales). However, as no stages of sexual reproduction are known for these fungi, they suggested the genus should presently be assigned to the Fungi Imperfecti. The three investigated species are easily recognized. Such is not the case however for the forty remaining known *Tuberculina* species including *T. pelargonii*.

B – KNOWN hyphomycete taxa also reported by Bubák (1914) and Reichert (1921) for the Middle East:

The other hyphomycete taxa reported but already known are also here considered. Their taxonomic positions are updated. The original collection sites are indicated following modern political borders. For each known hyphomycete the page of citation in the original publication is indicated with the present name of the country of collection and details about the supporting specimen; all data are cited in relation with the binomials used by Bubák (1914) or by Reichert (1921).

– ***Aspergillus candidus* Link** – Gesellschaft Naturforschender Freunde zu Berlin. Magazin für die Neuesten Entdeckungen in der Gesammten Naturkunde 3: 16. 1809. Reichert 1921: 665. EGYPT. On *Opuntia ficus-indica*, locality of Bulak, Cairo, leg. Ehrenberg.

– ***Aspergillus pheonicis* (Corda) Thom** – Journal of Agricultural Research 7: 14. 1916 [cited by Reichert as *A. pheonicis* (Corda) Lindau, in Rabenhorst' Kryptogamenflora 8: 140. 1884-88]. Reichert 1921: 123. EGYPT. On date palm fruit of *Phoenix dactylifera*, Cairo, Dec. 1901, leg. Schweinfurth.

≡ *Ustilago phoenicis* Corda – Icones Fungorum 4: 9, pl. 3, fig. 36. 1840.
= *Aspergillus niger* Tiegh. var. *phoenicis* (Corda) Al-Musallam - Revision of the black *Aspergillus* species: 57. 1980.

– ***Botrytis cinerea* Pers.** – Neues Magazin für die Botanik, Römer 1: 126. 1794; Tentamen dispositionis methodicae Fungorum: 46. 1797. Reichert 1921: 717. EGYPT. On mouldy Egyptian onion bulbs imported at Hamburg, leg. C. Brick.

– ***Brachysporium flexuosum* (Corda) Sacc.** – Sylloge fungorum 4: 429. 1886. Reichert 1921: 722. EGYPT. On *Panicum crus-galli*, close to Alexandria, Nov. 1877, leg. Schweinfurth.

≡ *Helminthosporium flexuosum* Corda [as *Helmisporium*] – Icones Fungorum 1: 13. 1837.

– ***Cercospora violae*** **Sacc.** [as *violacea*] – Nuovo Giornale Botanico Italiano, N.S. 8: 187. 1876; for known synonyms, see Crous & Braun (2003: 423). Reichert 1921: 725. EGYPT. On leaves of *Viola odorata*, in the Delta region, leg. Schweinfurth.

– ***Cladosporium epiphyllum*** **(Pers.) Nees** – Des System der Pilze und Schwämme. Würzburg: 67. 1816-17 [cited by Bubák as *C. epiphyllum* (Pers.) Mart.]. Bubák 1914: 217. IRAK. On litter leaves of *Populus ephraticae*, in an island off the river Tigris, south of Baghdad.

≡ *Dematium epiphyllum* Pers. – Synopsis methodica fungorum 2: 695. 1801.

– ***Cladosporium herbarum*** **(Pers. Fr.) Link** – Gesellschaft Naturforschender Freunde zu Berlin. Magazin für die Neuesten Entdeckungen in der gesammten Naturkunde 7: 37. 1816; Fries E. – Systema mycologicum 3 (2): 370. 1832. Reichert 1921: 721. EGYPT. On *Zilla spinosa*, Wadi Dugla, close to Cairo, leg. Schweinfurth; on *Astragalus fruticosus*, Citry of Rosetta, Delta Region, leg. Sickenberger.

≡ *Dematium herbarum* Pers. – Annals of Botany 11: 32. 1794; Synopsis methodica Fungorum: 699. 1801; Fries – Systema mycologicum 3 (2): 370. 1832.
= *Cladosporium typharum* Desm. – Plantes Cryptogames du Nord de la France, Ed. I, Ser. 2, Fasc. VII, No. 304. 1828; synonymy *fide* Dugan *et al.* (2004). Reichert 1921: 720. 1921. EGYPT. On *Typha angustiflolia*, locality of Gabbari, West of Alexandria, leg. G. Maire (not R. Maire, Professor of Botany at Alger University, Algeria); on leaves of *T. latifolia*, Wadi El-Natrun, Western Desert, leg. Sickenberger.
Teleomorph: *Davidiella tassiana* (De Not.) Crous & U. Braun – Mycological Progress 2: 8. 2003.

≡ *Sphaerella tassiana* De Not. – Sferiacei italici 1: 87. 1863.
A fairly large number of synonyms are provided by Dugan *et al.* (2004); such includes *Cladosporium typharum* Desm.

– ***Cladosporium macrocarpum*** **Preuss**, in Sturm – Deutschlands Flora 3 (26): 27. 1848.
= *Cladosporium herbarum* var. *macrocarpum* (Preuss) M.H.M. Ho & Dugan, in Ho M.H.M. *et al.* – Mycotaxon 72: 131. 1999.
= *Dematium graminum* Pers. – Mycologia europaea 1: 15. 1822; synonymy *fide* Schubert K. *et al*. (2007).

≡ *Cladosporium graminum* (Pers.) Link, in Willdenowia – Willdenow Species Plantarum Edn 4, 6 (1): 42. 1824.
= *Cladosporium graminum* Corda – Icones fungorum 1: 14. 1837; illegitimate name, ICBN Art. 53.1. Reichert 1921: 720. EGYPT. On *Andropogon foveolatus*, Village of El-Tor, Sinaï Peninsula, leg. Muschler.
For additional synonyms, see Dugan *et al.* (2004) and Schubert (2005).

A modern description of *Cladosporium macrocarpum* is provided by Schubert *et al.* (2007). According to these authors *Cladosporium graminum*, described by Persoon (1822), as well as *C. brunneum* and *C. gracile*, introduced by Corda (1837), are older taxonomic synonyms of *C. macrocarpum* Preuss; following the Code of Botanical Nomenclature, these names would have priority. However, since *Cladosporium macrocarpum* is a well established, currently used name with numerous records in literature, a proposal to conserve the name against these older names is in preparation.

– ***Coniothecium effusum*** **Corda** – Icones fungorum 1: 2. 1837. Bubák 1914: 218. IRAK. On living cortex of *Populus euphraticus*, in the woods in an island off the

River Tigris, south of Baghdad City, Mesopotamia, 35 m, 23 Apr. 1910, leg. Handel-Mazzetti no. 911. For comments on the genus, see *Coniothecium corticola*.

– ***Fumago vagans*** Pers. – Mycologia Europaea 1: 9. 1822. Reichert 1921: 724. EGYPT. On leaves of *Dalbergia melanoxylon*, locality of Shubra, Cairo, leg. Schweinfurth.

Fumago Pers., based on *F. vagans* Pers., was regarded as a *nomen confusum* by Hughes (1958). However, recent studies concluded it represents a synonym of the coelomycete *Leptoxyphium fumago* (Woronin) R.C. Srivast. – Archiv für Protistenkunde 125 (1-4): 333. 1982 [≡ *Caldariomyces fumago* Woronin – Annales mycologici 25 (3/4): 261. 1927]. The present specimen thus needs to be re-examined for a definite taxonomic decision.

– ***Fusarium avenaceum*** **(Fr.) Sacc.** – Sylloge fungorum 4: 713. 1886.

≡ *Fusisporium avenaceum* Fr. – Systema mycologicum 3 (2) : 444. 1832.

= *Fusarium herbarum* var. *avenaceum* (Fr.) Wollenw. – Fusaria autographica delineata, Edn. 1: no. 899. 1930.

= *Fusarium uredinicola* Jul. Müll. – Berichte der Deutschen Botanischen Gesellschaft 3: 395. 1885; synonymy *fide* Wollenweber & Reinking (1935). Reichert 1921: 727. EGYPT. On *Puccinia cesati* developing on *Andropogon annulatus*, City of Suez, leg. Muschler.

Teleomorph: *Gibberella avenacea* R.J. Cook – Phytopathology 57: 735. 1967.

– ***Fusarium sambucinum*** **Fuckel** – Jahrbücher des Nassauischen Vereins für Naturkunde 23-24: 167. 1870.

Typus: Fuckel, Fungi Rhen. No. 211 (G).

= *Fusarium roseum* Link – Gesellschaft Naturforschender Freunde zu Berlin. Magazin für die Neuesten Entdeckungen in der Gesammten Naturkunde 3: 471. 1832. Reichert 1921: 725. EGYPT. On *Oryza sativa*, City of Rosetta, Delta Region, leg. Sickenberger.

Teleomorph: *Giberella zeae* (Schwein.) Petch – Annales mycologici 34: 260. 1936.

≡ *Sphaeria zeae* Schwein. – Schriften der Naturforschenden Gesellschaft zu Leipzig 1: 48. 1822.

Although the name *Fusarium sambucinum* is younger than *F. roseum*, the former is conserved (Greuter *et al.,* 2000; ICBN - Saint Louis Code, Appendix III B: 378).

– *Macrosporium commune* Rabenh., in Rabenhorst – Fungi europaei exsiccati, Klotzschii Herb.…no. 1361. 1870. Reichert 1921: 724. EGYPT. Observed on a mouldy watermelon, Cairo, leg. Sickenberger.

According to Simmons (2007) the binomial was a *nomen nudum* when published and was never validated afterwards. Consequently, about 15 names published subsequently as varieties or forms of *Macrosporium commune* Rabenh. are invalid (ICBN Art. 43.1). Besides, most of these varieties or forms were also *nomina nuda*. Further the generic name *Macrosporium* Fr. 1832 is typified by a species, *M. cheiranthi* (Libert) Fr., which is now considered to be an *Alternaria* (Simmons, 2007).

– *Oidium erysiphoides* Fr. – Systema mycologicum 3 (2): 432. 1829; regarded as a *nomen dubium et ambiguum* by Braun (1995). Reichert 1921: 716. EGYPT. Details of several specimens are listed by Reichert (1921): host plants are *Ammi majus*, *Melilotus parviflorus*, *Trifolium alexandrinum*, *Trigonella foenum-graceum*, *T. hamosa*, *T. laciniata*, *T. stellata* and *Vicia calcarata*.

– ***Oidium leucoconium*** **Desm.** – Annales des Sciences Naturelles, Botanique, Sér. 1, 13: 102. 1829. Reichert 1921: 716. EGYPT. On *Rosa centifolia*, Cairo, Dec. 1875, leg. Schweinfurth; on *Rosa* sp., in the Garden of Kaffr Demuhra, City of Zagazig, Delta Region, Dec. 1901, leg. Schweinfurth.
Teleomorph: *Sphaerotheca pannosa* (Wallr.:Fr.) Lév. – Annales des Sciences Naturelles, Botanique, Sér. 3, 15: 138. 1851.

A comprehensive description of both states of the fungus and a list of accepted synonyms are provided by Braun (1995: 64-65).

– ***Passalora dissiliens*** **(Duby) U. Braun & Crous** – *Mycosphaerella* and its anamorphs: 1. Names published in *Cercospora* and *Passalora*. CBS Biodiversity Series 1: 164. 2003.
= *Cercospora roesleri* (Cattaneo) Sacc. – Michelia 2: 128. 1880 [cited by Reichert as *C. roesleri* (Cattaneo) Lindau]. Reichert 1921: 725. EGYPT. On leaves of *Vitis vinifera*, in a garden, locality of Ramleh, Alexandria, 22 Nov. 1911, leg. Schweinfurth.

≡ *Cladosporium roesleri* Cattaneo – Bollettino del Comizio agrario del circondario di Voghera 2: 63. 1876.
For other known synonyms, see under *Passalora dissiliens* in Section A of the text.

– ***Passalora rosicola*** **(Pass.) U. Braun** – Mycotaxon 55: 234. 1995.

≡ *Cercospora rosicola* Passer., in Thuemen [as *rosaecola*] – Mycotheca Universialis, No. 333. 1875 (description on label). Reichert 1921: 725. EGYPT. On *Rosa gallica*, in the garden of Ch. Stamm, Cairo, leg. Schweinfurth; in the garden of Abd El-Rahim Bey Ssabsi, West of Cairo, leg. Schweinfurth.
Teleomorph: *Mycosphaerella rosicola* B.H. Davis – Mycologia 30: 296. 1938.
For other known synonyms, see Crous & Braun (2003: 357).

– ***Polythrincium trifolii*** **Kunze**, in Kunze & Schmidt – Mykologische Hefte. Leipzig 1: 14. 1817; Ellis – Dematiaceous Hyphomycetes: 284. 1971. Reichert 1921: 720. EGYPT. On *Trifolium resupinum*, City of Mansurah, Apr. 1822/25, leg. Ehrenberg. Bubák 1914: 217. SYRIA. On leaves of *Trifolium meneghinianum*, in the mixed woods of *Populus* and *Salix*, on the bank of the River Tigris, close to Mossul, 250 m, leg. Handel-Mazzetti no. 1248.
Teleomorph: *Cymadothea trifolii* (Pers.) F.A. Wolf – Mycologia 27 (1): 71. 1935.

≡ *Sphaeria trifolii* Pers. – Synopsis methodica fungorum 1: 30. 1801.

A comprehensive description of both anamorphic and teleomorphic states of the ascomycete is provided by Sivanesan (1984: 143).

– ***Torula herbarum*** **(Pers.) Link** [cited by Reichert as *T. herbarum* Link] – Gesellschaft Naturforschender Freunde zu Berlin. Magazin für die neuesten Entedeckungen in der gesammten Naturkunde 3 (1-2): 19. 1809. Reichert 1921: 718. EGYPT. On *Phragmitis communis* var. *isiaca*, City of Mansurah, Delta Region, leg. Ehrenberg; on *Pancratium* sp., close to Cairo, leg. Sickenberger.

≡ *Monilia herbarum* Pers. – Synopsis methodica fungorum. Göttingen 2: 693. 1801.

ZYGOMYCETE

– *Absidia aegyptiaca* R. Sartory, J. Meyer & Tawfik [as *egyptiacum*] – Comptes rendus hebdomadaires des Séances de l'Académie des Sciences, Paris 208: 1842. 1939; *nomen invalidum*, ICBN Arts. 36 & 37. EGYPT. Isolated from the 'Bouza of Egypt', was a local native beer commonly prepared in older times from left-over bread.

Table 1. Present taxonomic positions of novel hyphomycetous taxa retreived

– Generic transfer:
Acremonium egyptiacum (F.H. Beyma) W. Gams, *Oospora egyptiaca* F.H. Beyma 1933
Fusicladium psammicola (Sacc.) U. Braun & K. Schub., *Exosporium psammicola* Sacc. 1913
Monilia hammonis Ehrenb. ex Link, *Torula hammonis* Ehrenb. 1824
Pseudocercosporella smyrnii (Maire) U. Braun, *Cercosporella smyrnii* Maire 1939

– Synonymy:
Acremonium luzulae (Fuckel) W. Gams, *Torula opuntiae* Reichert 1921
Alternaria macrospora A. Zimmerm., *Sporidesmium longipedicellatum* Reichert 1921
Candida tropicalis (Castellani) Berkhout, *Monilia aegyptiaca* Khouri 1932
Cercospora puncitformis Sacc. & Roum., *Fusicladium cynanchi* Reichert 1921
Fusarium oxysporum Schlecht., *Fus. vasinfectum* var. *aegyptiacum* T. Fahmy 1927
Lacellina graminicola (Berk. & Broome) Petch, *Lacellina libyca* Sacc. & Trotter 1913
Myrothecium verrucaria (Alb. & Schwein.) Ditmar:Fr., *Cryptomela acutispora* van Beyma 1933
Passalora dissiliens (Duby) U. Braun & Crous, *Cercospora leoni* S vulescu & Rayss 1935
Passalora dissiliens (Duby) U. Braun & Crous, ? *Cercospora coryneoides* S vulescu & Rayss 1935
Sirosporium mori (H. & P. Sydow) M.B. Ellis, *Cercospora snelliana* Reichert 1921
Stilbella fimetaria (Pers.) Lindau, *Stilbella dielsiana* Reichert 1921

– Simple name change:
Alternaria euphorbiicola E. Simmons & Engelhard, *Macrosporium euphorbiae* Reichert 1921

– No change in original names:

a – not re-evaluated since:
Bispora opuntiicola Reichert 1921
Cladosporium acaciae Reichert 1921
Cladosporium herbarum forma *cleomes* Trotter 1912
Cladosporium heuglinianum Thuem. 1879
Cladosporium hibisci Reichert 1921
Cladosporium pyriforme Reichert 1921
Clasterosporium lindavianum Reichert 1921
Clathrococcum magnusianum Reichert 1921
Coniosporium geophilum Sacc. & Trotter 1913
Coniothecium corticola Bubák 1914
Coniothecium heterosporum Reichert 1921
Coniothecium mucigenum Bubák 1914
Coniothecium pampaninianum Sacc. 1917
Coniothecium rhois Sacc. & Trotter 1912
Coniothecium tamariscinum Thuem. 1880
Hormiscium calligoni Reichert 1921
Hormiscium saccharicola Reichert 1921
Oidium abelmoschi Thuem. 1876-78
Tuberculina pelargonii Pat. 1889

b – taxonomically invalid being *nomen nudum* or *nomen confusum*:
Macrosporium commune forma *calotropidis* Trotter 1916
Macrosporium lineare Sacc. 1913
Macrosporium nitens forma *colocynthidis* Trotter 1916
Macrosporium oleae Reichert 1921
Oidium lippiae Thuem. 1876-78
Oidium medicagineum Thuem. 1878-80

c – still taxonomically valid:
Cercospora tripolitana Sacc. & Trotter 1913
Mauginiella scaettae Cavara 1925
Oidium haplophylli Magnus 1900

According to Ellis & Hesseltine (1966) the new species was described 'as having rhizoids, stolons, and sporangia, which are usually spherical and rarely pyriform. The sporangiophores were circinate with sporangia becoming progressively smaller upward. A zygospore is illustrated that is not *Absidia*-like but appears to be *Mucor*-like. Spores were 4.6-4.85 µm but no shape is given. We believe this may have been a mixed culture involving *Mucor* and some other fungus that forms rhizoids'.

The recent document on Zygomycetes reported from Egypt elaborated by Moustafa (2006) reviews 33 members of this taxonomic group. The name *Absidia aegyptiaca* was however not considered.

AGONOMYCETE

– ***Rhizoctonia solani* J.G. Kühn** – Die Krankheiten der Kulturgewächse, ihre Ursachen und ihre Verhütung: 224. 1858. XIV: 1175; XV: 321; *nomina conservanda*.

≡ *Moniliopsis solani* (J.G. Kühn) Moore – Mycotaxon 29: 95. 1987; *nomina rejicienda*.

Teleomorph: *Thanatephorus cucumeris* (A.B. Frank) Donk – Reinwardtia 3: 376. 1956.

≡ *Hypochnus cucumeris* A.B. Frank – Berichte der Deutschen Botanischen Gesellschaft 1: 62. 1883.

= *Rhizoctonia gossypii* var. *aegyptiaca* Forsten. – Phytopathologische Zeitschrift 3: 386. 1931. EGYPT. Infecting Cotton plants, agent of the sore shin disease.

Rhizoctonia gossypii var. *anatolica* was introduced by Forsteneichner (1931) as a result of his investigations on the seedling diseases of cotton in Turkey. Representative strains were found to differ in several respects from isolates of *Rhizoctonia solani* obtained either from potato in Germany or from cotton affected with sore shin disease in the State of Alabama, USA. The same Turkish strains could also be distinguished from isolates inducing this disease of cotton in Egypt. To account for the individuality of the Egyptian isolates, Forsteneichner (1931) proposed the second new varietal name: *Rhizoctonia gossypii* var. *aegyptiaca* Forsten.

Jakob (1969) conducted a two years survey (1966-1967) of fungal diseases of cotton seedlings in Egypt. His numerous isolates from several Egyptian cotton-growing areas included 33 strains of *Rhizoctonia*. Using the 'method of fusion' previously advocated by Forsteneichner (1931) for the segregation of *Rhizoctonia* isolates, the Egyptian strains could be separated into two groups:

– *R. gossypii* var. *aegyptiaca* Forsten. 1, nova variety: grouping isolates that do not fuse with any of the investigated comparison strains;

– *R. gossypii* var. *aegyptiaca* Forsten. 2, nova variety: for isolates matching the strains determined by Forsteneichner (1931) and to which the majority of the Egyptian *Rhizoctonia* isolates belonged.

Parmeter & Whitney (1970) regarded the new Egyptian variety as a synonym of *Rhizoctonia* (*Moniliopsis*) *solani*. This position was substantiated by Andersen & Stalpers (1994) who also failed to locate a relevant type material. *Rhizoctonia solani* is the best known species of the genus and was successfully proposed for conservation by Stalpers *et al.* (1998).

DISCUSSION

Available documents for the Middle East and for the period under consideration made possible the retreival of 44 hyphomycetes apparently new to science when described. Reports on the fungi of this region by Bubák (1914) and Reichert (1921) also provide local records of known hyphomycetes. These concern 19 species, 17 species found in Egypt and 2 species in Irak; only *Polythrincium trifolii* is common to Egypt and Syria, a country for which no novel hyphomycete was disclosed. As no species new to science originating from present Turkey (not considered as part of the Middle East following Mouchacca, 1997) could be traced in Bubák's work, the total number of hyphomycetes accounted for in the present note amounts to 62, since *Passalora dissiliens* is present in both subgroups under two synonymous names.

The oldest novel name, *Torula hammonis*, was introduced by Ehrenberg in 1824 on a voucher specimen of a fungus collected in Egypt. Despite this early record, only eight taxa had been proposed up to 1900. They were described by European mycologists from specimens received from resident collectors in Egypt, like Schweinfurth and Th. de Heuglin, or from travellers to Yemen (A. Deflers: *Tuberculina pelargonii*) and Palestine (J. Bornmüller: *Oidium haplophylii*).

The first decade of the 20th century has apparently not yielded any novel hyphomycete. Specimens of taxa named in the second decade (27.3% of the group) were collected in Lybia and Irak: 10 and 2 species respectively. The availability of the Libyan material correlates with the start of the Italian presence in the country: 1911-1942. The two Iraki taxa due to Bubák (1914) were based on collections provided by the Handel-Mazzetti expedition to the Orient in 1910. During the second decade World War I plagued Europe, a period inappropriate for scientific production. Such a major event also marks the end of the 'German collecting period' in the Middle East.

The 18 novelties of the 3rd decade (40.9%) basically concern the Nile Valley. Sixteen are due to Reichert and relate to the Egyptian specimens that accumulated in Berlin before the First World War; this material is the result of the collecting efforts of Ehrenberg and Schweinfurth. In the same decade two major pathogenic fungi were also described: *Mauginiella scaettae* infecting date palm trees in Libya and the agent of the Cotton wilt in Egypt: *Fusarium vasinfectum* var. *aegyptiacum*; the latter is also the first new hyphomycete of the region to be based on a living culture. Finally the six novelties of the 4th decade (13.6 %) concern three Egyptian living cultures: two soil-borne isolates obtained by Sabet and a yeast strain from a human infection, and three plant parasitic hyphomycetes from Palestine and Libya.

Information conveyed by the protologues of the 44 novel hyphomycetes confirm these descriptions have been elaborated by European mycologists active in their home countries. Descriptions prepared by specialists active in the area only, appeared after World War I. The trend relates to the arrival of English-speaking plant disease experts, especially in Egypt. Naming of fungi by native specialists becomes evident in the 3rd decade. It was, however, restricted to Egypt and Palestine, and is due to Fahmy and Sabet for the former and to T. Rayss for the latter country.

The holotypes of this limited group of fungi originate mostly from Egypt and Libya: 59.1% and 27.3% respectively; the remaining ones were collected in Palestine (3), Irak (2) and Yemen (1). All were members of known genera; only for *Lacellina libyca* the new genus *Lacellina* Sacc. had later to be established. The

recorded four cases of infraspecific taxa concern the agent of the cotton wilt disease in Egypt and the following Libyan fungi introduced by Trotter: *Cladosporium herbarum* forma *cleomes*, *Macrosporium commune* forma *calotropidis* and *M. nitens* forma *colocynthidis*.

A taxonomic update of the original binomials show their latest taxonomically valid names belong to 24 genera (Tab. 1). The genera *Coniothecium* and *Cladosporium* are best represented with 6 and 5 taxa; nevertheless, these two genera await modern treatments as underlined by Ellis (1971, 1976) and Crous *et al.* (2007). *Macrosporium* and *Oidium* have 4 taxa each. *Macrosporium* is definitely regarded as a synonym of *Alternaria* for which two species were also named in the same period; the correct taxonomic positions of their mideastern members have recently been reassessed by Simmons (2007). *Oidium* is a genus of plant-pathogenic fungi several of which are of economic importance. Two taxa respectively relate to *Acremonium*, *Cercospora*, *Passalora* and *Hormiscium*; only the latter still requires a taxonomic revision. The remaining 15 genera are each represented by one species; their discovery seem to be the result of casual observations.

A few hyphomycete have undergone a name change or a generic transfer (Tab. 1). Some others proved to be synonyms of previously introduced taxa. A fair number are still known however simply by their basic descriptions and/or localities of collections not having undergone any taxonomic revision. That there are only 44 hyphomycetes described over the long period from 1824-1940 indicates limited interest in fungi of this wide arid region.

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