



Bibliographic Inventory of Uredinales of Morocco

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1 SUMMARY

An inventory of Uredinales of Morocco is prepared for bibliographic databases. The 448 species recorded are distributed in 16 genera and 7 families. Thirty six (36) species are pathogenic on cereals and 412 species are related to wild plants.

RESUME. Un inventaire des Urédinales du Maroc est élaboré sur des bases bibliographiques. Les 448 espèces recensées sont réparties en 16 genres et 7 familles. Trente six (36) espèces sont pathogènes sur les céréales et 412 espèces sont liées à des plantes sauvages.

2 INTRODUCTION

The Uredinales are parasitic fungi capable of causing diseases (known as the «Rust») that affect crops in the temperate and tropical regions (Semal, 1989). Some rusts are heterocious that is they do accomplish to their cycle on two successive plants (black rust goes from the barberry "which represents the aecial host" to wheat "which is the secondary host"). However, there is autoecious rust that remains on the same host plant to carry out its cycle on all or part of the five fruiting forms (Bovey et al., 1979). In general, most rusts are obligate parasites, which mean they grow only on the host plant (Corbaz, 1990). Early work on the Moroccan flora of Uredinales goes back to the early 20th century with the work of Gonzalez Fragoso (1913), Malençon (1936), Maire and Werner (1937) and Malençon and Yen (1937). Between 1940 and 1942, Unammuno published the mycological notes in the Mauritania journal on the Uredinales encountered in the area of the North occupied at that time by the Spaniards. Rieuf's work, published during the

period from 1969 to 1971 in the Journals of agricultural research, has enriched the inventory of the fungal flora of Morocco.

The analysis of all this work shows that the data in Morocco on the mycoflora Uredinales are fragmented, dispersed and need to be consolidated and updated. The assembly of all the bibliographic data is valuable for future studies and therefore this study presents a first step in conducting an inventory on the Uredinales, associated with host plants wild and cultivated in Morocco. In this work, species are arranged in alphabetical order, the authorities, current names and synonyms and basyonymes are indicated. Scientific names are corrected and updated according to the ninth edition of "Ainsworth and Bisby's Dictionary of the Fungi" (Kirk, 2005). Some abbreviations have been introduced: SNS: substrate not reported. N.c: current Name. Syn.: Synonym. Byn: Basyonyme. The underlined species are conserved in the Herbarium of the Scientific Institute of Rabat (Morocco).

3 LIST OF SPECIES

-*Aecidium album* G.P. Clinton, in Peck. On *Lathyrus cicera*, *Lens esculenta*, *Pisum arvense* (Taoufiq, 1986), *Vicia faba*, *V. onobruchioides*, *V. peregrina*, *V. sativa* and *V. villosa* (Rieuf, 1970 et 1971).

-*Aecidium anchusae* Erikss. & Henning (1895). N.c: *Puccinia recondita* Dietel & Holw. 1857. On *Aecidium anchusae* (Rieuf, 1969).

-*Aecidium asparagi* Lasch (1848). N.c: *Puccinia asparagi* DC., in Lamarck & de Candolle 1805. On *Asparagus officinalis* (Rieuf, 1969).

-*Aecidium asperifolii* Pers. (1796). N.c: *Puccinia recondita* Dietel & Holw. 1857. On *Anchusa italica*, *Cynoglossum creticum*, *Cynoglossum* sp., *Echium plantagineum* and *Echium* sp (Rieuf, 1970). On *Echium plantagineum*, *Cynoglossum creticum*, *Cynoglossum* sp., *Anchusa azurea* and *A. undulata* var. *pseudogranatensis* in Millilia, Taza, Azrou and Chichaoua (Maire & Werner, 1937).

-*Aecidium berberidis* J.F. Gmel. (1792), Pers. (1796) Schumach. (1803), Sowerby (1803) & (Lév.) Herter (1933). N.c: *Puccinia graminis subsp. graminis* Pers. 1794. On *Aegilops ovata*, *A. triaristata*, *A. ventricosa*, *Agropyrum marginatum*, *Anthoxanthum odoratum*, *Arrhenatherum elatius*, *A. erianthum*, *Avena alba*, *A. brevis*, *A. bromoides*, *A. jabantiezi*, *A. sativa*, *A. sterilis*, *Berberis hispanica*, *Bromus hordaceus*, *B. macrostachys*, *B. ramosus* ssp. *benekenii*, *B. rigidus* ssp. *gussonii*, *B. squarrosurus*, *Cynosurus echinatus*, *Dactylis glomerata*, *Elymus caput-medusae*, *Festuca triflora*, *Hyalalidia hordeacea*, *Hordeum bulbosum*, *H. distichum*, *H. hexastichum*, *H. murinum*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *Poa pratensis*, *Secale cereale*, *Triticum flavescens*, *T. durum*, *T. sativum*, *T. sphaerococcum* and *Berberis hispanica* (Rieuf, 1970).

-*Aecidium betae* Kuhn (1869). On *Beta cicla*, *B. patellaris* var. *eu-patellaris* and *B. vulgaris* (Rieuf, 1969).

-*Aecidium centranthi* Thüm. On *Centranthus calcitrapa* (Unamuno, 1942b; Rieuf, 1969).

-*Aecidium compositarum f. helminthiae* Martin. On *Helminthia echioides* (Rieuf, 1969).

-*Aecidium endophylloides* Liou (1929). On *Euphorbia nicaeensis* in Immouzar of Kandar (Guyot & Malençon, 1957).

-*Aecidium euphorbiae* Ssensu Cooke, sensu auct., & Pers. (1792). N.c: *Endophyllum euphorbiae-sylvaticae* (DC.) G. Winter 1881, *Uromyces tuberculatus* Fuckel 1870 and *Uromyces pisi-sativi* (Pers.) Liro 1908. On *Euphorbia characias* (Unamuno, 1942b). On *Dianthus*

caryophyllus, *Dianthus prolifer* and *Dianthus* sp (Rieuf, 1969). On *Euphorbia nicaeensis*, *E. inconspicua* and *E. peplus* in Azrou, Marrakech, Rabat and Oued Darâa (Maire & Werner, 1937).

-*Aecidium euphorbiae-gerardianae* E. Fisch. (1904). On *Dianthus caryophyllus*, *D. prolifer* and *D.* sp (Rieuf, 1969).

-*Aecidium helianthi-mollis* Schwein. (1822). On *Helianthus annuus* (Rieuf, 1969).

-*Aecidium menthae* DC. (1815), N.c: *Puccinia menthae* Pers. 1801. On *Mentha longifolia*, *M. piperita*, *M. rotundifolia*, *M. sativa*, *Satureja atlantica*, *S. calmintha* ssp. *ascendens*, *S. calmintha* var. *calminthoide*, *S. grandiflora* var. *baborensis*, *S. rotundifolia*, *Satureja* sp., *S. vulgaris* and *S. vulgaris* ssp. *villosa* (Rieuf, 1970).

-*Aecidium ornithogaleum* Bubák (1905). N.c: *Puccinia bordei* G.H. Otth 1871. On *Hordeum bulbosum*, *H. hexastichum* and *H. vulgare* (Rieuf, 1969).

-*Aecidium oxalidis* Thüm. (1876). N.c: *Puccinia sorghi* Schwein. 1832. On *Oxalis corniculata* and *Zea mays* (Rieuf, 1969).

-*Aecidium phaseoli* Funck. On *Phaseolus vulgaris* in Ceuta (Maire & Werner, 1937).

-*Aecidium phillyreae* DC., (1815). N.c: *Zaghouania phillyreae* Pat. 1901. On *Phillyrea angustifolia*, *Phillyrea latifolia*, *Phillyrea media* and *Phillyrea* sp (Rieuf, 1969).

-*Aecidium plantaginis* Ces. (1859). N.c: *Puccinia cynodontis* Lacroix ex Desm. 1859. On *Plantago* sp (Rieuf, 1969 et 1971).

-*Aecidium punctatum* Pers. (1796). N.c: *Tranzschelia discolor* (Fuckel) Tranzschel & M.A. Litv. 1939. On *Amygdalus communis*, *Anemone coronaria*, *Armeniaca vulgaris*, *Persica vulgaris*, *Prunus domestica* and *P. japonica* (Rieuf, 1969).

-*Aecidium punicum* Juel (1901). On *Thapsia decussata* and *T. villosa* (Rieuf, 1969).

Aecidium ranunculacearum DC. (1815). N.c: *Uromyces dactylidis* G.H. Otth 1861. On *Ranunculus cf. spicatus* in Ifrane (Guyot & Malençon, 1957). On *Ranunculus nemorosus*, *R. orientalis*, *R. paludosus* and *R. spicatus* (Rieuf, 1969 et 1971). On *Ranunculus orientalis* in Ifrane. On *R. paludosus* near Ifrane (Guyot & Malençon, 1963).

-*Aecidium rhamnii* J.F. Gmel. (1792). N.c: *Puccinia coronata* Corda 1837. On *Agrostis stolonifera*, *Arrhenatherum elatius*, *Avena alba*, *A. longiglumis*, *A. sativa*, *A. sterilis*, *Bromus* sp., *Catabrosa aquatica*, *Festuca ciliata*, *F. mairei*, *F. triflora*, *Glycera distans*, *Lamarckia*



aurea, *Lolium multiflorum*, *L. perene*, *Phalaris tuberosa*, *Rhamnus lycioides* ssp. *oleoides* and *Vulpia alopecuroides* (Rieuf, 1969).

-*Aecidium rubellum* J.F. Gmel. (1792). On *Phragmites communis*, *R. conglomeratus*, *R. crispus* and *R. sp* (Rieuf, 1969).

-*Aecidium sedi* Jacq. 1900. On *Sedum sedoides* in Ain-Leuh (Maire & Werner, 1937).

-*Aecidium* sp. Rieuf (1969), Guyot A. L. & Malençon G. (1963). On *Geranium malviflorum* (Rieuf, 1969). On *Balansaea glaberrima*, *Valerianella discoidea* and *V. microcarpa* near Azrou aux (Guyot & Malençon, 1963).

-*Aecidium thrincae* Unamuno. On *Thrinca* sp (Unamuno, 1942a). On *Leontodon* sp (Rieuf, 1969).

-*Aecidium umbilici* Trotter. On *Umbilicus veneris* in Oued Nfifik (Maire & Werner, 1937).

-*Aecidium valerianellae* Biv. On *valerianella discoidea* and *Fedia cornucopiae* in Tanger, Taza, El Hajeb and Tanant (Maire & Werner, 1937).

-*Coleosporium carpessii* Sacc. (1874). On *Odontospermum aquaticum* (Unamuno, 1940c) and *Asteriscus aquaticus* (Rieuf, 1969 et 1970).

-*Coleosporium inulae* (Kunze) (1851). On *Inula viscosa* in the region of safi (Guyot & Malençon, 1957). On *Inula viscosa* in Ouirgane (Guyot & Malençon, 1963). On *Inula viscosa* (Rieuf, 1969; Unamuno, 1940b). On *Bubonium imbricatum*, *Inula graveolens*, *I. viscosa*, *Pallenis spinosa* and *Pinus halepensis* (Rieuf, 1969). On *Pallenis spinosa* and *Pinus halepensis* (Rieuf, 1970).

-*Coleosporium senecionis* (Pers.) Fr. (1867). N.c: *Coleosporium tussilaginis* (Pers.) Lév., in Orbigny 1849. Byn.: *Uredo farinosa* β *senecionis* Pers. 1801. On *Senecio mikanoides* in Tanger (Unamuno, 1940a). On *Hertica maroccana*, *Senecio doria*, *S. leucanthemifolius* and *S. lividus* (Rieuf, 1969). On *Senecio doria* in Ifrane (Guyot & Malençon, 1957). On *Senecio leucanthemifolius* in El Jadida (Guyot & Malençon, 1963). On *Senecio doria*, *S. leucanthemifolius*, *S. lividus* and *S. mikanoides* (Rieuf, 1970).

-*Coleosporium sonchi* Lév. (1854). N.c: *Coleosporium tussilaginis* (Pers.) Lév., in Orbigny 1849. On *Sonchus* sp. and *S. tenerrimus* (Rieuf, 1969).

-*Coleosporium sonchi-arvensis* (Pers.) Lév. (1860). N.c: *Coleosporium tussilaginis* (Pers.) Lév., in Orbigny 1849. On *Sonchus* sp. and *S. tenerrimus* (Rieuf, 1969 et 1970).

-*Cronartium quercuum* (Berk.) Miyabe ex Shirai 1899. N.c: *Cronartium quercuum* (Berk.) Miyabe ex Shirai, *Bot. Mag.*, Tokyo 13: 74 (1899). Syn.: *Aecidium*

giganteum Mayr, (1890), *Cronartium asclepiadeum* var. *quercuum* Berk. [as 'quercuum'], *Grevillea* 3(no. 26): 59 (1874), *Cronartium cerebrum* (Peck) Hedgc. & Long: 247 (1914), *Cronartium fusiforme* Hedgc. & N.R. Hunt ex Cummins, *Mycologia* 48(4): 603 (1956), *Cronartium fusiforme* Hedgc. & N.R. Hunt, *Phytopathology* 8: 316 (1918), *Cronartium quercus* (Brond.) J. Schröt. ex Arthur, *N. Amer. Fl.* (New York) 7(2): 122 (1907), *Dicaeoma quercus* (G.H. Otth) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 470 (1898), *Melampsora quercus* (Brond.) J. Schröt., *Michelia* 2(no. 7): 308 (1881), *Peridermium cerebrum* Peck, *Bull. Buffalo Soc. nat. Sci.* 1(2): 68 (1873), *Peridermium fusiforme* Arthur & F. Kern, *Bull. Torrey bot. Club* 33: 421 (1906), *Peridermium giganteum* (Mayr) Tubeuf, *Handb. Pflanzenker.*: 56 (1895), *Peridermium mexicanum* Arthur & F. Kern, *Bull. Torrey bot. Club* 33: 422 (1906), *Puccinia quercus* (Brond.) G.H. Otth, *Uredo quercus* Brond., in Duby, *Bot. Gall.* (Paris) 2: 893 (1830) and *Uromyces quercus* (Brond.) Lév., *Annls Sci. Nat., Bot.*, sér. 3 8: 376 (1847). On *Quercus ilex* in Ourika (Maire & Werner, 1937).

-*Gymnosporangium atlanticum* Guyot & Malençon (1957). N.c: *Gymnosporangium atlanticum* Guyot & Malençon, *Trav. Inst. Sci. Cherifien, Ser. Bot.* 11: 15 (1957). On *Juniperus phoenicea* in Mehdyia near Port of Lyautey (Guyot & Malençon, 1957). On *Juniperus phoenicea* and *Juniperus* sp (Rieuf, 1969).

-*Gymnosporangium clavariiforme* (Wulfen) DC. (1805). N.c: *Gymnosporangium clavariiforme* (Wulfen) DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 217 (1805). Syn.: *Tremella clavariiformis* Wulfen [as 'clavariaeformis'], in Jacquin, *Collnea bot.* 2: 174 (1788), *Podisoma clavariiforme* (Wulfen) Duby [as 'clavariaeforme'], *Bot. Gall.*, Edn 2 (Paris) 2: 545-1068 (1830), *Tremella clavariiformis* Wulfen, in Jacquin, *Collnea bot.* 2: 174 (1788) var. *clavariiformis*, *Roestelia lacerata* Mérat, *Nouv. Fl. Environs Paris*: 113 (1821), *Gyraria juniperina* (Wahlenb.) Gray, *Nat. Arr. Brit. Pl.* (London) 1: 594 (1821) and *Tremella juniperina* Wahlenb., *Fl. Suecica* 2: 994 (1826). On *Creataegus monoegyna* (Unamuno, 1940c). On *Creataegus oxyacantha*, *Juniperus phoenicea* and *J. oxycedrus* (Rieuf, 1969).

-*Gymnosporangium confusum* Dietel, 1889 & plower, 1889. N.c: *Gymnosporangium confusum* Plowr., *Monograph Brit. Ured.*: 232 (1889). Syn.: *Aecidium cydoniae* Lenorm., in Duby, *Bot. Gall.* (Paris) 2: 903 (1830), *Roestelia cydoniae* (Lenorm.) Thüm., in Berlese, De Toni & Fischer, *Syll. fung.* (Abellini) 7: 834 (1888), *Gymnosporangium oxycedri* Bres., *Brotéria*,

sér. bot. 2: 88 (1903) and *Gymnosporangium tauricum* Erikss., (1919). On *Crataegus monogyna* (El Assfour et al., 2003). On *Crataegus oxyacantha*, *Crataegus* sp., *Cydonia vulgaris*, *Juniperus oxycedrus*, *J. phoenicea*, *Juniperus* sp., *Mespilus germanica* and *Pirus communis* (Rieuf, 1969). On *Mespilus germanica* (Rieuf, 1970). On *Juniperus oxycedrus* in the forest of Azrou. On *Juniperus phoenicea* in Mehedy and *Crataegus oxyacantha* near Azrou (Guyot & Malençon, 1957). On *Cydonia maliformis* near Asni and *Juniperus oxycedrus* in Tizi n'treten (Guyot & Malençon, 1963). On *Cydonia maliformis*, *Crataegus monogyna* and *Juniperus phoenicea* in Demnat (Maire & Werner, 1937).

-*Gymnosporangium fuscum* DC. (1805). N.c: *Gymnosporangium sabinae* (Dicks.) G. Winter 1884. On *Juniperus phoenicea* and *Pirus communis* (Rieuf, 1969).

-*Gymnosporangium fusisporum* E. Fisch. (1918). N.c: *Gymnosporangium fusisporum* E. Fisch., 3: 58 (1918). On *Cotoneaster nummularia* (Maire & Werner, 1937; Rieuf, 1969).

***Gymnosporangium gracile* Pat.** (1902). N.c: *Gymnosporangium gracile* Pat., *Bull. Soc. mycol. Fr.* 18(2): 47 (1902). On *Crataegus oxycedrus* (Maire & Werner, 1937). On *Crataegus oxyacantha*, *Juniperus oxycedrus* and *Juniperus oxycedrus* (Rieuf, 1969).

-*Gymnosporangium juniperinum* (L.) Mart. (1817). N.c: *Gymnosporangium cornutum* Arthur ex F. Kern 1911. On *Pirus malus* (Rieuf, 1969).

-*Gymnosporangium oxycedri* Bres. (1903). N.c: *Gymnosporangium confusum* Plowr. 1889. On *Crataegus monogyna* and *Juniperus oxycedrus* Maire & Werner, 1937). On *Crataegus oxyacantha* and *Juniperus oxycedrus* (Rieuf, 1969).

-*Gymnosporangium sabinae* (Dicks.) G. Winter (1884). N.c: *Gymnosporangium sabinae* (Dicks.) G. Winter, *Pilze Deutschl.* 1: 232 (1884). Syn.: *Tremella sabinae* Dicks., *Fasc. pl. crypt. brit.* (London) 1: 14 (1785), *Tremella digitata* Hoffm., *Veg. Crypt.* 1: 33 (1787), *Tremella clavariiformis* ? *digitata* (Hoffm.) Pers. [as 'clavariiformis'], (1801) *Tremella clavariiformis* var. *digitata* (Hoffm.) Pers., *Syn. meth. fung.* (Göttingen) 2: 629 (1801), *Acidium cancellatum* Pers., in Gmelin, *Systema Naturae*, Edn 13 2(2): 1472 (1792), *Puccinia juniperi* Pers., *Neues Mag. Bot.* 1: 118 (1794), *Roestelia cancellata* Rebert., *Prodr. fl. neomarch.* (Berolini): 350 (1804), *Gymnosporangium fuscum* DC., in Lamarck & de Candolle, *Fl. franc.*, Edn 3 (Paris) 2: 217 (1805), *Tremella fusca* DC., *Encycl. Méth. Bot.* 8: 39 (1806) and *Podisoma juniperi-sabinae* Fr., *Syst. mycol.* (Lundae)

3(2): 508 (1832). On *Juniperus phoenicea*, *Pirus communis* and *P. malus* (Rieuf, 1969).

-*Hyalopsora adianti-capilli-veneris* (DC.) Syd. (1903). N.c: *Hyalopsora adianti-capilli-veneris* (DC.) Syd., *Annls mycol.* 1(3): 249 (1903). Syn.: *Uredo adianti-capilli-veneris* DC. On *Adiantum capillus-veneris* (Guyot & Malençon, 1963; Rieuf, 1969).

-*Hyalopsora aspidiotus* (Perk) Magnus. N.c: *Hyalopsora aspidiotus* (Peck) Magnus, *Ber. dt. bot. Ges.* 19: 582 (1901). Syn.: *Uredo aspidiotus* Peck, *Ann. Rep. N.Y. St. Mus.* 22: 88 (1869), *Uredo filicum* sensu auct.; fide Checklist of Basidiomycota of Great Britain and Ireland (2005), *Uredo polypodii* J. Schröt., in Cohn, *Krypt.-Fl. Schlesien* (Breslau) 3.1(17-24): 374 (1887) and *Melampsorella aspidiotis* Magnus, *Bull. Inst. bot. Univ. Belgrade* 13: 288 (1895). On *Cystopteridis filix-fragilis* (Rieuf, 1969).

-*Hyalopsora polypodii* (Persoon) Magnus (1901). N.c: *Hyalopsora polypodii* (Pers.) Magnus, *Ber. dt. bot. Ges.* 19: 582 (1901). Syn.: *Uredo linearis* var. *polypodii* Pers., *Syn. meth. fung.* (Göttingen) 1: 217 (1801), *Uredo polypodii* (Pers.) DC., *Fl. franc.*, Edn 3 (Paris) 6: 81 (1815), *Uredo polypodii* (Pers.) DC., (1815) var. *polypodii*, *Uredo filicum* sensu auct.; fide Checklist of Basidiomycota of Great Britain and Ireland (2005) and *Pucciniastrum polypodii* Dietel, *Hedwigia* 38: 260 (1899). On *Cystopteris filix-fragilis* ssp. *fragilis* in Bab Taza (Guyot & Malençon, 1963). On *Cystopteris filix-fragilis* (Rieuf, 1969).

-*Hyalopsora polypodii-dryopteridis* (Mougeot & Nestler) Magnus. On *Cystopteridis filix-fragilis* (Maire & Werner, 1937; Rieuf, 1969).

-*Kuehneola fici* E.J. Butler (1914). N.c: *Cerotelium fici* (Castagne) Arthur 1917. On *Ficus carica* in Oualidia (Guyot & Malençon, 1957). On *Ficus carica* and *Ficus retusa* (Rieuf, 1969).

-*Kuehneola fici* var. *abyssinica* (Castagne) Hennings. On *Ficus retusa* (Rieuf, 1969).

-*Melampsora allii-populina* Kleb. (1902). N.c: *Melampsora allii-populina* Kleb., *Z. PflKrankh. PflPath. PflSchutz* 12: 25 (1902). Syn.: *Uredo ari-italici* (Req.) F. Rudolphi, (1829) and *Caeoma ari-italici* F. Rudolphi, *Linnaea* 4: 512 (1829). On *Populus* sp., *Caeoma allii-ursini*, *Populus nigra* and *P. nigra* var. *italica* (Rieuf, 1969). On *Populus* sp in Azrou (Guyot & Malençon, 1957).

-*Melampsora amygdalinae* Kleb. (1900). N.c: *Melampsora amygdalinae* Kleb., in Pringsheim, *Jb. wiss. Bot.* 34: 352 (1900). On *Salix* sp (Rieuf, 1969 et 1971).

Melampsora euphorbiae (Ficinus & C. Schub.) Castagne (1843). N.c: *Melampsora euphorbiae* (Ficinus & C. Schub.) Castagne, *Observ. Uréd.* 2: 18 (1843). Syn.: *Xyloma euphorbiae* Ficinus & C. Schub., *Fl. Geg. Dresd.* 2: 310 (1823), *Uredo helioscopiae* Pers., *Tent. disp. meth. fung.* (Lipsiae): 13 (1797), *Melampsora helioscopiae* (Pers.) G. Winter, *Rabenh. Krypt.-Fl.*, Edn 2 (Leipzig) 1.1: 240 (1881), *Uredo euphorbiae-helioscopiae* Pers., *Syn. meth. fung.* (Göttingen) 1: 215 (1801), *Uredo euphorbiae-helioscopiae* Pers., *Syn. meth. fung.* (Göttingen) 1: 215 (1801) var. *euphorbiae-helioscopiae*, *Uredo ricini* Biv., (1815), *Physonema ricini* (Biv.) Lév., *Annls Sci. Nat., Bot.*, sér. 3 8: 374 (1847), *Melampsorella ricini* (Biv.) De Toni, in Berlese, De Toni & Fischer, *Syll. fung.* (Abellini) 7: 596 (1898), *Uredo euphorbiae* (C. Schub.) Castagne, *Rhytisma euphorbiae* Ficinus & C. Schub., *Fl. Geg. Dresd.* 2: 310 (1823), *Lecythea euphorbiae* Lév., *Annls Sci. Nat., Bot.*, sér. 3 8: 374 (1847), *Melampsora euphorbiae* var. *euphorbiae-dulcis* (G.H. Otth) U. Braun, *Feddes Repert. Spec. Nov. Regni Veg.* 93(3-4): 233 (1982), *Melampsora ricini* Pass., *Erb. critt. Ital.*, Ser. 2, fasc.: no. 684 (1873), *Melampsora gelmii* Bres., *Boll. Soc. bot. ital.* 4: 75 (1897), *Melampsora euphorbiae-gerardiana* W. Muell., *Zentbl. Bakt. ParasitKde*, Abt. II 2: 548 (1907), *Melampsora euphorbiae-cyparissiae* W. Muell., *Zentbl. Bakt. ParasitKde*, Abt. II: 553 (1907) and *Melampsora ricini* Pass. ex E.A. Noronha, *Agron. lusit.* 14: 229 & 242 (1952). On *Euphorbia peplus* in Tanger (Unamuno, 1940b et 1942a). On *Euphorbia exigua*, *E. helioscopia*, *E. peplis* and *E. pubescens* var. *genuina* (Rieuf, 1969). On *Euphorbia helioscopia* and *E. exigua* (Guyot & Malençon, 1957). On *Euphorbia helioscopia*, *E. exigua*, *Euphorbia pubescens* var. *genuina* and *Euphorbia* sp (Guyot & Malençon, 1963).

Melampsora euphorbiae-dulcis G.H. Otth (1868). N.c: *Melampsora euphorbiae*. On *Euphorbia pubescens* in Melilla and Oued Yquem near Rabat (Guyot & Malençon, 1963; Maire & Werner, 1937).

Melampsora euphorbiae-exigua W. Muell. (1907). On *Euphorbia exigua* in Rabat, Taourirt and Demnat (Maire & Werner, 1937).

Melampsora euphorbiae-gerardiana W. Muell. 1907. N.c: *Melampsora euphorbiae* (Ficinus & C. Schub.) Castagne 1843. On *Euphorbia falcata* and *E. Characias* (Maire & Werner, 1937; Rieuf, 1969).

Melampsora euphorbiae-sulcatae Unamuno. On *Euphorbia sulcatae* in Kalaa (Unamuno, 1942b).

Melampsora evonymi-caprearum Klebahn. On *Salix pedicellata* (Rieuf, 1969 et 1971).

Melampsora gelmii Bres. (1897). N.c: *Melampsora euphorbiae* (Ficinus & C. Schub.) Castagne, *Observ. Uréd.* 2: 18 (1843). Syn.: *Lecythea euphorbiae* Lév., *Annls Sci. Nat., Bot.*, sér. 3 8: 374 (1847), *Melampsora euphorbiae* var. *euphorbiae-dulcis* (G.H. Otth) U. Braun, *Feddes Repert. Spec. Nov. Regni Veg.* 93(3-4): 233 (1982), *Melampsora euphorbiae-cyparissiae* W. Muell., *Zentbl. Bakt. ParasitKde*, Abt. II: 553 (1907), *Melampsora euphorbiae-gerardiana* W. Muell., *Zentbl. Bakt. ParasitKde*, Abt. II 2: 548 (1907), *Melampsora gelmii* Bres., *Boll. Soc. bot. ital.* 4: 75 (1897), *Melampsora helioscopiae* (Pers.) G. Winter, *Rabenh. Krypt.-Fl.*, Edn 2 (Leipzig) 1.1: 240 (1881) [1884], *Melampsora ricini* Pass. ex E.A. Noronha, *Agron. lusit.* 14: 229 & 242 (1952), *Melampsora ricini* Pass., *Erb. critt. Ital.*, Ser. 2, fasc.: no. 684 (1873), *Melampsorella ricini* (Biv.) De Toni, in Berlese, De Toni & Fischer, *Syll. fung.* (Abellini) 7: 596 (1898), *Physonema ricini* (Biv.) Lév., *Annls Sci. Nat., Bot.*, sér. 3 8: 374 (1847), *Rhytisma euphorbiae* Ficinus & C. Schub., *Fl. Geg. Dresd.* 2: 310 (1823), *Uredo euphorbiae* (C. Schub.) Castagne, *Uredo euphorbiae-helioscopiae* Pers., *Syn. meth. fung.* (Göttingen) 1: 215 (1801), *Uredo euphorbiae-helioscopiae* Pers., *Syn. meth. fung.* (Göttingen) 1: 215 (1801) var. *euphorbiae-helioscopiae*, *Uredo helioscopiae* Pers., *Tent. disp. meth. fung.* (Lipsiae): 13 (1797), *Uredo ricini* Biv., (1815) and *Xyloma euphorbiae* Ficinus & C. Schub., *Fl. Geg. Dresd.* 2: 310 (1823). On *Euphorbia obtusifolia* (Rieuf, 1969).

Melampsora helioscopiae (Pers.) Castagne (1881). N.c: *Melampsora euphorbiae* (Ficinus & C. Schub.) Castagne 1843. Byn.: *Uredo helioscopiae* Pers. 1797. On *Euphorbia helioscopia* (Unamuno, 1942a). On *Euphorbia pepulus*, *E. pterococca*, *E. helioscopia* and *E. nicaensis* in Chaouen and Targuist (Maire & Werner, 1937). On *Euphorbia falcata*, *E. helioscopia*, *E. pterococca*, *E. nicaensis* and *E. peplis* (Rieuf, 1969). On *Euphorbia helioscopia* in Chaouen and Ifrane (El Assfour et al., 2003; Maire & Werner, 1937).

Melampsora larici-populina Kleb. (1902). N.c: *Melampsora larici-populina* Kleb., *Z. PflKrankh. PflPath. PflSchutz* 12: 43 (1902). Syn.: *Sphaeria populi* Sowerby, *Col. fig. Engl. Fung. Musbr.* 3: 157 (1803), *Phoma populi* (Sowerby) Fr., *Syst. mycol.* (Lundae) 2(2): 547 (1823) and *Melampsora populi* (Sowerby) M. Morelet, *Cryptog. Mycol.* 6(2): 107 (1985). On *Populus deltoides* var. *carolinensis* and *P. nigra* var. *italica* (Rieuf, 1969 et 1971). On leaves of *Populus carolinensis* in Dam of Fouarat (Guyot & Malençon, 1963).

Melampsora lini (Ehrenb.) Lév. 1847. In Bab Taza (SNS) (Ramadani, 1996). On *Linum*

angustifolium, *L. mediterraneum*, *L. strictum*, *L. tenue* and *L. usitatissimum* (Maire & Werner, 1937; Rieuf, 1969 et 1971).

-*Melampsora pulcherrima* Bub. R. Maire 1921. On *Mercurialis annua* (Unamuno, 1940b et 1942b). On *Caeoma pulcherrima*, *Populus alba* var. *bickeliana* and *P. nigra* (Rieuf, 1969). On *Mercurialis annua* in El Hajeb (Jlibene, 1996). On *Mercurialis annua*, *Populus nigra* and *P. nigra* var. *italica* (Rieuf, 1971). On *Mercurialis annua*, *Populus alba* and *Populus nigra* in Port Lyautey, Tanant and Taroudant (Maire & Werner, 1937).

Melampsora ribesii-purpureae Kleb. (1901). N.c: *Melampsora epitea* var. *epitea* Thüm. 1879. On *Salix Babylonica* in Sefrou (Guyot & Malençon, 1957; Rieuf, 1971). Sur *Salix purpurea* in Ain Nokra (El Assfour et al., 2003).

-*Melamprosa rostrupii* G.H. Wagner (1896). N.c: *Melampsora populnea* (Pers.) P. Karst. 1879. On *Populus alba* (Rieuf, 1971).

-*Melampsora* sp. Unamuno (1941). On *Euphorbia medicaginea* (Unamuno, 1941), *E. nicaensis* in Immouzar Kander (Guyot & Malençon, 1957). On *Euphorbia nicaensis* near Ifrane and *Artemisia herba-alba* near El Hoceima (Guyot & Malençon, 1963).

-*Melampsorella ricini* (Bivona-Bernardi) DE Toni (Biv.) (1898). N.c: *Melampsora euphorbiae* (Ficinus & C. Schub.) Castagne 1843. Byn.: *Uredo ricini* Biv. 1815. On *Ricinus communis* (Rieuf, 1969).

-*Melampsora hypericorum* (D.C) J. Schrot. 1871. N.c: *Melampsora hypericorum* (DC.) J. Schröt., *Jber. schles. Ges. vaterl. Kultur* 49: 1 (1871). Syn.: *Uredo hypericorum* DC., *Mém. Agric. Soc. Agric. Dép. Seine* 10: 235 (1807), *Mesopsora hypericorum* (DC.) Dietel, *Annls mycol.* 20(1/2): 30 (1922), *Uredo hypericorum* DC., *Mém. Agric. Soc. Agric. Dép. Seine* 10: 235 (1807) var. *hypericorum* and *Caeoma hypericorum* Schldtl., *Fl. berol.* (Berlin) 2: 122 (1824). On *Hypericum coadunatum*, *H. metroi* and *H. tomentosum* (Rieuf, 1969). On *Hypericum metroi* in Tazzeke (Guyot & Malençon, 1957). On *Hypericum coadunatum* in the region of Marrakech (Guyot & Malençon, 1963). On *Hypericum coadunatum* in Ourika (El Assfour et al., 2003; Maire & Werner, 1937).

-*Milesina wilczekiana* Maire 1929. N.c: *Milesina kriegeeriana* (Magnus) Magnus, *Bull. Inst. bot. Univ. Belgrade* 27: 325 (1909). Byn.: *Melampsorella kriegeeriana* Magnus 1901. Syn.: *Melampsorella kriegeeriana* Magnus, *Bull. Inst. bot. Univ. Belgrade* 19: 581 (1901) and *Milesia kriegeeriana* (Magnus) Arthur, *Mycologia* 7(4):

176 (1915). On *Cheilanthes pleridioides* in Taza (Maire & Werner, 1937).

-*Phragmidium circumvallatum* Magnus (1894). On *Geum heterocarpum* (Rieuf, 1970).

Phragmidium disciflorum sensu Grove [Brit. Rust Fung. p. 293 (1913)] & (Tode) J. James (1895). N.c: *Phragmidium rosae-pimpinellifoliae* Dietel 1905 and *Phragmidium mucronatum* (Pers.) Schldtl. 1824. Byn.: *Ascophora disciflora* Tode 1790. On *Rosa* sp (Guyot & Malençon, 1957; Unamuno, 1940b et 1941). On *Rosa agrestis*, *R. damascena*, *R. micrantha* and *Rosa* sp (Rieuf, 1970). On *Rosa agrestis* and *R. canina* (Guyot & Malençon, 1963). On *Rosa agrestis*, *R. canina*, *R. damascena*, *R. micrantha* and *Rosa* sp (Rieuf, 1971).

-*Phragmidium fragariastrum* (DC.) Schröt. (1889). N.c: *Phragmidium fragariae* G. Winter 1884. Byn.: *Puccinia fragariastrum* DC., in de Candolle & Lamarck 1815. On *Potentilla micrantha* (Maire & Werner, 1937; Rieuf, 1970 et 1971).

-*Phragmidium mucronatum* (Pers.) Schldtl. (1824). N.c: *Phragmidium mucronatum* (Pers.) Schldtl., *Fl. berol.* (Berlin) 2: 156 (1824). Syn.: *Puccinia mucronata* Pers., *Neues Mag. Bot.* 1: 118 *Phragmidium incrassatum* var. *mucronatum* (1794), (Pers.) Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 85 (1825), *Aregma phragmidium subsp. mucronatum* (Pers.) Fr., *Syst. mycol.* (Lundae) 3(2): 497 (1832), *Aregma mucronatum* (Pers.) Fr., *Syst. mycol.* (Lundae) 3(2): 497 (1832), *Uredo effusa* sensu auct.; fide Checklist of Basidiomycota of Great Britain and Ireland (2005), *Ascophora disciflora* Tode, *Fung. mecklenb. sel.* (Lüneburg) 1: 16 (1790), *Phragmidium disciflorum* (Tode) J. James, *Contr. U.S. natnl. Herb.* 3(4): 276 (1895), *Lycopodon subcorticium* Schrank, *Hoppe's Botanisches Taschenbuch*: 68 (1793), *Caeoma rosae* var. *miniaturum* (Pers.) Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 30 (1825), *Phragmidium subcorticium* (Schrank) G. Winter, *Rabenh. Krypt.-Fl.*, Edn 2 (Leipzig) 1.1: 228 (1881), *Puccinia mucronata a rosae* Pers., *Neues Mag. Bot.* 1: 118 (1794), *-Phragmidium rosae* (Pers.) Rostr., *Plantepatologi*: 277 (1902), *Uredo aurea* Purton, *Bot. descr. Brit. pl.* 3: 725 (1821), *Aregma phragmidium* Fr., *Syst. mycol.* (Lundae) 3(2): 496 (1832), *Lecythaea rosae* Lév., *Annls Sci. Nat., Bot.*, sér. 3 8: 374 (1847), *Coleosporium pingue* Lév., *Annls Sci. Nat., Bot.*, sér. 3 8: 373 (1847), *Coleosporium miniaturum* Bonord., *Kenntniss Gattungen Coniomyceten und Cryptomyceten* (Halle): 20 (1860), *Phragmidium bullatum* Westend., *Bull. Soc. R. Bot. Belg.* 30: 11 (1863), *Phragmidium mucronatum* var. *bullatum* (Westend.) J. Kickx f., *Fl. Crypt. Flandres* 2: 69 (1867), *Phragmidium*

rosarum Fuckel, *Jb. nassau. Ver. Naturk.* 23-24: 47 (1870) and *Aregma disciflora* Arthur, *Proc. Indiana Acad. Sci.*: 179 (1899). On *Rosa agrestis*, *R. damascena*, *R. Micrantha* and *Rosa* sp (Rieuf, 1970).

-Phragmidium potentillae (Pers.) P. Karst. (1879), sensu Mason & Grainger [Cat. Yorks. Fungi p. 44 (1937)] & sensu Cunningham. N.c: *Frommeilla tormentillae* (Fuckel) Cummins & Y. Hirats. 1983, *Phragmidium constrictosporum* G.F. Laundon 1976, *Phragmidium acaenae* G. Cunn. 1924 and *Phragmidium potentillae* (Pers.) P. Karst., *Bidr. Känn. Finl. Nat. Folk* 31: 49 (1879). Syn.: *Puccinia potentillae* Pers., *Syn. meth. fung.* (Göttingen) 1: 229 (1801) and *Uredo potentillarum* sensu auct. p.p.; fide Checklist of Basidiomycota of Great Britain and Ireland (2005). On *Potentilla maura* in Tizi-n-Telouet (Maire & Werner, 1937). On *Potentilla maura* (Rieuf, 1970 et 1971).

-Phragmidium rosae-sempervirentis Maire (1916). On *Rosa sempervirentis* (Rieuf, 1970 et 1971). On *Rosa sempervirentis* in Tanger (Maire & Werner, 1937).

Phragmidium rubi (Pers.) G. Winter (1884) & Barclay. N.c: *Phragmidium barclayi* Dietel 1890 and *Phragmidium bulbosum* (Fr.) Schltdl. 1824. Byn.: *Puccinia mucronata* β *rubi* Pers. 1801. On *Rubus ulmifolius* (Guyot & Malençon, 1963; Maire & Werner, 1937; Rieuf, 1970 et 1971).

Phragmidium sanguisorbae (DC.) J. Schröt. (1889). N.c: *Phragmidium sanguisorbae* (DC.) J. Schröt., in Cohn, *Krypt.-Fl. Schlesien* (Breslau) 3.1 (17-24): 352 (1887). Syn.: *Puccinia sanguisorbae* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 54 (1815), *Uredo poterii* Rabenh., *Lecythea potentillarum* sensu auct. brit. p.p.; fide Checklist of Basidiomycota of Great Britain and Ireland (2005), *Aregma acuminatum* sensu auct. brit.; fide Checklist of Basidiomycota of Great Britain and Ireland (2005) and *Phragmidium acuminatum* sensu auct. brit.; fide Checklist of Basidiomycota of Great Britain and Ireland (2005). On *Sanguisorba magnolii* in the forest of Djaaba (Guyot & Malençon, 1957). On *Poterium sanguisorba* and *Sanguisorba minor* ssp. *muricata* (Guyot & Malençon, 1963). On *Sanguisorba magnolii*, *S. mauritanica* and *S. minor* (Rieuf, 1970 and 1971). On *Sanguisorba magnolii*, *S. maroccana*, *S. minor* var. *atlantica*, *S. muricata* and *S. mauritanica* in Tanger, near Fes, Sefrou and Azrou (Maire & Werner, 1937).

-Phragmidium subcorticium (Schrank) G. Winter (1882). N.c: *Phragmidium mucronatum* (Pers.) Schltdl. 1824. Byn.: *Lycoperdon subcorticium* Schrank 1793. On

Rosa agrestis, *R. damascena*, *R. micrantha* and *Rosa* sp (Rieuf, 1971).

-Phragmidium sp. Guyot A. L. & Malençon G. (1957). On *Rosa* sp near Azrou (Guyot & Malençon, 1957).

-Phragmidium tuberculatum Jul. Müll. (1885). N.c: *Phragmidium tuberculatum* J.B. Müll., *Ber. dt. bot. Ges.* 3: 391 (1885). On *Rosa sempervirentis* and *R. sicula* (Rieuf, 1970 et 1970). On *Rosa sicula* in Sidi Ali (Maire & Werner, 1937).

-Phragmidium violaceum (Schultz) G. Winter (1880). N.c: *Phragmidium violaceum* (Schultz) G. Winter, *Hedvigia* 19: 54 (1880). Syn.: *Puccinia violacea* Schultz, *Prodr. Fl. Starg.*: 459 (1806), *Uredo ruborum* sensu auct. brit. p.p. and *Lecythea ruborum* Lév., *Annls Sci. Nat., Bot.*, sér. 3 8: 374 (1847). On *Rubus* sp., *R. plicatus* and *R. ulmifolius* (Unamuno, 1940c). On *Rubus ulmifolius* near Azrou (Guyot & Malençon, 1957). On *Rubus plicatus* and *R. ulmifolius* (Rieuf, 1970 et 1971). On *Rubus ulmifolius* in Tanger, Taza, Fes, Rabat, Ourika and Demnat (Maire & Werner, 1937).

-Puccinia absinthii DC. (1806). N.c: *Puccinia chrysanthemi* Roze 1900. On *Artemisia herba-alba*, between Asni and Ouirgane (Guyot & Malençon, 1963; Rieuf, 1970). On *Artemisia* sp. in Larache (Guyot & Malençon, 1957; Maire & Werner, 1937).

-Puccinia acanthi P. Syd. & Syd. (1904). On *Onopordon acaule* in Tizin-n-Tichka (Maire & Werner, 1937). On *Onopordon acaule* (Rieuf, 1970).

Puccinia acarnae P. Syd. & Syd. (1902). On *Pycnomon acarna* in Mellilia and Taourirt (Maire & Werner, 1937). On *Pycnomon acarna* near Ait Oufellah (Guyot & Malençon, 1963). On *Cirsium acarna* (Rieuf, 1970).

-Puccinia acetosae Schum Korn (1876). N.c: *Puccinia acetosae* Barclay. Byn.: *Uredo acetosae* Schumach. 1803. On *Rumex acetosa* (Maire & Werner, 1937). On *Rumex intermedius* (Unamuno, 1941; Rieuf, 1970). On *Rumex acetosa* and *R. tuberosus* (Rieuf, 1970 et 1971).

Puccinia aegilopis Maire (1914). On *Aegilops ovata*, *A. triaristrata* and *A. triuncialis* (Rieuf, 1970). On *Aegilops ovata* in Fes, El Hajeb and Casablanca (Guyot & Malençon, 1957). On *Aegilops triaristrata* near Meknes and *A. triuncialis* in the region of Azrou (Guyot & Malençon, 1963).

-Puccinia aff. aegilopis Malençon (1953). On *Aegilops ovata* in Fes (Guyot & Malençon, 1957).

-Puccinia algerica Pat. (1905). On *Rubia laevis* near Ifrane (Maire & Werner, 1937; Guyot & Malençon, 1963; Rieuf, 1970).

Puccinia agropyri Ellis & Everh. (1892). N.c: *Puccinia recondita* Dietel & Holw. 1857. On *Agropyrum repens* (Guyot & Malençon, 1957 et 1963; Rieuf, 1971).

-Puccinia aff. Agropyri Guyot & Malençon (1954). On *Agropyrum repens* near Asni (Guyot & Malençon, 1957).

-Puccinia allii Castagne & (DC.) Rud (1829). N.c: *Puccinia allii* (DC.) F. Rudolphi 1829 and *Puccinia allii* (DC.) F. Rudolphi, *Linnaea* 4: 392 (1829). Syn.: *Xyloma allii* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 156 (1815), *Dicaeoma allii* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 467 (1898), *Puccinia allii* Castagne, *Uredo porri* Sowerby, *Col. fig. Engl. Fung. Musbr.* (London) 3: pl. 411 (1810), *Coeomurus porri* (Sowerby) Gray, *Nat. Arr. Brit. Pl.* (London) 1: 541 (1821), *Puccinia porri* (Sowerby) G. Winter, *Rabenh. Krypt.-Fl.*, Edn 2 (Leipzig) 1.1: 200 (1881), *Dicaeoma porri* (Sowerby) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 470 (1898), *Uredo alliorum* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 82 (1815), *Uromyces alliorum* (DC.) Lév., *Anns Sci. Nat., Bot.*, sér. 3 8: 371 (1847), *Uredo ambigua* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 64 (1815), *Caecoma ambiguum* (DC.) Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 8 (1825), *Uromyces ambiguus* (DC.) Lév., *Anns Sci. Nat., Bot.*, sér. 3 8: 371 (1847), *Uromyces ambiguus* (DC.) Lév., *Anns Sci. Nat., Bot.*, sér. 3 8: 371 (1847), *Caecomurus ambiguus* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 449 (1898), *Uredo alliorum* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 82 (1815) var. *alliorum*, *Xyloma allii* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 156 (1815) var. *allii*, *Puccinia mixta* Fuckel, *Jb. nassau. Ver. Naturk.* 23-24: 58 (1870), *Puccinia blasdalei* Dietel & Holw., in Dietel, *Erythraea* 1: 248 (1893) and *Uromyces durus* Dietel, *Anns mycol.* 5(1): 70 (1907). On *Allium* sp (Unamuno, 1940d). On *Allium roseum* in El Jadida (Guyot & Malençon, 1963). On *Allium album*, *A. ampeloprasum*, *A. cepa*, *A. paniculatum*, *A. roseum*, *A. sativum*, *A. sphaerocephalum* and *A. vineale* (Rieuf, 1970). On *Eudarlucia caricis*, *Satureja villosa*, *S. sp.*, *S. vulgaris* and *S. grandiflora* var. *baborensis* (Rieuf, 1971). On *Allium paniculatum* var. *pallens*, *A. paniculatum* var. *typicum*, *A. album* and *ampeloprasum* in Tanger, Azila and Imi-n-Tanout (Maire & Werner, 1937).

-Puccinia alyssi Lindr. (1902); P. Syd. & Syd. (1904). On *Abyssum spinosum* (Maire & Werner, 1937; Rieuf, 1970).

-Puccinia andropogonis-hirti (Maire) Beltrán (1921). N.c: *Puccinia purpurea* Cooke 1876. Byn.: *Uredo andropogonis-hirti* Maire 1905. On *Andropogon hirtus* in Ceuta (El hacho) (Unamuno, 1940b). On *Andropogon hirtus* (Rieuf, 1970). On *Eudarlucia caricis* (Rieuf, 1971). On *Andropogon hirtus* (between Azzila and Larache) and in Rabat (Guyot & Malençon, 1963).

-Puccinia andryalae Maire (1917). On *Andryala arenaria*, *A. ducellieri*, *A. integrifolia*, *A. canariensis*, *A. canariensis* var. *mogadorensis* and *A. pinnatifida* in Ketama, Targuist, Fes, Souk-et-Tleta of Ketama, Mehdiya, Mogador and Ourika (Maire & Werner, 1937; Rieuf, 1970). On *Andryala canariensis* in the coastal dunes in Oualidia (Guyot & Malençon, 1957).

-Puccinia annularis (F. Strauss) G. Winter (1881). N.c: *Puccinia annularis* (F. Strauss) G. Winter, *Rabenh. Krypt.-Fl.*, Edn 2 (Leipzig) 1.1: 165 (1881). Syn.: *Uredo annularis* F. Strauss, *Ann. Wetter. Gesellsch. Ges. Naturk.* 2: 106 (1810), *Dicaeoma annulare* (F. Strauss) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 467 (1898), *MicroPuccinia annularis* (F. Strauss) Arthur & H.S. Jaks., *Bull. Torrey bot. Club* 48: 40 (1921) and *Leptopuccinia annularis* (F. Strauss) Syd., *Anns mycol.* 20(3/4): 120 (1922). On *Teucrium bracteatum*, *T. rupestre* and *T. tananicum* (Rieuf, 1970 et 1971). On *Teucrium bracteatum*, *T. rupestre* and *T. tananicum* in Beni Hosmar, Haha, Imi-n-Tanout and Ida-ou-Tanan (Maire & Werner, 1937).

-Puccinia anomala Rostr. (1877). N.c: *Puccinia bordei* G.H. Oth 1871. On *Hordeum bulbosum*, *H. hexastichum* and *H. vulgare* (Rieuf, 1970).

Puccinia antirrhini Dietel & Holw. (1897). N.c: *Puccinia antirrhini* Dietel & Holw., in Dietel, *Hedwigia* 36: 298 (1897). Syn.: *Dicaeoma antirrhini* (Dietel & Holw.) H.S. Jaks., (1916). On *Antirrhinum majus* in Chaouen (Rif) (Guyot & Malençon, 1963). On *Antirrhinum majus* in Ceuta (Unamuno, 1940d; Rieuf, 1970).

-Puccinia arabidis-conringioides Maire (1937). On *Arabis conringioides* (Maire & Werner, 1937; Rieuf, 1970).

-Puccinia arenariae (Schumach.) J. Schrot. (1880). N.c: *Puccinia arenariae* (Schumach.) J. Schröt., *Hedwigia* 19: 38 (1880). Syn.: *Puccinia hychnidearum* var. *arenariae* (Schumach.) G. Winter, *Uredo arenariae* Schumach., *Enum. pl.* (Kjbenhavn) 2: 232 (1803),



- Caeoma arenariae* (Schumach.) Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 27 (1825), *Dicaeoma arenariae* (Schumach.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 467 (1898), *Micropuccinia arenariae* (Schumach.) Arthur & H.S. Jacks., *Bull. Torrey bot. Club* 48: 40 (1921), *Leptopuccinia arenariae* (Schumach.) Syd., *Annls mycol.* 20(3/4): 120 (1922), *Puccinia verrucosa* Link, *Puccinia hychnidearum* Fuckel, 2: 29, *Trichobasis hychnidearum* sensu Cooke [Microscopic Fungi p. 224 (1865)]; fide Checklist of Basidiomycota of Great Britain and Ireland (2005), *Uredo caryophyllacearum* sensu auct.; fide Checklist of Basidiomycota of Great Britain and Ireland (2005), *Puccinia spargulae* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 219 (1805), *Dicaeoma spargulae* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 470 (1898), *Puccinia hychnidearum* var. *dianthi* (DC.) G. Winter, *Puccinia dianthi* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 220 (1805), *Puccinia spargulae* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 219 (1805) var. *spargulae*, *Puccinia stellariae* Duby, *Bot. Gall.*, Edn 2 (Paris) 2: 887 (1830), *Puccinia herniariae* Unger, *Einfluss des Bodenstc.*: 218 (1836), *Dicaeoma herniariae* (Unger) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 469 (1898), *Puccinia moebringiae* Fuckel, *Jb. nassau. Ver. Naturk.* 23-24: 51 (1870), *Puccinia saginae* Fuckel, *Jb. nassau. Ver. Naturk.* 23-24: 51 (1870) and *Puccinia circinans* Dietel, *Am. J. Bot.* 5: 471 (1918). On *Cerastium gibraltarium*, *Gypsophila paniculata*, *Loeflingia hispanica*, *L. micrantha*, *Moebingia trinervia*, *Silene corolata* and *Silene* sp (Rieuf, 1970). On *Cerastium gibraltarium* near Ifrane (Guyot & Malençon, 1957). On *Lolium multiflorum*, *L. perenne*, *Phalaris hycioides* ssp. *oleoides* and *Vulpia alopecurus* (Rieuf, 1971). On *Loeflingia hispanica*, *L. micrantha*, *Cerastium gibraltarium*, *Gypsophila paniculata*, *Dianthus* sp., *Silene* sp., *Silene corolata* in Rabat, Temara, Casablanca and Ourika (Maire & Werner, 1937).
- Puccinia aristolochiae*** (DC.) G. Winter (1884) & Henn. (1884). N.c: *Puccinia aristolochiae* (DC.) G. Winter, *Pilze*: 210 (1884). Syn.: *Uredo aristolochiae* DC., (1815) and *Dicaeoma aristolochiae* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 467 (1898). On *Aristolochiae longa* (Maire & Werner, 1937, Unamuno, 1941 et 1942; Rieuf, 1970).
- Puccinia arrhenatheri*** (Kleb.) Erikss. (1898). N.c: *Puccinia brachypodii* var. *arrhenatheri* (Kleb.) Cummins & H.C. Greene 1966. Byn.: *Puccinia perplexans* f. *arrhenatheri* Kleb. 1892. On *Berberis hispanica* (Guyot & Malençon, 1963). On *Arrhenatherum elatius* and *Berberis hispanica* (Maire & Werner, 1937; Rieuf, 1970).
- Puccinia arrhenathericola*** E. Fisch. (1920). On *Arrhenatherum elatius* near Ifrane (Guyot & Malençon, 1957). On *Arrhenatherum erianthum* ssp. *erianthum* near Djbel Hebri (Guyot & Malençon, 1963). On *Arrhenatherum elatius* and *Arrhenatherum erianthum* (Rieuf, 1970).
- Puccinia asparagi*** DC. (1805). N.c: *Puccinia asparagi* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 595 (1805). Syn.: *Puccinia discoidearum* var. *asparagi* (DC.) Wallr., (1833), *Dicaeoma asparagi* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 1-576 (1898), *Persooniella asparagi* (DC.) Syd., *Annls mycol.* 20(3/4): 118 (1922), *Uredo asparagi* Lasch, (1848) and *Aecidium asparagi* Lasch, (1848). On *Asparagus officinalis* (Rieuf, 1970) and *Eudarluca caricis* (Rieuf, 1971).
- Puccinia asperulae*** Fuckel. On *Asperula hirsuta* (Rieuf, 1970).
- Puccinia asperulae-cynanchicae*** Wurth (1904). N.c: *Puccinia asperulae-cynanchicae* Wurth, *Zentbl. Bak. ParasitKde*, Abt. II 12: 714 (1904). Syn.: *Persooniella asperulae-cynanchicae* (Wurth) Syd., *Annls mycol.* 20(3/4): 118 (1922). On *Asperulae-cynanchicae* and *A. hirsuta*, near Ifrane (Guyot & Malençon, 1957).
- Puccinia asphodeli*** Moug. (1830). N.c: *Puccinia asphodeli* Moug., in Duby, *Bot. Gall.* (Paris) 2: 891 (1830). On *Asphodelus cerasiferus* in the forest of Ksiba and the forest of Bab Ahzar (Guyot & Malençon, 1957). On *Asphodelus microcarpus* in the region of Azzila and *Asphodelus* sp near Larache (Guyot & Malençon, 1963). On *Asphodelus aestivus*, *A. cerasiferus*, *A. microcarpus* and *A. nervosus* (Maire & Werner, 1937; Rieuf, 1970).
- Puccinia atlantica*** Maire (1915). On *Hypochoeris laevigata* (Maire & Werner, 1937; Rieuf, 1970; Ramadani, 1996).
- Puccinia atractylidis*** P. Syd. & Syd. (1904). On *Atractylis gummifera* (Maire & Werner, 1937; Rieuf, 1970).
- Puccinia atropae*** Mont. (1856). On *Withania frutescens* (Guyot & Malençon, 1957). On *Withania frutescens* in Oued Mellah (Guyot & Malençon, 1963). On *Withania frutescens* and *W. somnifera* (Maire & Werner, 1937; Rieuf, 1970 et 1970).
- Puccinia azrouana*** Guyot & Malençon (1963). On *Anthoxanthum odoratum* in the region of Ifrane (Guyot & Malençon, 1963). On *Anthoxanthum odoratum* (Rieuf, 1970).



-*Puccinia barbeyi* (Roum.) Magnus (1883). On *Asphodelus tenuifolius* and *A. fistulosus* in Mellilia (Maire & Werner, 1937; Rieuf, 1970). On *Asphodelus fistulosus*, *A. fistulosus* and *A. tenuifolius* (Guyot & Malençon, 1963).

-*Puccinia baryi* (Berk. & Broome) G. Winter (1884). N.c: *Puccinia brachypodii* var. *brachypodii* G.H. Oth 1861. Byn.: *Epitea baryi* Berk. & Broome 1854. On *Brachypodium distachyum* in the region of Ceuta (Rieuf, 1970; Unamuno, 1940d).

-*Puccinia behenis* J. Schröt.; G.H. Oth (1871). N.c: *Puccinia bebenis* G.H. Oth, *Mitt. naturf. Ges. Berr.* 113 (1871). Syn.: *Puccinia silenes* J. Schröt., *Rabenb. Krypt.-Fl.*, Edn 2 (Leipzig) 1(1): 215 (1882). On *Silene cucubalus* (Guyot & Malençon, 1957; Rieuf, 1970 et 1970).

-*Puccinia beltranii* Gonz. Frag. On *Centaurea triumphetti* var. *seuseana* (Maire & Werner, 1937; Rieuf, 1970).

-*Puccinia beltranii* f. *dipora* Maire (1937). On *Centaurea triumphetti* var. *seuseana* (Rieuf, 1970).

Puccinia biformis Lagerh. (1890). On *Rumex* sp. in the slopes of Djbel Heddi (Guyot & Malençon, 1963). On *Rumex bucephalophorus* (Maire & Werner, 1937; Rieuf, 1970 et 1971).

-*Puccinia blasdalei* Dietel & Holw. (1893). N.c: *Puccinia allii* (DC.) F. Rudolphi 1829. On *Allium album*, *A. ampeloprasum*, *A. cepa*, *A. paniculatum*, *A. roseum*, *A. sativum*, *A. sphaerocephalum* and *A. vineale* (Rieuf, 1970).

-*Puccinia brachypodii* G.H. Oth (1861). On *Brachypodium distachyum* (Rieuf, 1970).

-*Puccinia brachypodii-phoenicoidis* Guyot & Malençon (1963). On *Brachypodium phoenicoides* near Immouzzet Kander (Guyot & Malençon, 1963). On *Brachypodium phoenicoides* (Rieuf, 1970).

-*Puccinia brachypus* var. *loliiphila* Speg. (1925). On *Allium chamemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setigulumis*, *Koeleria phleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970).

-*Puccinia bromi-maximi* Guyot (1941). On *Bromus rigidus* ssp. *maximus* in Tahnaout (Guyot & Malençon, 1963). On *B. macrostachys* and *B. rigidus* ssp. *maximus* (Rieuf, 1970).

-*Puccinia bromina* Erikss. (1899). N.c: *Puccinia recondita* Dietel & Holw. 1857. On *Bromus* sp in Michliffen (Guyot & Malençon, 1963). On *Bromus* sp (Rieuf, 1970).

-*Puccinia bulbocastani* (Cumino) Fuckel (1870). N.c: *Puccinia bulbocastani* (Cumino) Fuckel, *Jb. nassau. Ver. Naturk.* 23-24: 52 (1870). Syn.: *Aecidium bulbocastani* Cumino, *Mém. Acad. imp. Sci.*, Turin (1805) and *Puccinia bunii* G. Winter, *Rabenb. Krypt.-Fl.*, Edn 2 (Leipzig) 1.1: 197 (1881). On *Bunium alpinum* ssp. *atlanticum* in Timhadit (Guyot & Malençon, 1957). On *Bunium alpinum* ssp. *atlanticum*, *B. incrassatum* and *B. mauritanicum* (Rieuf, 1970).

- *Puccinia bunii* G. Winter (1882). N.c: *Puccinia bulbocastani* (Cumino) Fuckel 1870. On *Bunium alpinum* ssp. *atlanticum*, *B. mauritanicum* and *B. incrassatum* (Rieuf, 1970). On *Bunium alpinum*, *B. mauritanicum* var. *perotii* and *B. incrassatum* in the forest of Mamora, Igermalez, near Fes and Azrou (El Assfour et al., 2003; Maire & Werner, 1937).

Puccinia bupleuri (Opiz) F. Rudolphi (1829). N.c: *Puccinia bupleuri* (Opiz) F. Rudolphi, *Linnaea* 4: 514 (1829). Syn.: *Aecidium bupleuri* Opiz, *Seznam Rostlin Kveteny Ceské.* 111 (1852), *Dicaeoma bupleuri* (Opiz) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 468 (1898), *Aecidium falcariae* f. *bupleuri-falcata* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 91 (1815) and *Puccinia bupleuri-falcata* (DC.) G. Winter, *Rabenb. Krypt.-Fl.*, Edn 2 (Leipzig) 1.1: 212 (1881). On *Bupleurum lancifolium*, *B. lancifolium* var. *intermedium* and *Bupleurum atlanticum* near Meknes (Guyot & Malençon, 1957). On *Bupleurum atlanticum*, *B. canescens*, *B. lantifolium* var. *intermedium* and *B. montanum* (Rieuf, 1970). On *Bupleurum atlanticum*, *B. canescens* and *B. montanum* (Maire & Werner, 1937).

-*Puccinia buxi* DC. (1815). N.c: *Puccinia buxi* Sowerby, *Col. fig. Engl. Fung. Musbr.* 3: 206, pl. 439 (1809). Syn.: *Dicaeoma buxi* (Sowerby) Gray, *Nat. Arr. Brit. Pl.* (London) 1: 543 (1821), *Puccinia buxi* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 60 (1815), *Dasyospora buxi* Arthur, *Résult. Sci. Congr. Bot. Wien 1905*: 346 (1906), *Micropuccinia buxi* (Arthur) Arthur & H.S. Jacks., *Bull. Torrey bot. Club* 48: 40 (1921) and *Trailia buxi* (Arthur) Syd., *Annls mycol.* 20(3/4): 121 (1922). On *Buxus sempervirens* (Rieuf, 1970).

-*Puccinia calaminthae* Fuckel (1870). On *Mentha longifolia*, *M. piperita*, *M. rotundifolia*, *M. sativa*, *Satureja atlantica*, *S. calmintha* ssp. *ascendens*, *S. calmintha* var. *calminthoide*, *S. grandiflora* var. *baborensis*, *S. rotundifolia*, *Satureja* sp., *S. vulgaris* and *S. vulgaris* ssp. *villosa* (Rieuf, 1970).

-*Puccinia calcitrapae* DC. (1805). N.c: *Puccinia calcitrapae* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 221 (1805). Syn.: *Puccinia*



compositarum Schltdl., *Fl. berol.* (Berlin) 2: 133 (1824), *Puccinia syngenesiarum* Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 74 (1825), *Puccinia inquinans* var. *bardanae* Wallr., *Fl. crypt. Germ.* (Nürnberg) 2: 219 (1833), *Puccinia bardanae* (Wallr.) Corda, *Icon. fung.* (Prague) 4: 17 (1840), *Puccinia calcitrapae* var. *bardanae* (Wallr.) Cummins, *Mycotaxon* 5(2): 402 (1977), *Puccinia cirsii* Lasch, in Rabenhorst, *Fungi europ. exsicc.* 4: no. 89 (1859), *Dicaeoma cirsii* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 466 (1898), *Puccinia carlinae* Jacky, *Composit. Puccin.* 9: 59 (1899), *Puccinia carduorum* Jacky, *Composit. Puccin.* 9: 58 (1899), *Puccinia cardui-pycnocephali* P. Syd. & Syd., *Monogr. Uredin.* (Lipsiae) 1(1): 34 (1902), *Puccinia calcitrapae* var. *cardui-pycnocephali* (P. Syd. & Syd.) U. Braun, *Feddes Repert. Spec. Nov. Regni Veg.* 92(1-2): 119 (1981), *Puccinia centaureae* f. *scabiosae* Hazsl., *Zentbl. Bak. ParasitKde*, Abt. II: 511 (1908) and *Puccinia scabiosae* (Hazsl.) A.L. Guyot, *Uredineana* 3: 67 (1951). On *Centaurea calcitrapa* near Asni (Guyot & Malençon, 1957). On *Centaurea calcitrapa* (Rieuf, 1970).

-*Puccinia canariensis* P. Syd. & Syd. (1902). N.c: *Puccinia canariensis* P. Syd. & Syd., *Monogr. Uredin.* (Lipsiae) 1(1): 166 (1902). On *Thrinicia tuberosa* in Dardara (Unamuno, 1942a). On *Leontodon saxatilis* between El Jadida and Boulaouane (Guyot & Malençon, 1963). On *Leontodon maroccanus* and *L. saxatilis* (Maire & Werner, 1937).

-*Puccinia cancellata* (Durieu & Mont.) Sacc. & Roum. (1881). N.c: *Puccinia cancellata* (Durieu & Mont.) Sacc. & Roum., *Revue mycol.*, Toulouse 3: 26 (1881). Syn.: *Uredo cancellata* Durieu & Mont., in Durieu, *Fl. d'Algérie*, Cryptog. 1: 314 (1846) and *Dicaeoma cancellatum* (Roum. & Sacc.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 468 (1898). On *Juncus acutus* between Rabat and Casablanca (Guyot & Malençon, 1963; Rieuf, 1970).

Puccinia cardui-pycnocephali P. Syd. & Syd. (1904). N.c: *Puccinia calcitrapae* DC., in Lamarck & de Candolle 1805. On *Carduus pycnocephalus* and *C. tenuiflorus* (Maire & Werner, 1937). On *Carduus pycnocephalus*, *C. tenuiflorus*, *C. ballii*, *C. myriacanthus*, *C. pycnocephalus* ssp. *eu-pycnocephalus* and *C. spachianus* var. *duriaei* (Rieuf, 1970). On *Carduus pycnocephalus* sp. *eu-pycnocephalus*, *C. spachianus* var. *duriaei*, *C. ballii* and *C. myriacanthus* (Guyot & Malençon, 1957). On *Carduus pycnocephalus* and *C. pycnocephalus* ssp. *tenuiflorus* (Guyot & Malençon, 1963).

-*Puccinia carduncelli* Syd. (1902). On *Carthamus calvus*, *C. careruleus*, *C. carlinoides*, *C. pomelianus* and *C.*

pomelianus var. *gracilis* in Targuist (Maire & Werner, 1937; Rieuf, 1970).

-*Puccinia carduorum* Jacky (1899). N.c: *Puccinia calcitrapae* DC., in Lamarck & de Candolle 1805. On *Carduus ballii*, *C. chevallieri*, *C. leptocladus*, *C. macrocephalus*, *C. meonanthus*, *C. myriacanthus* and *C. spachianus* (Rieuf, 1970). On *Carduus ballii*, *C. chevallieri*, *C. macrocephalus*, *C. myriacanthus* and *C. spachianus* (Maire & Werner, 1937).

-*Puccinia caricis* (Schumach.) Rebent. (1873). N.c: *Puccinia caricina* var. *caricina* DC., in de Candolle & Lamarck 1815. Byn.: *Uredo caricis* Schumach. 1803. On *Carex divisa* (Unamuno, 1941 and Rieuf, 1971).

Puccinia carthami Corda (1840). N.c: *Puccinia carthami* Corda, *Icon. fung.* (Prague) 4: 15 (1840). Syn.: *Bullaria carthami* (Corda) Arthur & Mains, *N. Amer. Fl.* (New York) 7(7): 512 (1922), *Puccinia centaureae* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 59 (1815) and *Puccinia calcitrapae* var. *centaureae* (DC.) Cummins, *Mycotaxon* 5(2): 402 (1977). On *Carthamus calvus* near Asni and *C. tinctorius* in Dar Ziatten (Tanger) (Guyot & Malençon, 1963). On *Carthamus calvus* and *C. tinctorius* (Rieuf, 1970).

-*Puccinia castellana* Gonz. Frag. (1916). On *Pimpinella villosa* (Maire & Werner, 1937; Rieuf, 1970 et 1970).

Puccinia centaureae DC.V (1815). N.c: *Puccinia carthami* Corda 1840. Syn.: *Bullaria carthami* (Corda) Arthur & Mains, *N. Amer. Fl.* (New York) 7(7): 512 (1922), *Puccinia calcitrapae* var. *centaureae* (DC.) Cummins, *Mycotaxon* 5(2): 402 (1977) and *Puccinia centaureae* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 59 (1815). On *Centaurea melitensis* (Unamuno, 1940d). On *Centaurea veseritensis* (Unamuno, 1941) in Ben karrich (Beni Hosmar). On *Centaurea* sp. (Unamuno, 1942a). On *Centaurea* sp., *C. ali-beyana*, *C. benoistii*, *C. calcitrapa*, *C. diluta*, *C. eriophora*, *C. fragilis*, *C. gentilii*, *C. involucrata*, *C. litardierei*, *C. maroccana*, *C. melitensis*, *C. musimomum*, *C. nana*, *C. napifolia*, *C. sphaerocephala* and *C. sulphurea* (Rieuf, 1970). On *Centaurea* sp., *C. ali-beyana*, *C. benoistii*, *C. calcitrapa*, *C. diluta*, *C. eriophora*, *C. fragilis*, *C. gentilii*, *C. involucrata*, *C. litardierei*, *C. maroccana*, *C. melitensis*, *C. musimomum*, *C. nana*, *C. napifolia*, *C. sphaerocephala* and *C. sulphurea* in Kettama, Bab Taza and Mellilia (Maire & Werner, 1937). On *Centaurea maroccana* near Safi and *C. napifolia* in the region of Meknes (Guyot & Malençon, 1957).

-*Puccinia centaureae* var. *australis* Trotter. On *Centaurea maroccana*, *C. melitensis* and *C. sulphurea*



(Rieuf, 1970). On *Centaurea calcitrapa*, *Centaurea napifolia*, *Centaurea cf. seridis* and *Centaurea sphaerocephala* var. *oligocentra* (Guyot & Malençon, 1963).

-*Puccinia centaureae-pullatae* Gonz. Frag. On *Centaurea pullatae* (Maire & Werner, 1937; Rieuf, 1970).

Puccinia chamaepeuces Maire (1937). On living leaves of *Cirsium casabonae* (Maire & Werner, 1937; Rieuf, 1970).

-*Puccinia chrysanthemi* Rose (1900). N.c: *Puccinia chrysanthemi* Roze, *Bull. Soc. mycol. Fr.* 16: 92 (1900). Syn.: *Puccinia absinthii* DC., *Encycl. Méth. Bot.* 8: 245 (1806), *Caecoma absinthii* (DC.) Corda, *Icon. fung.* (Prague) 6: 1, tab. 1:2 (1854), *Puccinia chrysanthemi-sinensis* Henn., 40: 26 (1901) and *Puccinia tanacetii* P. Syd. & Syd., *Monogr. Uredin.* (Lipsiae) 1(1): 11 (1902). On *Chrysanthemum indicum* in Port Lyautey (Maire & Werner, 1937). On *Chrysanthemum chinense* in Ceuta (Unamuno, 1940a). On *Chrysanthemum indicum*, *C. morifolium* and *Chrysanthemum* sp (Rieuf, 1970).

Puccinia cichorii (DC.) Bell. N.c: *Puccinia hieracii* var. *hieracii* (Röhl.) H. Mart. 1817. Byn.: *Uredo cichorii* DC., in de Candolle & Lamarck 1815. On *Cichorium intybus* (Unamuno, 1940d). On *Cichorium endivia* (Rieuf, 1970). On *Cichorium divaricatum* in Mechraa Benabbou (Guyot & Malençon, 1957). On *Cichorium divaricatum* near El Hoceima, *C. intybus* ssp. *eu-intybus* in Serrat and *Agrostis alba* var. *stolonifera* in Rabat (Guyot & Malençon, 1963). On *Cichorium divaricatum* and *Cichorium endivia* (Maire & Werner, 1937).

-*Puccinia cirsii* Lasch (1859) & DC. (1859). N.c: *Puccinia calcitrapae* DC., in Lamarck & de Candolle 1805. On *Cirsium syriacum* (Rieuf, 1970).

-*Puccinia clinopodii* DC. (1815). N.c: *Puccinia menthae* Pers. 1801. On *Mentha longifolia*, *M. piperita*, *M. rotundifolia*, *M. sativa*, *Satureja atlantica*, *S. calmintha* ssp. *ascendens*, *S. calmintha* var. *calminthoide*, *S. grandiflora* var. *baborensis*, *S. rotundifolia*, *Satureja* sp., *S. vulgaris* and *S. vulgaris* ssp. *villosa* (Rieuf, 1970).

-*Puccinia conclusa* Thüm. (1878). N.c: *Puccinia conclusa* Thüm., *J. Sci. math. phys. nat. Lisboa*, 1 Ser. 6(no. 24): 237 (1878). Syn.: *Dicaeoma conclusum* (Thüm.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 468 (1898). On *Cyperus longus* in Port-Lyautey and Oued Fouarat (Maire & Werner, 1937).

-*Puccinia conii* (F. Strauss) Fuckel (1870) & Lagerh. (1895). N.c: *Puccinia conii* (F. Strauss) Fuckel, *Jb. nassau. Ver. Naturk.* 23-24: 33 (1870). Syn.: *Uredo conii* F. Strauss, *Ann. Wetter. Gesellsch. Ges. Naturk.* 2:

96 (1810), *Puccinia bullaria* sensu auct.; fide Checklist of Basidiomycota of Great Britain and Ireland (2005), *Trichobasis conii* Cooke, *Microscopic fungi*: 225 (1865) and *Puccinia conii* Lagerh., 17: 54 (1895). On *Conium maculatum* (Maire & Werner, 1937; Unamuno, 1940d).

-*Puccinia convolvuli* Pers (1842). On *Convolvulus sepium* (Rieuf, 1970; Unamuno, 1940b).

-*Puccinia coronata* Corda (1837). N.c: *Puccinia coronata* Corda, *Icon. fung.* (Prague) 1: 6 (1837). Syn.: *Solenodonta coronata* (Corda) Syd., *Annls mycol.* 19(1/2): 174 (1921), *Puccinia coronata* var. *arrhenatheri* Kleb., *Puccinia coronata* var. *festucae* Erikss., *Puccinia coronata* var. *holci* Kleb., *Puccinia rhamni* (J.F. Gmel.) Wettst., *Aecidium rhamni* J.F. Gmel., *Syst. Nat.* 2(2): 1472 (1792), *Dicaeoma rhamni* (J.F. Gmel.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 467 (1898), *Aecidium crassum* Pers., *Syn. meth. fung.* (Göttingen) 1: 208 (1801), *Caecoma crassatum* Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 60 (1825), *Puccinia coronata* var. *lolii* Beeynck, (1853), *Puccinia lolii* E. Nielsen, 9(1): 549 (1875), *Puccinia calamagrostidis* P. Syd., *Ured. Exsic.* 13-15: no. 662 (1892), *Puccinia coronata* f. *agrostidis* Erikss., *Bull. Inst. bot. Univ. Belgrade* 12: 321 (1894), *Puccinia coronata* f.sp. *alopecuri* P. Syd. & Syd., *Monogr. Uredin.* (Lipsiae) 1(4): 705 (1903), *Puccinia coronata* f.sp. *avenae* P. Syd. & Syd., *Monogr. Uredin.* (Lipsiae) 1(4): 705 (1903), *Puccinia coronata* f.sp. *festucae* P. Syd. & Syd., *Monogr. Uredin.* (Lipsiae) 1(4): 705 (1903), *Puccinia coronata* f.sp. *holci* P. Syd. & Syd., *Monogr. Uredin.* (Lipsiae) 1(4): 705 (1903), *Puccinia coronata* f.sp. *lolii* P. Syd. & Syd., *Monogr. Uredin.* (Lipsiae) 1(4): 705 (1903) and *Puccinia coronata* var. *calamagrostis* W.P. Fraser & Ledingham, *Sci. Agric.* 13: 316 (1933). On *Avena sterilis* and *Rhamnus oleoides* (Maire & Werner, 1937). On *Agrostis stolonifera* in the region of Rabat, on *Arrhenatherum alatum* near Ifrane, on *Avena alba* in forest of Djaaba (between El Hajeb and Ifrane), on *Avena longiglumis* and *A. sterilis* in the region of Meknes and Sidi Smaine near Mazagan, on *Lamarckia aurea* in the forest of Mamora near Rabat and on *Lolium* sp (Guyot & Malençon, 1957). On *Agrostis alba* var. *stolonifera*, *Agrostis stolonifera*, *Avena sterilis*, *Avena sterilis* ssp. *macrocarpa*, on the dry leaves of *Bromus* sp., *Festuca arundinacea*, *Festuca triflora* and *Phalaris bulbosa* (Guyot & Malençon, 1963). On *Agrostis stolonifera*, *Arrhenatherum elatius*, *Avena alba*, *A. longiglumis*, *A. sterilis*, *Avena* sp., *Bromus* sp., *Catabrosa aquatica*, *Festuca arundinacea*, *F. ciliata*, *F. mairei*, *F. triflora*, *Glyceria distans*, *Lamarckia aurea*, *Lolium multiflorum*, *L. perene*, *Phalaris tuberosa*, *Rhamnus*



lycioides ssp. *oleoides* and *Vulpia alopecuros* (Rieuf, 1970). On *Avena fatua* in Oued El Makhazine near Ksar El Kebir and Jorf El Melha near Sidi Kacem (Khouader et al., 2011a).

-*Puccinia coronata* var. *avenae* W.P. Fraser & Ledingham (1933). N.c: *Puccinia coronata* var. *avenae* W.P. Fraser & Ledingham, *Sci. Agric.* 13: 315 (1933). Syn.: *Puccinia coronifera* Kleb., *Z. PflKrankh. PflPath. PflSchutz* 4: 135 (1894) and *Dicaeoma coroniferum* (Kleb.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 468 (1898). On *Lolium multiflorum* and *L. perenne* (Rieuf, 1971). On *Avena* sp (Unamuno, 1941; Saadaoui et al., 1993; Saidi, 1999).

-*Puccinia coronefera* Kleb. (1894). N.c: *Puccinia coronata* var. *avenae* W.P. Fraser & Ledingham 1933. On *Avena sterilis*, *Festuca ciliata*, *Glyceria distans* (Ceuta) (Unamuno, 1941). On *Catabrosa aquatica* (Unamuno, 1942a). On *Agrostis stolonifera*, *Arrhenatherum elatius*, *Avena alba*, *A. longiglumis*, *A. sativa*, *A. sterilis*, *Bromus* sp, *Catabrosa aquatica*, *Festuca arundinacea*, *F. ciliata*, *F. mairei*, *F. triflora*, *Glyceria distans*, *Lamarckia aurea*, *Lolium multiflorum*, *L. perene*, *Phalaris tuberosa*, *Rhombus lycioides* ssp. *Oleoides* and *Vulpia alopecuros* (Rieuf, 1970).

-*Puccinia corrigiolae* Chevall. (1826). On *Corrigiola telephiifolia* and *C. litoralis* (Maire & Werner, 1937). On *Corrigiola telephiifolia* in Ras-Ramel (Larache) (Rieuf, 1970; Unamuno, 1940a).

-*Puccinia crepidicola* Syd. & P. Syd. (1901). N.c: *Puccinia crepidicola* Syd. & P. Syd., *Öst. bot. Z.* 51: 17 (1901). Syn.: *Puccinia crepidis* sensu Grove [Brit. Rust Fung. p. 156 (1913)]; fide Checklist of Basidiomycota of Great Britain and Ireland (2005). On *Crepis taraxacifolia* in Bab Taza (Maire & Werner, 1937). On *Crepis virens* in Ceuta (Unamuno, 1940b). On *Vesicaria* ssp. *taraxacifolia* between Ifrane and Immouzer Kandar (Guyot & Malençon, 1957). On *Crepis vesicaria* ssp. *taraxacifolia* between Ifrane and Azrou (Guyot & Malençon, 1963). On *Crepis vesicaria* ssp. *taraxacifolia*, *C. virens* and *C. vesicaria* ssp. *taraxacifolia* (Rieuf, 1970). On *Endarluca caricis* (Rieuf, 1971).

-*Puccinia crepidis-hookeianae* Maire (1937). On *Crepis hookeriana* (Maire & Werner, 1937; Rieuf, 1970).

Puccinia cressae Lagerh. (1889). On *Cressa cretica* in Port-Lyautey (Maire & Werner, 1937; Rieuf, 1970).

-*Puccinia crucianellae* Lagerh. Desm. (1847). On *Crucianella angustifolia* in Targuist (Maire & Werner, 1937; Rieuf, 1970).

-*Puccinia cynodontis* Lacroix ex Desm. (1859). N.c: *Puccinia cynodontis* Lacroix ex Desm., *Pl. Crypt. Nord France*, 3 Edn: no. 655 (1859). Syn.: *Aecidium plantaginis* Ces., *Erb. critt. Ital.*, Ser. 1, fasc. 2: no. 247 (1859). On *Cynodon dactylon* in Nador (Unamuno, 1940a; Guyot & Malençon, 1963; Rieuf, 1970).

Puccinia dasypyri Guyot & Malençon (1963). On *Haynaldia hordeacea* in Michliffen, station biological of Ifrane, Dayet Aoua between Ifrane and Immouzer (Guyot & Malençon, 1963). On *Haynaldia hordeacea* (Rieuf, 1970).

-*Puccinia dictyoderma* Lindr. (1901). On *Smyrniium perfoliatum* (Maire & Werner, 1937; Rieuf, 1970).

-*Puccinia diotidis* Pat. & Roum. (1886). On *Diotis maritima* in Mellilia (Maire & Werner, 1937). On *Diotis candidissima* (Guyot & Malençon, 1957; Rieuf, 1970).

-*Puccinia discoidearum* Link (1825). N.c: *Puccinia tanacetii* DC., in Lamarck & de Candolle 1805. On *Asparagus officinalis* (Rieuf, 1970).

-*Puccinia dispersa* Erikss. & Henning (1894). N.c: *Puccinia recondita* Dietel & Holw. 1857. On *Polypogon monspeliensis* in Ceuta (Unamuno, 1941). On *Festuca vulpia* in Chaouen (Maire & Werner, 1937). On *Polypogon monspeliensis* and *Secale cereale* (Rieuf, 1970). On *Triticum durum* (Anonyme, 1976).

-*Puccinia dispersa* f. *sp. tritici* Erikss. & Henning (1894). N.c: *Puccinia recondita* Dietel & Holw. 1857. On *Triticum sativum* (Rieuf, 1970).

-*Puccinia dyris* Maire (1931). On *Hutchinsia divaricatum* in Ourika (Maire & Werner, 1937). On *Hornungia petraea* (Rieuf, 1970).

-*Puccinia echinopsis* DC. (1815). On *Echinops spinosus* (Rieuf, 1970).

-*Puccinia endiviae* Pass. (1873). N.c: *Puccinia hieracii* var. *hieracii* (Röhl.) H. Mart. 1817. On *Cichorium divaricatum* in Mellilia (Maire & Werner, 1937). On *Cichorium endivia* (Rieuf, 1970).

-*Puccinia epilobii-tetragoni* G. Winter (1884). N.c: *Puccinia pulverulenta* Grev. 1824. On *Epilobium hirsutum* (Maire & Werner, 1937; Rieuf, 1970).

-*Puccinia eryngii* G. Winter; DC. (1808). On *Eryngium campestre* (Unamuno, 1940a; Guyot & Malençon, 1957 et 1963). On *Eryngium tricuspdatum* (Unamuno, 1940d). On *Eryngium tricuspdatum* and *Eryngium campestre* (Maire & Werner, 1937; Rieuf, 1970).

-*Puccinia ferulae* F. Rudolphi (1829). On *Ferula communis* var. *linkii* (Rieuf, 1970).

-Puccinia fontii Fragoso. On *Helminthia echioides* in Zerhoun (Maire & Werner, 1937). On *Helminthia aculeata* and *H. echioides* (Rieuf, 1970).

-Puccinia fragosoi Bubak (1916). N.c: *Puccinia bordei* G.H. Otth 1871. On *Koeleria villosa* in Ketama (Maire & Werner, 1937). On *Koeleria phleoides* in Ouirgane near Asni (Guyot & Malençon, 1963). On *Allium chamemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setiglumis*, *Koeleria phleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970). On *Koeleria villosa* in Ketama (Lyamani, 1989).

Puccinia frankeniae Link (1816). On *Frankenia pulverulenta* ssp. *eu-pulverulenta* in Ouirgane (Guyot & Malençon, 1963). On *Frankenia pulverulenta* and *F. pulverulenta* (Maire & Werner, 1937; Rieuf, 1970).

-Puccinia galactitis P. Syd. & Syd. (1902). On *Galactites tomentosa* (Maire & Werner, 1937; Unamuno, 1940a; Rieuf, 1970).

-Puccinia galatica Syd. (1904). On *Carduus pycnocephalus*, *C. tenuiflorus*, *C. ballii*, *C. myriacanthus*, *C. pycnocephalus* ssp. *eu-pycnocephalus* and *C. spachianus* var. *duriacii* (Rieuf, 1970).

-Puccinia gaudiniana Guyot (1947). On *Gaudiana fragilis* in Arbaoua and Asni (Guyot & Malençon, 1963). On *Allium chamemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setiglumis*, *Koeleria phleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970).

-Puccinia garhadioli Petr. (1947). On *Rhagadiolus stellatus* var. *intermedius* (Rieuf, 1970).

Puccinia gladioli Cast. (1842). N.c: *Puccinia gladioli* Castagne, *Observ. Uréd.* 2: 17 (1843). Syn.: *Dicaeoma gladioli* (Castagne) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 469 (1898) and *Aecidium valerianellae* Biv., *Stirp. Rar. Sic.* 4: 28 (1816). On *Gladiolus byzantinus*, *G. segetum* and *Iris tingitana* (Maire & Werner, 1937). On *Gladiolus segetum* in Ben karrich and Beni hosmar (Unamuno, 1940d). On *Iris sisyrrinchium* in the forest of Djaba (between El Hajeb and Ifrane) (Guyot & Malençon, 1957). On *Iris sisyrrinchium*, *I. tingitana*, *Gladiolus byzantinus* and *G. segetum* (Rieuf, 1970).

Puccinia glumarum (Schum.) Ericks. & Henn (1920). N.c: *Puccinia striiformis* var. *dactylidis* Manners 1960 and *Puccinia striiformis* var. *striiformis* Westend. 1854. On *Castellia tuberculata*, *Aegilops triarista* and *A. triuncialis* (Maire & Werner, 1937 and Unamuno, 1940a). On *Elymus caput-medusae* and *Lolium strictum* (Unamuno, 1941). On *Agropyrum marginatum*, *Bromus*

squarrosus, *Hordeum* sp in Mechra Benabbou (Guyot & Malençon, 1963). On *Aegilops ovata*, *A. ventricosa*, *A. marginatum*, *Avena sativa*, *Bromus rigidus*, *B. squarrosus*, *Catapodium tuberculatum*, *Elymus caput-medusae*, *Hordeum distichum*, *H. hexastichum*, *Hordeum* sp., *H. vulgare*, *Lolium rigidum*, *Lolium* sp., *Secale cereale*, *Triticum durum*, *T. oasacolum* and *T. sativum* (Rieuf, 1970).

-Puccinia gragosoi Bubák. (1916). On *Koeleria phleoides* in Rabat (El Assfoury et al., 2003).

-Puccinia graminis Pers. (1794). On *Berberis hispanica* and *Elymus caput-medusae* in Boulmane, Dayet Achlef, Zemmour and Rabat (Maire & Werner, 1937). On *Triticum sativum* and *Hordeum bulbosum* (Unamuno, 1940d). On *Triticum vulgare* (Unamuno, 1941). On *Aegilops ovata*, *A. triaristata*, *A. ventricosa*, *Agropyrum marginatum*, *Anthoxanthum odoratum*, *A. elatius*, *A. erianthum*, *Avena alba*, *A. bromoides*, *A. jabandiezii*, *A. sterilis*, *Bromus mollis*, *B. ramosus*, *B. squarrosus*, *Bromus* sp., *Cynosurus echinatus*, *Dactylis glomerata*, *Festuca triflora*, *Hyanaldia hordeacea*, *Hordeum bulbosum*, *H. murinum*, *Hordeum* sp., *Lagurus ovatus*, *Poa* sp., *Trisetum clavescens* and *Triticum* sp. (Guyot & Malençon, 1957). On *Berberis hispanica*, *Agropyrum marginatum*, *Bromus lanceolatus* var. *lanuginosus*, *Bromus rigidus* ssp. *maximus*, *Bromus silva*, *Elymus caput-medusae*, *Hordeum murinum*, *H. vulgare*, *Lolium multiflorum* ssp. *italicum*, *Poa pratensis* and *Secale cereale* (Guyot & Malençon, 1963). On *Aegilops ovata*, *A. triaristata*, *A. ventricosa*, *Agropyrum marginatum*, *Anthoxanthum odoratum*, *Arrhenatherum elatius*, *A. erianthum*, *Avena alba*, *A. brevis*, *A. bromoides*, *A. jabandiezii*, *A. sativa*, *A. sterilis*, *Berberis hispanica*, *Bromus hordaceus*, *B. macrostachys*, *B. ramosus* ssp. *benekenii*, *B. rigidus* ssp. *gussonii*, *B. squarrosus*, *Cynosurus echinatus*, *Dactylis glomerata*, *Elymus caput-medusae*, *Festuca triflora*, *Hyanaldia hordeacea*, *Hordeum bulbosum*, *H. distichum*, *H. hexastichum*, *H. murinum*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *Poa pratensis*, *Secale cereale*, *Triticum flavescens*, *Triticum durum*, *Triticum sativum*, *Triticum sphaerococcum* and *Berberis hispanica* (Unamuno, 1940a; Rieuf, 1970). On *Triticum durum* (Taoufiq, 1988b). On *Hordeum vulgare* (Saadaoui et al., 1993). On *Triticum hordeum* in Chaouia (Lyamani, 1975; Jlibene, 1996).

-Puccinia graminis f. sp. avenae Erikss. & Henning. N.c: *Puccinia graminis* subsp. *graminis* Pers. 1794. On *Avena sterilis* (Guyot & Malençon, 1963).

-Puccinia graminis f. sp. dactylidis Guyot & Massenot. On *Dactylis glomerata*, *Avena bromoides* and *Arrhenatherum elatius* in Tirrist (Guyot & Malençon,



1957). On *Bromus ramosus*, *Dactylis glomerata*, *Bromus* sp and *Poa* sp in Anefgou (Guyot & Malençon, 1963).

-*Puccinia graminis* f. *maroccana* Unamuno (1940). N.c: *Puccinia graminis* subsp. *graminis* Pers. 1794. On *Agropyrum panormitanum* var. *maroccanum* (Rieuf, 1970).

-*Puccinia graminis* f. *oryzae* Gonz. Fragoso. On *Oryza sativa* (Rieuf, 1970).

-*Puccinia graminis* f. sp. *secalis* Erikss. & Henning. N.c: *Puccinia graminis* subsp. *graminis* Pers. 1794. On *Secale cereale* in Ifrane (Guyot & Malençon, 1963).

-*Puccinia graminis* f. sp. *tritici* Erikss. & Henning (1894). N.c: *Puccinia graminis* subsp. *graminis* Pers. 1794. On *Agropyrum marginatum* (Guyot & Malençon, 1963).

Puccinia helianthi Schwein. (1822). N.c: *Puccinia helianthi* Schwein., *Schr. Naturf. Ges. Leipzig* 1: 73 (1822). Syn.: *Dicaeoma helianthii* (Schwein.) Kuntze, *Revis. Gen. Pl.* (Leipzig) 3: 469 (1898). On *Helianthus annuus* in Rabat (Maire & Werner, 1937).

-*Puccinia helianthorum* Schweinitz. On *Helianthorum annuus* (Rieuf, 1970).

-*Puccinia heliopsisidis* Schwein. (1822). On *Helianthorum annuus* (Rieuf, 1970).

-*Puccinia herniariae* Mont. On *Herniaria bemistemon* (Maire & Werner, 1937; Rieuf, 1970).

-*Puccinia hieracii* (Röhl.) H. Mart. (1817). N.c: *Puccinia punctiformis* (F. Strauss) Röhl. 1813. Syn.: *Caeoma obtogens* Link, *Mag. Gesell. naturf. Freunde, Berlin* 3(1-2): 27 (1809), *Puccinia obtogens* (Link) Tul. & C. Tul., *Annl. Sci. Nat., Bot., sér. 4* 2: 87 (1854) and *Uredo punctiformis* F. Strauss, *Ann. Wetter. Gesellsch. Ges. Naturk.* 2: 103 (1810). On *Crepis vesicaria* ssp. *Taraxacifolia* and *C. virens* (Rieuf, 1970).

-*Puccinia holcicola* Guyot (1951). On *Holcus lanatus* (Guyot & Malençon, 1963). On *Allium chamemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setiglumis*, *Koeleria phleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970).

-*Puccinia holcina* Erikss. (1899). N.c: *Puccinia bordei* G.H. Otth 1871. On *Holcus lanatus* and *H. annuus* (Maire & Werner, 1937). On *Allium chamemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setiglumis*, *Koeleria phleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970).

-*Puccinia bordei* G.H. Otth (1871) & Fuckel (1874). N.c: *Puccinia bordei* G.H. Otth, *Mitt. naturf. Ges. Bern*: 114 (1871). Syn.: *Puccinia recondita* f.sp. *holci* Erikss., *Puccinia recondita* f.sp. *tritici* C.O. Johnson, *Puccinia straminis* var. *simplex* Körn., *Herb. myc. oeconom.*: no. 101 (1873), *Puccinia simplex* (Körn.) Erikss. & Henning, *Z. PflKrankh. PflPath. PflSchutz* 4: 260 (1894), *Pleomeris simplex* (Körn.) Syd., *Annl. mycol.* 19(1/2): 171 (1921), *Puccinia bordei* Fuckel, *Jb. nassau. Ver. Naturk.* 27-28: 16 (1874), *Dicaeoma bordei* (Fuckel) Arthur & Fromme, (1920), *Pleomeris bordei* (Fuckel) Syd., *Annl. mycol.* 19(1/2): 171 (1921), *Puccinia bordei-murini* N.F. Buchw., *Annl. mycol.* 41(4/6): 308 (1943), *Puccinia anomala* Rostr., in Thümen, *Herb. myc. oeconom.*: no. 451 (1877), *Dicaeoma anomalum* (Rostr.) Arthur & Fromme, *N. Amer. Fl.* (New York) 7(4-5): 339 (1920), *Uromyces bordei* Tracy, *J. Mycol.* 7(3): 281 (1893), *Caeomurus bordei* (Tracy) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898), *Nigredo bordei* Arthur, *N. Amer. Fl.* (New York) 7(4): 228 (1920), *Nielsenia bordei* (Tracy) Syd., *Annl. mycol.* 19(1/2): 171 (1921), *Puccinia triseti* Erikss., *Annl. Sci. Nat., Bot., sér. 8* 9: 277 (1899), *Pleomeris triseti* (Erikss.) Syd., *Annl. mycol.* 19(1/2): 171 (1921), *Puccinia rubigo-vera* f. *triseti* (Erikss.) Mains, *Pap. Mich. Acad. Sci.* 17: 381 (1933), *Puccinia holcina* Erikss., *Annl. Sci. Nat., Bot., sér. 8* 9: 274 (1899), *Dicaeoma holcinum* (Erikss.) Arthur & Fromme, *N. Amer. Fl.* (New York) 7(4-5): 311 (1920), *Pleomeris holcina* (Erikss.) Syd., *Annl. mycol.* 19(1/2): 171 (1921), *Aecidium ornithogaleum* Bubák, *Annl. mycol.* 3(3): 223 (1905), *Puccinia schismi* Bubák, *Annl. naturb. Mus. Wien, Ser. B, Bot. Zool.* 28: 193 (1914), *Puccinia fragosoi* Bubák, *Hedwigia* 57: 2 (1916), *Puccinia loliina* Syd., *Annl. mycol.* 19(3/4): 247 (1921), *Puccinia schismi* var. *loliina* (Syd.) J. Marková & Z. Urb., *Acta Univ. Carol., Biol.* 42(2): 80 (1998), *Puccinia vulpiana* Guyot, *Uredineana* 2: 53 (1947), *Puccinia vulpiae-myuri* Mayor & Vienn.-Bourg., *Revue Mycol., Paris* 15(2): 103 (1950), *Puccinia recondita* f.sp. *holcina* D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961) and *Puccinia recondita* f.sp. *triseti* D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961). On *Hordeum vulgare* in Safi and *Hordeum* sp. in Mechra Benabbou (Guyot & Malençon, 1963). On *Hordeum bulbosum* and *H. murinum* (Rieuf, 1970). On *Hordeum vulgare* and *H. bulbosum* in the forest of Mamora (Maire & Werner, 1937; El Assfour et al., 2003).

Puccinia bordei-murini N.F. Buchw. (1943). N.c: *Puccinia bordei* G.H. Otth 1871. On *Hordeum murinum* in Sidi Smaine near Mazagan and in the



region of Asni (Guyot & Malençon, 1957). On *Hordeum bulbosum*, *Hordeum murinum* and *Hordeum murini* ssp. *leporinum* (Guyot & Malençon, 1963).

Puccinia hypochaeridis Oudem. (1873) & McAlpine (1895). N.c: *Puccinia hieracii* var. *hypochaeridis* (Oudem.) Jørst. [as '*hypochaeridis*'] 1936. On *Hypochoeris glabra* (Unamuno, 1941) in Tetouan. On *Hypochoeris glabra* and *H. radicata* (Rieuf, 1970). On *Hypochoeris radiata* in Biological station of Ifrane (Guyot & Malençon, 1957). On *Hypochoeris radiata* in the region of Dayet Hachlaf (Guyot & Malençon, 1963).

-*Puccinia hyoseridis-radiatae* R. Maire (1905). On *Hyoseris radiata* in Mehedia and Chaouen (Maire & Werner, 1937; El Assfour et al., 2003). On *Hyoseris radiata* in Ksiba (Guyot & Malençon, 1957). On *Hyoseris radiata* between Rabat and Casablanca (Guyot & Malençon, 1963). On *Hyoseris radiata* (Unamuno, 1940d et 1942; Rieuf, 1970).

-*Puccinia hyoseridis -scabrae* Maire (1905). On *Hyoseris scabra* (Maire & Werner, 1937; Rieuf, 1970).

-*Puccinia ifraniana* Guyot & Malençon (1957). On *Trisetum flavescens* (Guyot & Malençon, 1957). On *Trisetum flavescens* near Timhadit (Guyot & Malençon, 1963). On *Allium chamemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setiglumis*, *Koeleria phleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970).

-*Puccinia imperatae* (Mangus.) G. Poirault, 1913. On *Imperata cylindrica* (Rieuf, 1970).

-*Puccinia isiacae* (Thüm.) G. Winter (1887). On *Phragmites communis* in Larache (Maire & Werner, 1937). On *Phragmites communis* near Asni (Guyot & Malençon, 1957 et 1963). On *Echium plantagineum* and *Phragmites communis* (Rieuf, 1970). On *Phragmites communis* (Rieuf, 1971).

Puccinia isiacae* var. *isiacus Guyot (1954). in Asni, SNS (El Assfour et al., 2003).

-*Puccinia istriaca* Syd. (1903). On *Teucrium polium* in the region of Tizi n'Tretten near Ifrane (Guyot & Malençon, 1957). On *Teucrium polium* (Rieuf, 1970 et 1971).

-*Puccinia jahandiezii* Maire. On *Erysimum bocconeii* var. *gramineum* in Timhadit and Ifrane (Maire & Werner, 1937). On *Erysimum bocconeii* (Rieuf, 1970).

Puccinia jasmini DC. (1805). On *Jasminum fruticans* in Ouezzan, Sefrou and Immouzer (Maire & Werner, 1937). On *Jasminum fruticans* (Guyot & Malençon, 1957). On *Jasminum fruticans* between

Asni and Ouirgane (Guyot & Malençon, 1963). On *Jasminum fruticans* (Rieuf, 1970).

Puccinia junci Desm. (1825) & (F. Strauss) G. Winter (1880). N.c: *Puccinia junci* (F. Strauss) G. Winter, *Hedwigia* 19: 28 (1880) and *Uromyces junci* Tul. & C. Tul. 1854. Syn.: *Uredo junci* F. Strauss (1810) and *Dicaeoma junci* (F. Strauss) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 469 (1898). On *Juncus punctorius* and *Sonchus maritimus* (Maire & Werner, 1937). On *Juncus inflexus* near Asni (Guyot & Malençon, 1963). On *Juncus inflexus*, *J. punctorius* and *Sonchus maritimus* (Rieuf, 1970). On *Juncus inflexus* and *J. punctorius* (Rieuf, 1971).

Puccinia jurineae-humilis Maire (1937). On *Jurinea humilis* (Rieuf, 1970).

-*Puccinia kentrophylli* P. Syd. & Syd. (1902). On *Allium chamemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setiglumis*, *Koeleria phleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970).

-*Puccinia koeleriae* Arthur (1909) & Politis (1940). On *Koeleria phleoides* in Taroudant (Maire & Werner, 1937). On *Allium chamemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setiglumis*, *Koeleria phleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970).

-*Puccinia kundmanniae* Lindr. (1902). On *Kundmannia sicula* in Ourika (Maire & Werner, 1937). On *Kundmannia sicula* (Rieuf, 1970).

-*Puccinia labiatarum* Schldl. (1824). On *Mentha longifolia*, *M. piperita*, *M. rotundifolia*, *M. sativa*, *Satureja atlantica*, *S. calmintha* ssp. *ascendens*, *S. calmintha* var. *calminthoide*, *S. grandiflora* var. *baborensis*, *S. rotundifolia*, *Satureja* sp., *S. vulgaris* and *S. vulgaris* ssp. *villosa* (Rieuf, 1970).

-*Puccinia lactucarum* P. Syd. (1900). N.c: *Puccinia lactucarum* P. Syd., *Ured. Exsic.*: no. 1476 (1900). On *Lactuca* sp and *L. viminea* var. *chondrilliflora* in Ifrane (Guyot & Malençon, 1957). On *Lactuca* sp and *L. viminea* var. *chondrilliflora* (Rieuf, 1970).

Puccinia laguri Jaap (1916). On *Lagurus ovatus* in Zerhoun (Guyot & Malençon, 1963). On *Allium chamemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setiglumis*, *Koeleria phleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970). On *Lagurus ovatus* in Rabat (El Assfour et al., 2003).

-Puccinia laguri-chamaemoly Maire (1919). On *Allium chamaemoly*, *Lagurus ovatus* in forest of Mamora and in Imi-n-Tnout (Maire & Werner, 1937; El Assfour et al., 2003). On *Allium chamaemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setiglumis*, *Koeleria pbleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970).

-Puccinia launaeae Maire (1906). On *Launaea resedifolia* between Mogador and Agadir (Guyot & Malençon, 1957). On *Launaea nudicaulis* between Essaouira and Agadir (Guyot & Malençon, 1963). On *Launaea nudicaulis* and *Launaea resedifolia* (Maire & Werner, 1937; Rieuf, 1970).

-Puccinia leontodontis Jacky (1899). N.c: *Puccinia hieracii* var. *hieracii* (Röhl.) H. Mart. 1817. On *Leontodon hipidus* between Tetouan and Ceuta (Unamuno, 1942b; Rieuf, 1970).

-Puccinia leontodontis Jacky var. *australis* Trotter. On *Leontodon tuberosus* in Merzouka (Maire & Werner, 1937).

-Puccinia littoralis Rostr. (1876). On *Juncus inflexus*, *J. punctorius* and *Sonchus maritimus* (Rieuf, 1970).

-Puccinia lolii E. Nielsen (1875). N.c: *Puccinia coronata* Corda 1837. On *Avena* sp in Rabat and *Lolium perene* in Ouiuane (Maire & Werner, 1937; El Assfour et al., 2003). On *Agrostis stolonifera*, *Arrhenathrum elatius*, *Avena alba*, *A. longiglumis*, *Avena sterilis*, *Avena* sp., *Bromus* sp., *Catabrosa aquatica*, *Festuca arundinacea*, *F. ciliata*, *F. mairei*, *F. triflora*, *Glyceria distans*, *Lamarckia aurea*, *Lolium multiflorum*, *L. perene*, *Phalaris tuberosa*, *Rhombus lycioides* ssp. *oleoides* and *Vulpia alopecuros* (Rieuf, 1970).

-Puccinia loliiina Syd. (1921). N.c: *Puccinia bordei* G.H. Oth 1871. On *Lolium rigidum* in forest of Djaaba near El Hajeb and near Asni (Guyot & Malençon, 1957). On *Lolium multiflorum* ssp. *italicum*, *Lolium rigidum* and *Lolium temulentum* (Guyot & Malençon, 1963).

-Puccinia longissima J. Schröt. (1879). N.c: *Puccinia longissima* J. Schröt., in Cohn, *Beitr. Biol. Pfl.* 3: 70 (1879). Syn.: *Dicaeoma longissimum* (J. Schröt.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 469 (1898). On *Koeleria vallesiana* between Ifrane and Boulmane (Guyot & Malençon, 1957).

-Puccinia madritensis Maire (1919). On *Clematis cirrhosa*, *Bromus madrilensis*, *B. macrostachys*, *B. sterilis*, *B. tectorum* in Ketama, Dar Riffien and Mehedia (Maire & Werner, 1937; El Assfour et al., 2003). On *Bromus madritensis* in Sidi Brahim near Mazagan and

in Souk Es Sebt near Safi, on *Bromus* sp and *B. macrostachys* near Asni (Guyot & Malençon, 1957). On *Bromus macrostachys*, *B. rubens*, *B. scoparius*, *B. tectorum* and *Bromus* sp (Guyot & Malençon, 1963). On *Bromus alopecuros*, *B. bordaceus*, *B. amrostachys*, *B. madritensis*, *B. rubens*, *B. scoparius*, *B. sterilis*, *B. tectorum*, *B. villosus* and *B. cirrhosa* (Rieuf, 1970).

-Puccinia magnusiana Körn. (1876). N.c: *Puccinia magnusiana* Körn., *Hedvigia* 15: 179 (1876). Syn.: *Dicaeoma magnusianum* (Körn.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 469 (1898), *Aecidium ranunculacearum* sensu De Candolle [Fl. Fr. 5: 97 (1815)] p.p., *Aecidium ranunculi* Schwein., *Schr. naturf. Ges. Leipzig* 1: 67 (1822) and *Puccinia arundinacea* β *epicaula* Wallr., *Fl. crypt. Germ.* (Nürnberg) 2: 225 (1833). On *Phragmites communis* and *P. communis* var. *isiacus* (Guyot & Malençon, 1963). On *Phragmites communis* and *Phragmites communis* var. *isiacus* (Rieuf, 1970 et 1971). On *Phragmites communis* var. *isiacus* (El Assfour et al., 2003).

-Puccinia magydaridis Pat. & Trab. (1897). On *Magydaris tomentosa* in Tanger, Harcha, Meknes and Rabat (Maire & Werner, 1937). On *Magydaris tomentosa* in Rabat and *Magydaris pastinacea* near Bab Ahzar (Guyot & Malençon, 1957). On *Magydaris pastinacea* (Rieuf, 1970 et 1971).

Puccinia malvacearum Bertero ex Mont. (1852). N.c: *Puccinia malvacearum* Bertero ex Mont., in Gay, *Hist. fis. y Politic. Chile, Bot.* 8: 43 (1852). Syn.: *Leptopuccinia malvacearum* (Bertero ex Mont.) Rostr., *Plantepato logi*: 268 (1902), *Micropuccinia malvacearum* (Bertero ex Mont.) Arthur & H.S. Jacks., *Bull. Torrey bot. Club* 48: 41 (1921) and *Puccinia sidae-rhombifoliae* Mayor, (1927). On *Malope trifida*, *Malva hispanica*, *M. nicaeensis*, *M. parviflora*, *M. rotundifolia*, *M. neglecta*, *M. silvestris*, *Lavatera cretica*, *L. olbia*, *L. trimestris*, *Alcea rosa*, *Althaea hirsuta* and *A. longiflora* (Maire & Werner, 1937). On *Althaea rosea* (Unamuno, 1940b et 1941). On *Malva* sp (Unamuno, 1942a) and *Malva rotundifoliacea* (Unamuno, 1940a). On *Althaea rosea* (Guyot & Malençon, 1957). On *Lavatera* sp and *Malva parviflora* (Guyot & Malençon, 1963). On *Althaea hirsuta*, *A. longiflora*, *A. officianalis*, *Lavatera cretica*, *L. olbia*, *L. sp.*, *L. trimestris*, *Malope trifida*, *Malva hispanica*, *M. nicaeensis*, *M. parviflora*, *M. rotundifolia*, *M. silvestris* and *Malva* sp (Rieuf, 1970). On *Malope trifida*, *Malva hispanica*, *M. nicaeensis*, *M. parviflora*, *M. rotundifolia*, *M. neglecta*, *M. silvestris* and *Malva* sp (Rieuf, 1971).

-Puccinia mariana Sacc. (1915). N.c: *Puccinia mariana* Sacc., *Nuovo Giorn. Bot. Ital.* 22: 29 (1915).

On *Silybum marianum* (Rieuf, 1970 et 1971). On *Silybum marianum* near Meknes and in Safi (Guyot & Malençon, 1957 et 1963).

Puccinia maupasi Maire. On *Rhaponticum acaule* (El Assfour et al., 2003).

-*Puccinia mauritanica* Maire (1915). On *Asperula hirsuta* in Imasimen and Reraya (Maire & Werner, 1937). On *Asperula hirsuta* in Tizi Ait Ourra (Guyot & Malençon, 1957). On *Asperula hirsuta* between Ifrane and Boulmane (Guyot & Malençon, 1963). On *Asperula hirsuta* (Rieuf, 1970).

-*Puccinia maydis* Berenger (1844). N.c: *Puccinia sorghi* Schwein. 1832. On *Zea mays* (Unamuno, 1940d). On *Oxalis corniculata* and *Zea mays* (Maire & Werner, 1937; Rieuf, 1970).

Puccinia mediterranea Trotter (1912). On *Polypogon maritimus* subsp. *eu-maritimus* and *Polypogon monspeliensis* (Guyot & Malençon, 1963). On *Polypogon maritimus* ssp. *eu-maritimus* and *Polypogon monspeliensis* (Rieuf, 1970 et 1971).

-*Puccinia melanopsis* P. Syd. & Syd. (1903). On *Iris sisyrynchium* in Tanant and Rehamna (Maire & Werner, 1937). On *Iris sisyrynchium* (Rieuf, 1970).

-*Puccinia menthae* Pers. (1801). N.c: *Puccinia menthae* Pers., *Syn. meth. fung.* (Göttingen) 1: 227 (1801). Syn.: *Dicaeoma menthae* (Pers.) Gray, *Nat. Arr. Brit. Pl.* (London) 1: 542 (1821), *Aecidium menthae* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 95 (1815), *Puccinia clinopodii* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 57 (1815), *Uredo labiatarum* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 6: 72 (1815), *Caeoma labiatarum* (DC.) Schltdl., *Fl. berol.* (Berlin) 2: 128 (1824), *Trichobasis labiatarum* (DC.) Lév., in Orbigny, *Dict. Univ. Hist. Nat.* 12: 785 [19 of extr.] (1849), *Caeoma menthatum* Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 47 (1825) and *Trichobasis clinopodii* Cooke, *Microscopic fungi*: 224 (1865). On *Mentha rotundifolia*, *Satureja calamintha* subsp. *ascendes*, *Satureja vulgaris* and *Asperula hirsuta* (Guyot & Malençon, 1963). On *Mentha longifolia*, *M. piperita*, *M. rotundifolia*, *M. sativa*, *Satureja atlantica*, *S. calamintha* ssp. *ascendens*, *S. calamintha* var. *calaminthoide*, *S. grandiflora* var. *baborensis*, *S. rotundifolia*, *Satureja* sp., *S. vulgaris* and *S. vulgaris* ssp. *villosa* and *Iris sisyrynchium* (Maire & Werner, 1937; Rieuf, 1970). On *Eudarluca caricis*, *Satureja atlantica*, *S. calamintha* var. *calaminthoide*, *S. cheterotrich* and *S. rotundifolia* (Rieuf, 1971). On *Mentha sativa* (Unamuno, 1940d).

-*Puccinia menthae* var. *clinopodii* Szakien (1927). On *Satureja vulgaris* (Rieuf, 1970 et 1971).

-*Puccinia mesnieriana* Thüm. (1877). On *Rhamnus lycioides* in Boulemane (Haouari, 1984). On *Rhamnus alaternus* and *R. lycioides* ssp. *oleoides* (Rieuf, 1970 et 1970).

Puccinia microlonchi Syd. (1904). On *Mantisalca salmantica* (Maire & Werner, 1937; Rieuf, 1970 et 1971). On *Mantisalca salmantica* in Settatt (Guyot & Malençon, 1963).

-*Puccinia micromeriae* Dudley & C.H. Thomps. (1904). On *Mentha longifolia*, *M. piperita*, *M. rotundifolia*, *M. sativa*, *Satureja atlantica*, *S. calamintha* ssp. *ascendens*, *S. calamintha* var. *calaminthoide*, *S. calamintha* var. *heterotricha*, *S. grandiflora* var. *baborensis*, *S. rotundifolia* and *Satureja* sp (Rieuf, 1970)

-*Puccinia mirabilissima* Peck (1881). On *Mahonia aquifolium* (Rieuf, 1970).

-*Puccinia mixta* Fuckel (1870). N.c: *Puccinia allii* (DC.) F. Rudolphi 1829. On *Eudarluca caricis*, *Satureja vulgaris villosa*, *Satureja* sp., *S. vulgaris* and *S. grandiflora* var. *baborensis* (Rieuf, 1971).

-*Puccinia monardiellae* Dudley & C.H. Thomps. (1904). On *Mentha longifolia*, *M. piperita*, *M. rotundifolia*, *M. sativa*, *Satureja atlantica*, *S. calamintha* ssp. *ascendens*, *S. calamintha* var. *calaminthoide*, *S. calamintha* var. *heterotricha*, *S. grandiflora* var. *baborensis*, *S. rotundifolia* and *Satureja* sp (Rieuf, 1970).

-*Puccinia montagnei* De Toni. (1888). On *Herniaria cinerea* (Maire & Werner, 1937; Rieuf, 1970).

Puccinia montana Fuckel (1873). N.c: *Puccinia montana* Fuckel, *Jb. nassau. Ver. Naturk.* 27-28: 14 (1874). Syn.: *Dicaeoma montanum* (Fuckel) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 469 (1898). On *Centaurea triumphetti* var. *seuseana* (Guyot & Malençon, 1957). On *Centaurea triumphetti* var. *seuseana* and *Centaurea triumphetti* var. *dipora* (Guyot & Malençon, 1963). On *Centrea triumphetti* var. *senseana* (Rieuf, 1970).

-*Puccinia montivaga* Bubak (1905). On *Hypochoeris* sp (Maire & Werner, 1937).

-*Puccinia nolletiae* Malençon (1936). On *Nolletia chrysocomoides* (Maire & Werner, 1937; Guyot & Malençon, 1957; Rieuf, 1970).

Puccinia notobasidis Politis (1909), Gonz. Frag. (1926) & Sävul. & Rayss (1935). On *Notobasis syriaca* in Tanger and Tissa (Maire & Werner, 1937; Unamuno, 1940d). On *Crisium syriacum* (Unamuno, 1940d; Rieuf, 1970).

-*Puccinia obscura* sensu Kirk, sensu Cunningham & J. Schröt. (1877). N.c: *Puccinia lagenophorae* Cooke 1884, *Puccinia tenuispora* McAlpine 1906 and *Puccinia obscura* J. Schröt., *Nuovo Giorn. Bot. Ital.* 9: 256

(1877). Syn.: *Dicaeoma obscurum* (J. Schröt.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 469 (1898), *Puccinia luzulae-maximae* Dietel, *Annls mycol.* 17(1): 57 (1919) and *Puccinia obscura* var. *luzulae-maximae* (Dietel) U. Braun, *Feddes Repert. Spec. Nov. Regni Veg.* 93(3-4): 273 (1982). On *Bellis sylvestris* near Taza (Guyot & Malençon, 1963). On *Luzula graeca* (Maire & Werner, 1937). On *Bellis sylvestris*, *Luzula atlantica* and *L. forsteri* (Rieuf, 1970). On *Luzula atlantica*, *L. forsteri* and *L. graeca* (Rieuf, 1971).

Puccinia odontolepidis Gonz. Frag. (1918) & J. Schröt. (1877). On *Cirsium odontolepis* in Dayet Chiker (Maire & Werner, 1937). On *Cirsium echinatum* in the lower slopes of Tizi n'Tretten near Ifrane (Guyot & Malençon, 1957). On *Cirsium vulgare* near Asni (Guyot & Malençon, 1963). On *Cirsium echinatum*, *C. odontolepis* and *C. vulgare* var. *hypoleucum* (Rieuf, 1970).

Puccinia orenanthis Rieuf (1970). On *Lactuca muralis* (Rieuf, 1970).

Puccinia pachyderma Wettst. (1887). On *Gagea* sp in Taliouine (Maire & Werner, 1937). On *Gagea foliosa* (Rieuf, 1970).

Puccinia parielii Maire (1931). On *Ferula communis* (Maire & Werner, 1937; Rieuf, 1970).

Puccinia paraphysata Reichert (1921). On *Allium chamemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setiglumis*, *Koeleria phleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970).

Puccinia paronychia Unamuno (1933). On *Paronychia kapela* (Maire & Werner, 1937; Rieuf, 1970 et 1970).

Puccinia pelargonii-zonalis Doidge (1926). N.c: *Puccinia pelargonii-zonalis* Doidge, *Bothalia* 2(1a): 98 (1926). Syn.: *Uredo geranii* DC., *Vorhandl. Krist. Vidensk. Selsk.*: 47 (1806), *Caecoma geranii* (Schleich. ex DC.) Schltdl., *Fl. berol.* (Berlin) 2: 128 (1824), *Uromyces geranii* (DC.) G.H. Otth & Wartm., *Annls Sci. Nat., Bot., sér. 3 8*: 371 (1847), *Caecomurus geranii* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898), *Nigredo geranii* (DC.) Arthur, *N. Amer. Fl.* (New York) 7(11): 765 (1926), *Uredo geranii* DC., *Vorhandl. Krist. Vidensk. Selsk.*: 47 (1806) var. *geranii*, *Uromyces puccinioides* Rabenh., (1851) and *Aecidium violaceum* Trel., (1904). On *Pelargonium* sp and *Pelargonium zonale* (Rieuf, 1970 et 1971).

Puccinia perennis Jacky. On *Lactuca* sp and *Lactuca viminea* var. *chondrilliflora* (Rieuf, 1970).

Puccinia persica Wettst (1887). On *Centaurea sulphurea* and *C. seridis* (Guyot & Malençon, 1957). On *Centaurea eriophora*, *C. involucrata*, *C. maroccana*, *C. cfr. seridis*, *C. sulphurea* and *Centaurea* sp (Guyot & Malençon, 1963). On *Centaurea eriophora*, *C. involucrata*, *C. maroccana*, *C. seridis* and *C. sulphurea* (Rieuf, 1970). On *Centaurea carduiiformis*, *C. kermanensis*, *C. berlangeri* and *C. sulphurea* (Unamuno, 1941).

Puccinia picridis Magnus (1911), Woron. (1927) & Hazsl. (1877). On *Hedypnois polymorpha* in forest of Mamora near Rabat (Guyot & Malençon, 1957). On *Hedypnois polymorpha* (Rieuf, 1970).

Puccinia picridis-strigosae P. Syd. & Syd. (1904). On *Helminthia echioides* (Guyot & Malençon, 1957). On *Picris aculeata* (Guyot & Malençon, 1963). On *Helminthia aculeata* and *Helminthia echioides* (Rieuf, 1970).

Puccinia pimpinellae (F. Strauss) Link (1824). N.c: *Puccinia pimpinellae* (F. Strauss) Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(1): 77 (1824). Syn.: *Uredo pimpinellae* F. Strauss, *Ann. Wetter. Gesellsch. Ges. Naturk.* 2: 102 (1810), *Trichobasis pimpinellae* (F. Strauss) Cooke, *Microscopic fungi*: 224 (1865), *Dicaeoma pimpinellae* (F. Strauss) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 470 (1898), *Aecidium bunii sensu auct. p.p.*; fide Checklist of Basidiomycota of Great Britain and Ireland (2005), *Lecythaea poterii* Lév., *Annls Sci. Nat., Bot., sér. 3 8*: 374 (1847), *Aecidium poterii* Cooke, *J. Bot., Lond.* 2: 39 (1864) and *Aecidium bunii* var. *poterii* Cooke, *Handb. Brit. Fungi* 2: 540 (1871). On *Pimpinella villosa* (Unamuno, 1940d; Rieuf, 1970 et 1971). On *Pimpinella villosa* between Safi and Oualidia (Guyot & Malençon, 1957). On *Pimpinella villosa* near Larache (Guyot & Malençon, 1963). On *Pimpinella tragiium* (Maire & Werner, 1937; Rieuf, 1970 et 1971).

Puccinia phragmitis (Schumach.) Körn. (1876). On *phragmites communis*, *Rumex conglomeratus*, *Rumex crispus* and *Rumex* sp (Maire & Werner, 1937, Rieuf, 1970 et 1971). On *Phragmites communis* (El Assfour et al., 2003).

Puccinia poae-nemoralis G.H. Otth. (1871). N.c: *Puccinia brachypodii* var. *poae-nemoralis* (G.H. Otth) Cummins & H.C. Greene 1966. On *Poa annua* (Guyot & Malençon, 1963). On *Poa annua* ssp. *exilis* and *P. annua* ssp. *typica* (Rieuf, 1970 et 1971).

Puccinia poae-sudeticae Jørst. (1932). N.c: *Puccinia brachypodii* var. *poae-nemoralis* (G.H. Otth) Cummins & H.C. Greene 1966. On *Pimpinella tragiium* and *P. villosa* (Rieuf, 1970).



-*Puccinia podospermi* DC. (1805). N.c: *Puccinia podospermi* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 595 (1805). On *Podospermum laciniatum* (Guyot & Malençon, 1963). On *Scorzonera laciniata* in Port-Lyautey, Azrou and near Figuig (Maire & Werner, 1937; El Assfoury et al., 2003). On *Scorzonera laciniata* and *S. laciniata* ssp. *calcitrapifolia* (Rieuf, 1970 et 1971).

-*Puccinia polii* Guyot (1938). On *Teucrium polium* (Rieuf, 1970 et 1970). On *Teucrium polium* (Guyot & Malençon, 1957 et 1963).

-*Puccinia polygoni-amphibii* Pers. (1801). On *Polygonum amphibium* and *Polygonum* sp (Rieuf, 1970 et 1970).

-*Puccinia porri* (Sowerby) G. Winter (1882). N.c: *Puccinia allii* (DC.) F. Rudolphi 1829. Byn.: *Uredo porri* Sowerby 1810. On *Allium ampeloprasum*, *A. cepa*, *A. paniculatum*, *A. porrum* and *A. sativum* (Rieuf, 1970). On *Allium ampeloprasum*, *A. paniculatum* var. *pallens* and *A.* sp (Maire & Werner, 1937).

-*Puccinia prenanthis* J. Kunze (1823) & (Pers.) Fuckel (1870). N.c: *Puccinia maculosa* Schwein. 1832. Byn.: *Aecidium prenanthis* Pers. 1801. On *lactuca muralis* (Unamuno, 1942; Rieuf, 1970).

-*Puccinia prostii* Duby (1830). N.c: *Puccinia prostii* Duby, *Bot. Gall.*, Edn 2 (Paris) 2: 891 (1830). On *Tulipa australis* (Maire & Werner, 1937; Rieuf, 1970 et 1971).

-*Puccinia prunicolor* Syd., P. Syd. & E.J. Butler (1906). N.c: *Puccinia purpurea* Cooke 1876. On *Andropogon halepense* and *A. sorghum* (Rieuf, 1970).

Puccinia pruni-spinosa Pers. (1801). N.c: *Tranzschelia pruni-spinosae* (Pers.) Dietel 1922. On *Anemone coronaria*, *Prunus domestica*, *P. amygdalus*, *P. armeniaca* and *P. persica* (Maire & Werner, 1937). On *Amygdalus communis* in Ceuta (Unamuno, 1940c). On *Anemone coronaria*, *Armeniaca vulgaris*, *Persica vulgaris*, *Prunus domestica* and *P. japonica* (Rieuf, 1970). On *Eudarlucia caricis* (Rieuf, 1971).

-*Puccinia pseudo-menthae* G. Cunn. (1930). On *Mentha longifolia*, *M. piperita*, *M. rotundifolia*, *M. sativa*, *Satureja atlantica*, *S. calamintha* ssp. *ascendens*, *S. calamintha* var. *calamintoides*, *S. calamintha* var. *heterotricha*, *S. grandiflora* var. *baborensis*, *S. rotundifolia* and *Satureja* sp (Rieuf, 1970).

-*Puccinia pseudo-myuri* Kleb. On *Allium chamemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setiglumis*, *Koeleria phleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970).

-*Puccinia pulverulenta* Grev. (1824). N.c: *Puccinia pulverulenta* Grev., *Fl. Edin.*: 432 (1824). Syn.: *Aecidium epilobii* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 238 (1815) and *Puccinia epilobii-tetragoni* G. Winter, *Pilze*: 214 (1884). On *Epilobium hirsutum* (Rieuf, 1970).

-*Puccinia pulvinata* Rabenh. (1871). N.c: *Puccinia pulvinata* Rabenh., *Hedwigia* 10: 20 (1871). Syn.: *Dicaeoma pulvinatum* (Rabenh.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 470 (1898). On *Echinops spinosus* and *E. spinosus* ssp. *bovei* (Guyot & Malençon, 1957). On *Echinops spinosus* between Ouirgane and Mouldirt near Asni and on *Echinops spinosus* ssp. *bovei* in Ijoukak (Guyot & Malençon, 1963). On *Echinops spinosus* and *E. spinosus* ssp. *bovei* (Rieuf, 1970). On *Echinops bovei* in Oujda, Harcha, Marrakech, Tifnit and Oued Issen (Maire & Werner, 1937).

-*Puccinia punctata* Link (1815). N.c: *Puccinia punctata* Link, *Mag. Gesell. naturf. Freunde, Berlin* 7: 30 (1815). Syn.: *Persooniella punctata* (Link) Syd., *Annls mycol.* 20(3/4): 118 (1922), *Puccinia galiorum* Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 76 (1825), *Trichobasis galii* Castagne, *Observ. Uréd.* 1: 19 (1842), *Uredo galii* (Castagne) Berk., *Outl. Brit. Fung.* (London): 332 (1860), *Puccinia asperulae-odoratae* Wurth, *Zentbl. Bakt. Parasitkde*, Abt. II 12: 714 (1904) and *Persooniella asperulae-odoratae* (Wurth) Syd., *Annls mycol.* 20(3/4): 118 (1922). On *Galium pumilum* var. *atlanticum* and *G. tunetatum* (Maire & Werner, 1937; Rieuf, 1970).

-*Puccinia purpurea* Cko (1876). N.c: *Puccinia purpurea* Cooke, *Grevillea* 5(no. 33): 15 (1876). Syn.: *Dicaeoma purpureum* (Cooke) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 1-576 (1898), *Uredo sorghi* Fuckel, in Thümen, *Puccinia sanguinea* Dietel, (1897), *Uredo sorghi-halepensis* Pat., *Cryptog. Mycol.* 19: 253 (1903), *Puccinia sorghi-halepensis* (Pat.) Speg., *Anal. Mus. nac. Hist. nat. B. Aires* 26: 120 (1914), *Uredo andropogonis-hirti* Maire, *Cryptog. Mycol.* 20: 162 (1905), *Puccinia andropogonis-hirti* (Maire) Beltrán, *Mém. de le Real Soc. Española Hist. Nat.* 50: 252 (1921), *Puccinia prunicolor* Syd., P. Syd. & E.J. Butler, *Annls mycol.* 4(5): 435 (1906) and *Dicaeoma prunicolor* (Syd., P. Syd. & E.J. Butler) Syd., *Annls mycol.* 20(3/4): 118 (1922). On leaves of *Sorghum halepense* in Ceuta (Unamuno, 1940d). On *Andropogon halepense* and *A. sorghum* (Rieuf, 1970). On *Sorghum halepense* in Larache (Maire & Werner, 1937)

-*Puccinia pycnanthemii* Schwein. (1832). On *Mentha longifolia*, *M. piperita*, *M. rotundifolia*, *M. sativa*, *S. atlantica*, *S. calamintha* ssp. *ascendens*, *S. calamintha* var.



calaminthoides, *S. calamintha* var *heterotricha*, *S. grandiflora* var *baborensis*, *S. rotundifolia* and *Satureja* sp (Rieuf, 1970).

Puccinia rhagadioli (Pass.) Syd. (1904). On *Rhagadiolus stellatus* var. *intermedius* (Maire & Werner, 1937; Guyot & Malençon, 1957; Rieuf, 1970 et 1971).

-*Puccinia recondita* Dietel & Holw. (1857). N.c: *Puccinia recondita* Dietel & Holw., *Bull. Soc. bot. Fr.* 4: 798 (1857). Syn.: *Puccinia straminis* sensu auct. p.p.; fide Checklist of Basidiomycota of Great Britain and Ireland (2005), *Aecidium asperifolii* Pers., *Observ. mycol.* (Lipsiae) 1: 97 (1796), *Puccinia asperifolii* (Pers.) Wettst., (1885), *Dicaeoma asperifolii* (Pers.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 466 (1898), *Aecidium asperifolii* Pers., *Observ. mycol.* (Lipsiae) 1: 97 (1796) var. *asperifolii*, *Aecidium aquilegiae* Pers., *Icones Pictae Rariorum fungorum* 4: 58 (1803), *Dicaeoma aquilegiae* (Pers.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 466 (1898), *Aecidium clematidis* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 243 (1805), *Uredo rubigo-vera* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 83 (1815), *Uromyces rubigo-vera* (DC.) Lév., *Annls Sci. Nat., Bot.*, sér. 3 8: 371 (1847), *Trichobasis rubigo-vera* (DC.) Lév., in Orbigny, *Dict. Univ. Hist. Nat.* 12: 785 [19 of extr.] (1849), *Puccinia rubigo-vera* (DC.) G. Winter, *Rabenh. Krypt.-Fl.*, Edn 2 (Leipzig) 1.1: 217 (1881), *Aecidium ranunculacearum* var. *aquilegiae-vulgaris* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 6: 97 (1815), *Aecidium thalictri* Grev., *Scott. crypt. fl.* (Edinburgh) 1: 4 (1823), *Caecoma borragineatum* Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 48 (1825), *Aecidium ranunculacearum* var. *thalictri* Cooke, *Handb. Brit. Fungi*: 540 (1871), *Aecidium ranunculacearum* var. *aquilegiae* Cooke, *Handb. Brit. Fungi* 2: 539 (1871), *Aecidium ranunculacearum* var. *clematidis* Cooke, *Handb. Brit. Fungi* 2: 539 (1871), *Puccinia perplexans* Plowr., *Quart. J. Microscop. Sci.* 25: 164 (1885), *Dicaeoma perplexans* (Plowr.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 470 (1898), *Pleomeris perplexans* (Plowr.) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Puccinia persistens* Plowr., *Monograph Ured. & Ustil.*: 180 (1889), *Dicaeoma persistens* (Plowr.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 470 (1898), *Pleomeris persistens* (Plowr.) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Puccinia recondita* subsp. *persistens* (Plowr.) D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961), *Puccinia agropyri* Ellis & Everh., *J. Mycol.* 7(2): 131 (1892), *Dicaeoma agropyrum* (Ellis & Everh.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 467 (1898), *Puccinia persistens* subsp. *agropyri* (Ellis &

Everh.) J. Marková & Z. Urb., *Acta Univ. Carol., Biol.* 41(4): 353 (1998), *Puccinia agrostidis* Oudem., 1: 528 (1892), *Puccinia dispersa* Erikss. & Henning, *Bull. Inst. bot. Univ. Belgrade* 12: 315 (1894), *Dicaeoma dispersum* (Erikss. & Henning) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 468 (1898), *Pleomeris dispersa* (Erikss.) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Puccinia borealis* Juel, *J. Bot., Lond.* 51: 411 (1894), *Dicaeoma boreale* (Juel) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 468 (1898), *Puccinia persistens* var. *borealis* (Juel) J. Marková & Z. Urb., *Acta Univ. Carol., Biol.* 41(4): 362 (1998), *Puccinia dispersa* f.sp. *tritici* Erikss. & Henning, *Z. PflKrankh. PflPath. PflSchutz* 4: 175 (1894), *Aecidium ancbusae* Erikss. & Henning, *Syll. fung.* (Abellini) 11: 204 (1895), *Puccinia triticina* Erikss., *Annls Sci. Nat., Bot.*, sér. 8 9: 270 (1899), *Pleomeris triticina* (Erikss.) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Puccinia perplexans* var. *triticina* (Erikss.) Z. Urb., *Česká Mykol.* 21: 16 (1967), *Puccinia persistens* var. *triticina* (Erikss.) Z. Urb. & J. Marková, *Boln Soc. argent. Bot.* 18(1-2): 179 (1977), *Puccinia persistens* subsp. *triticina* (Erikss.) Z. Urb. & J. Marková, in Marková & Urban, *Acta Univ. Carol., Biol.* 41(4): 346 (1998), *Puccinia bromina* Erikss., *Annls Sci. Nat., Bot.*, sér. 8 9: 271 (1899), *Pleomeris bromina* (Erikss.) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Puccinia agropyrina* Erikss., *Annls Sci. Nat., Bot.*, sér. 8 9: 273 (1899), *Pleomeris agropyrina* (Erikss.) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Puccinia persistens* subsp. *agropyrina* (Erikss.) Z. Urb. & J. Marková, in Marková, *Boln Soc. argent. Bot.* 18(1-2): 180 (1977), *Puccinia persistens* var. *agropyrina* (Erikss.) Z. Urb. & J. Marková, in Marková & Urban, *Acta Univ. Carol., Biol.* 41(4): 360 (1998), *Puccinia symphyti-bromorum* Fr. Müll., *Beib. bot. Cbl.* 10: 201 (1901), *Puccinia bromina* subsp. *symphyti-bromorum* (Fr. Müll.) Z. Urb. & J. Marková, *Acta Univ. Carol., Biol.* 43(2): 126 (1999), *Aecidium hellebori* E. Fisch., *Ured. der Schweiz*: 526 (1904), *Puccinia secalina* Grove.: 261 (1913), *Puccinia rubigo-vera* f.sp. *agrostidis* Mains, *Pap. Mich. Acad. Sci.* 17: 352 (1933), *Puccinia rubigo-vera* f.sp. *holcina* Mains, *Pap. Mich. Acad. Sci.* 17: 381 (1933), *Puccinia rubigo-vera* f.sp. *perplexans* Mains, *Pap. Mich. Acad. Sci.* 17: 357 (1933), *Puccinia rubigo-vera* f.sp. *triseti* Mains, *Pap. Mich. Acad. Sci.* 17: 381 (1933), *Puccinia cerinthes-agropyrina* f.sp. *echii-agropyri* Gäum. & Terrier, *Ber. schweiz. bot. Ges.* 57: 244 (1947), *Puccinia recondita* f.sp. *agropyrina* D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961), *Puccinia recondita* f.sp. *bromina* D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961), *Puccinia recondita* f.sp. *echii-agropyrina* D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961), *Puccinia*

recondita f.sp. *perplexans* D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961), *Puccinia recondita* f.sp. *persistens* D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961) and *Puccinia recondita* f.sp. *triticea* D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961). On *Anchusa undulata* and *A. italica* (Diouri, 1992). On *Triticum durum* (Taoufiq, 1993). On *Triticum aestivum* (Benyahia & Lyamani, 1999; Douimi et al., 1999; Ezzahiri et al., 1999).

-*Puccinia recondita* f.sp. *hordei* Boulif M. (1996). On *Triticum durum* (Boulif, 1996).

-*Puccinia recondita* f.sp. *tritici* C.O. Johnson. N.c: *Puccinia hordei* G.H. Oth 1871. On *Triticum durum* in the region of Souss-Massa (Diouri, 1988). On *Triticum durum* (Haouari, 1984; Taoufiq, 1986; Taoufiq, 1988a; Ezzahiri, 1993b; Ezzahiri, 1994b) On *Triticum hordeum*, *T. aestivum* and *T. durum* (Lyamani, 1989; Lyamani, 1990; Ezzahiri et al., 1990). On the Wheat (Ezzahiri & Diouri, 1992a, Diouri, 1993; Taoufiq, 1993). On Cereals (Haouari, 1984; Taoufiq, 1986; Diouri, 1988; Taoufiq, 1988b; Buleigh et al., 1991; Ezzahiri & Diouri, 1992b; Ezzahiri, 1993a; Ezzahiri, 1993b; Saadaoui et al., 1993; Ezzahiri, 1994a; Ezzahiri et al., 1996; Ouassou & El khayari, 1996; Ramadani, 1996; Ramadani & Jlibene, 1996). On *Triticum aestivum* (Jlibene, 1996) and *T. durum* in the region of Agadir, Abda and Doukkala, Tadla (region of Beni Mellal), Saiss (region of Meknes and Fes), Kenitra and the region of Tanger (Ezzahiri, 1993b; Ezzahiri et al., 1998). On *T. durum* and *T. aestivum* (Ezzahiri, 1993; Ezzahiri, 1994b) in Oulad Amrane, Sidi Benoure, Aounate, Oulade Safi, Bougreda, Oulad Abdou, Guich, Merchouch and Youssoufia (Boubekeur et al., 1996). On *Avena* sp (Allagui & Cherkaoui, 1999).

-*Puccinia rimosa* (Link) G. Winter (1880). N.c: *Puccinia rimosa* (Link) G. Winter, *Hedwigia* 19: 28 (1880). Syn.: *Caeoma rimosum* Link, *Willd., Sp. pl.*, Edn 4 6(2): 6 (1825) and *Dicaeoma rimosum* (Link) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 470 (1898). On *Juncus maritimus* (Maire & Werner, 1937; Unamuno, 1940d).

-*Puccinia romagnoliana* Maire & Sacc. (1903). N.c: *Puccinia romagnoliana* Maire & Sacc., *Annls mycol.* 1(3): 220 (1903). On *Cyperus longus* (Unamuno, 1940d).

-*Puccinia rubigo-vera* sensu auct. p.p., & (DC.) G. Winter (1881). N.c: *Puccinia striiformis* var. *striiformis* Westend. 1854 and *Puccinia recondita* Dietel & Holw. 1857. Byn.: *Uredo rubigo-vera* DC., in de Candolle &

Lamarck 1815. On *Aegilops ovata*, *A. festuca*, *A. dertonensis*, *A. geniculata*, *Gaudinia fragilis*, *Brachypodium distachyum*, *Triticum* sp., *Hordeum* sp., *Lolium multiflorum*, *Koeleria villosa*, *Lagurus ovatus*, *Cynodon dactylon*, *Hordeum bulbosum* and *Trisetum pumilum* in Rabat, Targuist, Tanger, Sidi Yahyia in Chaouia, near Casablanca, Mogador and Taroudant (Maire & Werner, 1937; El Assfoury et al., 2003).

-*Puccinia rumicis-scutati* (DC.) G. Winter (1884). N.c: *Puccinia rumicis-scutati* (DC.) G. Winter, *Pilze.* 187 (1884). Syn.: *Uredo rumicis-scutati* DC., *Encycl. Méth. Bot.* 8: 223 (1810) and *Dicaeoma rumicis-scutati* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 470 (1898). On *Rumex scultatus* var *induratus* (Rieuf, 1970). On *Rumex scutatus* (Maire & Werner, 1937; Rieuf, 1971).

-*Puccinia salviae interruptae* Maire (1937). On *Salvia interrupta* (Maire & Werner, 1937; Rieuf, 1970 et 1971).

-*Puccinia sanguinea* Dietel (1897). N.c: *Puccinia purpurea* Cooke 1876. On *Andropogon sorghum* (Rieuf, 1970).

-*Puccinia schismi* Bubák (1914). N.c: *Puccinia hordei* G.H. Oth 1871. On *Allium chamemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setiglumis*, *Koeleria pbleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970).

-*Puccinia scirpi* DC. (1805). N.c: *Puccinia scirpi* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 223 (1805). Syn.: *Dicaeoma scirpii* (DC.) Gray, *Nat. Arr. Brit. Pl.* (London) 1: 542 (1821) and *Aecidium nymphoidis* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 597 (1805). On *Scirpus lacuster* (Maire & Werner, 1937; Rieuf, 1970 et 1970; El Assfoury et al., 2003).

Puccinia scolymi P. Syd. & Syd. (1902). On *Scolymus hispanicus* (Maire & Werner, 1937; Guyot & Malençon, 1957 et 1963; Rieuf, 1970).

-*Puccinia scorodoniae* Link (1825). N.c: *Puccinia annularis* (F. Strauss) G. Winter 1881. On *Teucrium bracteatum*, *T. rupestre* and *T. tanicum* (Rieuf, 1970).

-*Puccinia scorzonerae* (Schumach.) Jacky (1899). N.c: *Puccinia scorzonerae* (Schumach.) Jacky, *Composit. Puccin.*: 54 (1899). Syn.: *Uredo scorzonerae* Schumach., *Enum. pl.* (Kjbenhavn) 2: 229 (1803) and *Puccinia scorzonericola* Tranzschel, *Annls mycol.* 2(2): 161 (1904). On *Scorzonera pygmaea* in Bou-Iblane (Maire & Werner, 1937). On *Scorzonera undulata* near Timhadit (Guyot & Malençon, 1957). On *Scorzonera pygmaea* and *Scorzonera* sp (Guyot & Malençon,

- 1963). On *Scorzonera pygmaea* and *S. undulata* (Rieuf, 1970 et Rieuf, 1971).
- Puccinia scorzonericola** Tranzschel (1904). N.c: *Puccinia scorzonerae* (Schumach.) Jacky 1899. On *Scorzonera pygmaea* and *S. undulata* (Rieuf, 1970).
- Puccinia secalina** Grove (1913). N.c: *Puccinia recondita* Dietel & Holw. 1857. On *Polypogon monspeliensis* and *Secale cereale* (Rieuf, 1970).
- Puccinia silenes** J. Schröt. (1882). N.c: *Puccinia bebenis* G.H. Otth 1871. On *Silene vulgaris* in Oujda (Maire & Werner, 1937). On *Silene cucubalus* (Rieuf, 1970).
- Puccinia silvatica** (J. Schröt.) (1879). N.c: *Puccinia dioicae* var. *silvatica* (J. Schröt.) D.M. Hend. 1961. On *Helminthia echioides*, *Carex divisa* and *C. hispida* in forest of Mamora (Maire & Werner, 1937).
- Puccinia smyrnii-olusatrici** Lindr. (1902). N.c: *Puccinia smyrnii* Biv. 1894. On *Smyrniolum olusatrum* (Rieuf, 1970 et 1971).
- Puccinia simplex** Körn. Erikss. & Henning (1894). N.c: *Puccinia hordei* G.H. Otth 1871. Byn.: *Puccinia straminis* var. *simplex* Körn. 1873. On *Hordeum bulbosum* (Unamuno, 1941).
- Puccinia smyrnii** Biv. (1894). N.c: *Puccinia smyrnii* Biv., *Ber. dt. bot. Ges.*: 87 (1894). Syn.: *Dicaeoma smyrnii* (Biv.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 470 (1898), *Aecidium bunii* var. *smyrnii-olusatrici* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 96 (1815) and *Puccinia smyrnii-olusatrici* Lindr., *Acta Soc. Fauna Flora fenn.* 22(no. 3): 9 (1902). On *Smyrniolum olusatrum* in Rabat (Maire & Werner, 1937; El Assfour et al., 2003).
- Puccinia smyrnii-olusatrici** Lindr. (1902). N.c: *Puccinia smyrnii* Biv. 1894. On *Smyrniolum olusatrum* (Unamuno, 1942^a; Rieuf, 1970).
- Puccinia sonchi** Roberge ex Desm. (1849). N.c: *Miyagia pseudosphaeria* (Mont.) Jorst. 1962. On *Sonchus* sp (Unamuno, 1940d). On *Sonchus asper* ssp. *Glaucescens*, *Sonchus* sp (Maire & Werner, 1937). On *Sonchus asper* (El Assfour et al., 2003). On *Sonchus glaucescens*, *Sonchus oleraceus* and *S. tenerrimus* (Guyot & Malençon, 1963). On *Sonchus asper* ssp. *eu-asper*, *S. asper* ssp. *glaucescens*, *S. oleraceus*, *Sonchus* sp. and *S. tenerrimus* (Rieuf, 1970; Rieuf, 1971).
- Puccinia sorghi** Schwein. (1832). N.c: *Puccinia sorghi* Schwein., *Trans. Am. phil. Soc.*, New Series 2(4): 295 (1832). Syn.: *Dicaeoma sorghi* (Schwein.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 1-576 (1898), *Puccinia maydis* Berenger, *Atti R. Acc. sc. ital.* Milano 6: 475 (1844), *Puccinia zaeae* Berenger: no. 18 (1851), *Aecidium oxalidis* Thüm. (1876) and *Tilletia epiphylla* Berk. & Broome, *Trans. Linn. Soc. London, Bot.*, Ser. 2 2: 67 (1882). On *Oxalis corniculata* and *Zea mays* (Rieuf, 1970).
- Puccinia sp.** Mazouz H. & Jlibene M. (1996). On *Triticum oasicolum* (Rieuf, 1970). On *Hordeum vulgare* (Rieuf, 1971). On *Triticum aestivum* (Mazouz & Jlibene, 1996).
- Puccinia stenotaphri** (Syd. & P. Syd.) Cummins (1945) & Cummins (1960). Syn.: *Uredo stenotaphri*, *Puccinia stenotaphri* and *P. stenotaphricola*. On *Stenotaphrum secundatum* (Rieuf, 1970). On *Stenotaphrum americanum* (Rieuf, 1971).
- Puccinia straminis** sensu auct. p.p., Fuckel (1860). N.c: *Puccinia striiformis* var. *striiformis* Westend. 1854 and *Puccinia recondita* Dietel & Holw. 1857. On *Aegilops ovata*, *Aegilops ventricosa*, *Agropyrum marginatum*, *Avena sativa*, *Bromus rigidus*, *B. squarrosus*, *Catapodium tuberculosum*, *Elymus caput-medusae*, *Hordeum hexastichum*, *Hordeum* sp., *H. vulgare*, *Lolium rigidum*, *Lolium* sp., *Secale cereale*, *Triticum oasicolum*, *T. durum* and *T. sativum* (Rieuf, 1970).
- Puccinia striiformis** Westend. On *Aegilops ovata*, *A. ventricosa*, *Agropyrum marginatum*, *Avena sativa*, *Bromus rigidus*, *B. squarrosus*, *Catapodium tuberculosum*, *Elymus caput-medusae*, *Hordeum hexastichum*, *Hordeum* sp., *H. vulgare*, *Lolium rigidum*, *Lolium* sp., *Secale cereale*, *Triticum oasicolum*, *T. durum* and *T. sativum* (Rieuf, 1970). On *Lolium rigidum*, *Lolium* sp., *Secale cereale*, *Triticum durum*, *T. oasicolum* and *T. sativum* (Rieuf, 1971). On *Triticum durum* and *T. borduem* in Chaouia (Lyamani, 1975; Jlibene, 1996). On *Triticum durum* (Mergoum, 1982).
- Puccinia symphyti-bromorum** Fr. Müll. (1901). N.c: *Puccinia recondita* Dietel & Holw. 1857. On *Bromus macrostachys* (Unamuno, 1940a). On *Anchusa italica*, *Cynoglossum creticum*, *Cynoglossum* sp., *Echium plantagineum* and *Echium* sp (Rieuf, 1970). On *Tuberculina persicina* (Rieuf, 1971).
- Puccinia tagana** Maire (1917). On *Centaurea africana* var. *tagana* in Oued Korifla and Harcha (Maire & Werner, 1937). On *Centaurea tagana* in El Harcha (Zaêrs) and Korifla (Guyot & Malençon, 1963). On *Centaurea tagana* (Rieuf, 1970).
- Puccinia taraxaci** Plowr. (1889). N.c: *Puccinia hieracii* var. *hieracii* (Röhl.) H. Mart. 1817. On *Taraxacum obovatum* (Maire & Werner, 1937; Rieuf, 1970 et 1971).
- Puccinia taraxaci obovalti** Guyot. On *Taraxacum obovatum* var. *rifeum* (Rieuf, 1970 et 1971). On *Taraxacum obovatum* var. *rifeum* in Ain Zora (Metalza) and Ourika (Guyot & Malençon, 1963).

-Puccinia terebinthi Castagne. On *Pistacia terebinthus* and *P. vera* (Rieuf, 1970). On *Cladosporium acidiicola* and *Tuberculina persicina* (Rieuf, 1971).

-Puccinia thesii (Desv.) Chaillat (1830). N.c: *Puccinia thesii* (Desv.) Chaillat, in Duby, *Bot. Gall.* (Paris) 2: 889 (1830). Syn.: *Aecidium thesii* Desv., *J. Bot.*, Paris 2: 311 (1809), *Dicaeoma thesii* (Desv.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 470 (1898), *Persooniella thesii* (Desv.) Syd., *Annls mycol.* 20(3/4): 118 (1922) and *Caeoma thesiatum* Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 45 (1825). On *Thesium divaricatum* (Maire & Werner, 1937; Rieuf, 1970 et 1971).

-Puccinia tenuanensis Guyot. On *Avena barbata* in the region of Tetouan (Guyot & Malençon, 1963). On *Avena alba* (Rieuf, 1970).

Puccinia teucrii Fuckel & Biv. (1813). On *Teucrium fruticans* (Guyot & Malençon, 1963). On *Teucrium bracteatum* and *T. fruticans* (Maire & Werner, 1937; Guyot & Malençon, 1957; Rieuf, 1970 et 1971).

-Puccinia trabutii Roum. & Sacc. (1881). On *Echium plantagineum* and *Phragmites communis* (Rieuf, 1970).

-Puccinia tragopogonis Corda (1842). N.c: *Puccinia hystereum* Röhl. 1813. On *Tragopogon porrifolius* (Rieuf, 1970).

-Puccinia triseti Erikss. (1899). N.c: *Puccinia bordei* G.H. Otth 1871. On *Trisetum panicum* (Unamuno, 1941; Rieuf, 1970 et 1971).

-Puccinia triticina Erikss. (1899). N.c: *Puccinia recondita* Dietel & Holw. 1857. Syn.: *Aecidium anchusae* Erikss. & Henning, *Syll. fung.* (Abellini) 11: 204 (1895), *Aecidium aquilegiae* Pers., *Icones Pictae Rariorum fungorum* 4: 58 (1803), *Aecidium asperifolii* Pers., *Observ. mycol.* (Lipsiae) 1: 97 (1796), *Aecidium asperifolii* Pers., *Observ. mycol.* (Lipsiae) 1: 97 (1796) var. *Asperifolii*, *Aecidium clematidis* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 243 (1805), *Aecidium hellebori* E. Fisch., *Ured. der Schweiz*: 526 (1904), *Aecidium ranunculacearum* var. *aquilegiae* Cooke, *Handb. Brit. Fungi* 2: 539 (1871), *Aecidium ranunculacearum* var. *aquilegiae-vulgaris* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 6: 97 (1815), *Aecidium ranunculacearum* var. *clematidis* Cooke, *Handb. Brit. Fungi* 2: 539 (1871), *Aecidium ranunculacearum* var. *thalictri* Cooke, *Handb. Brit. Fungi*: 540 (1871), *Aecidium thalictri* Grev., *Scott. crypt. fl.* (Edinburgh) 1: 4 (1823), *Caeoma borragineatum* Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 48 (1825), *Dicaeoma agropyrum* (Ellis & Everh.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 467 (1898), *Dicaeoma aquilegiae*

(Pers.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 466 (1898), *Dicaeoma asperifolii* (Pers.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 466 (1898), *Dicaeoma boreale* (Juel) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 468 (1898), *Dicaeoma dispersum* (Erikss. & Henning) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 468 (1898), *Dicaeoma perplexans* (Plowr.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 470 (1898), *Dicaeoma persistens* (Plowr.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 470 (1898), *Pleomeris agropyrina* (Erikss.) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Pleomeris bromina* (Erikss.) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Pleomeris dispersa* (Erikss.) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Pleomeris perplexans* (Plowr.) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Pleomeris persistens* (Plowr.) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Pleomeris triticina* (Erikss.) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Puccinia agropyri* Ellis & Everh., *J. Mycol.* 7(2): 131 (1892), *Puccinia agropyrina* Erikss., *Annls Sci. Nat., Bot.*, sér. 8 9: 273 (1899), *Puccinia agrostidis* Oudem., 1: 528 (1892), *Puccinia asperifolii* (Pers.) Wettst., (1885), *Puccinia borealis* Juel, *J. Bot.*, Lond. 51: 411 (1894), *Puccinia bromina* Erikss., *Annls Sci. Nat., Bot.*, sér. 8 9: 271 (1899), *Puccinia bromina* subsp. *symphyti-bromorum* (Fr. Müll.) Z. Urb. & J. Marková, *Acta Univ. Carol., Biol.* 43(2): 126 (1999), *Puccinia cerinthos-agropyrina* f.sp. *echii-agropyri* Gäum. & Terrier, *Ber. schweiz. bot. Ges.* 57: 244 (1947), *Puccinia dispersa* Erikss. & Henning, *Bull. Inst. bot. Univ. Belgrade* 12: 315 (1894), *Puccinia dispersa* f.sp. *tritici* Erikss. & Henning, *Z. PflKrankh. PflPath. PflSchutz* 4: 175 (1894), *Puccinia perplexans* Plowr., *Quart. J. Microscop. Sci.* 25: 164 (1885), *Puccinia perplexans* var. *triticina* (Erikss.) Z. Urb., *Česká Mykol.* 21: 16 (1967), *Puccinia persistens* Plowr., *Monograph Ured. & Ustil.*: 180 (1889), *Puccinia persistens* subsp. *agropyri* (Ellis & Everh.) J. Marková & Z. Urb., *Acta Univ. Carol., Biol.* 41(4): 353 (1998), *Puccinia persistens* subsp. *agropyrina* (Erikss.) Z. Urb. & J. Marková, in Marková, *Boln Soc. argent. Bot.* 18(1-2): 180 (1977), *Puccinia persistens* subsp. *triticina* (Erikss.) Z. Urb. & J. Marková, in Marková & Urban, *Acta Univ. Carol., Biol.* 41(4): 346 (1998), *Puccinia persistens* var. *agropyrina* (Erikss.) Z. Urb. & J. Marková, in Marková & Urban, *Acta Univ. Carol., Biol.* 41(4): 360 (1998), *Puccinia persistens* var. *borealis* (Juel) J. Marková & Z. Urb., *Acta Univ. Carol., Biol.* 41(4): 362 (1998), *Puccinia persistens* var. *triticina* (Erikss.) Z. Urb. & J. Marková, *Boln Soc. argent. Bot.* 18(1-2): 179 (1977), *Puccinia recondita* f.sp. *agropyrina* D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961), *Puccinia recondita* f.sp. *bromina* D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504



(1961), *Puccinia recondita* f.sp. *echii-agropyrina* D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961), *Puccinia recondita* f.sp. *perplexans* D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961), *Puccinia recondita* f.sp. *persistens* D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961), *Puccinia recondita* f.sp. *tritricina* D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961), *Puccinia recondita* subsp. *persistens* (Plowr.) D.M. Hend., *Notes R. bot. Gdn Edinb.* 23: 504 (1961), *Puccinia rubigo-vera* (DC.) G. Winter, *Rabenh. Krypt.-Fl.*, Edn 2 (Leipzig) 1.1: 217 (1881) [1884], *Puccinia rubigo-vera* f.sp. *agrostidis* Mains, *Pap. Mich. Acad. Sci.* 17: 352 (1933), *Puccinia rubigo-vera* f.sp. *holcina* Mains, *Pap. Mich. Acad. Sci.* 17: 381 (1933), *Puccinia rubigo-vera* f.sp. *perplexans* Mains, *Pap. Mich. Acad. Sci.* 17: 357 (1933), *Puccinia rubigo-vera* f.sp. *triseti* Mains, *Pap. Mich. Acad. Sci.* 17: 381 (1933), *Puccinia secalina* Grove, 261 (1913), *Puccinia symphyti-bromorum* Fr. Müll., *Beih. bot. Cbl.* 10: 201 (1901), *Puccinia tritricina* Erikss., *Annls Sci. Nat., Bot.*, sér. 8 9: 270 (1899), *Trichobasis rubigo-vera* (DC.) Lév., in Orbigny, *Dict. Univ. Hist. Nat.* 12: 785 [19 of extr.] (1849), *Uredo rubigo-vera* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 83 (1815) and *Uromyces rubigo-vera* (DC.) Lév., *Annls Sci. Nat., Bot.*, sér. 3 8: 371 (1847). On *Triticum* sp (Guyot & Malençon, 1963). On *Triticum sativum* (Rieuf, 1970 et 1971).

-*Puccinia (tuberosus ?)* SNS. between Azrou and Ifrane (Guyot & Malençon, 1957).

-*Puccinia urospermi* Thümen. On *Urospermum dalechampi* (Unamuno, 1940c; Rieuf, 1970 et 1971).

-*Puccinia vincae* (DC.) Plowr. (1836). N.c: *Puccinia vincae* (DC.) Plowr., in Smith, *Engl. Fl., Fungi* (Edn 2) (London) 5(2): 364 (1836). Syn.: *Uredo vincae* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 70 (1815), *Caeoma vincae* (DC.) Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 14 (1825), *Dicaeoma vincae* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 467 (1898), *Trichobasis vincae* Cooke, in Berkeley, *Outl. Brit. Fung.* (London): 332 (1860) and *Puccinia berkeleyi* Pass., *Hedwigia* 12: 143 (1873). On *Vinca difformis* in Casablanca (Maire & Werner, 1937). On *Vinca difformis* and *V. major* (Rieuf, 1970). On *Vinca difformis*, *V. major* and *V. media* (Rieuf, 1971).

Puccinia violae (Schumach.) DC. (1815). N.c: *Puccinia violae* (Schumach.) DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 62 (1815). Syn.: *Aecidium violae* Schumach., *Enum. pl.* (Kjbenhavn) 2: 224 (1803), *Dicaeoma violae* (Schumach.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 471 (1898), *Uredo violae* Schumach., *Enum. pl.*

(Kjbenhavn) 2: 233 (1803), *Puccinia violarum* Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(1): 80 (1824), *Caeoma violatum* Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 58 (1825), *Puccinia violarum* Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 80 (1825), *Trichobasis violarum* Lév., *Outl. Brit. Fung.* (London): 333 (1860), *Aecidium depauperans* Vize, *Gard. Chron.*, London 6(6): 175 (1876), *Dicaeoma depauperans* (Vize) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 466 (1898), *Puccinia aegra* Grove, *J. Bot.*, Lond. 21: 274 (1883) and *Puccinia depauperans* P. Syd. & Syd., *Monogr. Uredin.* (Lipsiae) 1(3): 442 (1903). On *Viola debnhardtii* var. *atlantica* and *V. odorata* in Ketama (Maire & Werner, 1937). On *Viola maroccana* in Azrou (Guyot & Malençon, 1957). On *Viola debnhardtii*, *V. maroccana* and *V. odorata* (Rieuf, 1970 et 1971).

-*Puccinia vulpia-myuri* Mayor & Vienn.-Bourg. (1950). N.c: *Puccinia bordei* G.H. Otth 1871. On *Allium chamemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setigulumis*, *Koeleria phleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970).

Puccinia vulpiana Guyot (1947). N.c: *Puccinia bordei* G.H. Otth 1871. On *Vulpia geniculata* in Tanaout (Guyot & Malençon, 1963). On *Allium chamemoly*, *Gaudinia fragilis*, *Holcus lanatus*, *H. setigulumis*, *Koeleria phleoides*, *K. pubescens*, *Lagurus ovatus*, *Lolium multiflorum* ssp. *italicum*, *L. rigidum*, *L. temulentum*, *Trisetum flavescens* and *Vulpia geniculata* (Rieuf, 1970).

-*Puccinia weneri* Maire (1937). On *Serratula nudicaulis* var. *transiens* (Maire & Werner, 1937; Rieuf, 1970 et 1971).

-*Puccinia withaniae* Lázaro Ibiza. On *Withania frutescens* and *W. somnifera* (Rieuf, 1970).

-*Puccinia wolgensis* Navashin (1894). On *Stipa cf. Barbata* in the Biological Station of Ifrane and *Stipa lagacae* ssp. *normalis* between Ifrane and Boulmane (Guyot & Malençon, 1957). On *Stipa barbata* (Rieuf, 1970 et 1971).

-*Puccinia xanthifolia* Ellis & Everh. (1890). On *Helianthorum annuus* (Rieuf, 1970).

-*Puccinia yveni* Rieuf (1970). On *Alyssum spinosum* (Rieuf, 1970).

-*Puccinia zaeae* Berenger (1851). N.c: *Puccinia sorghi* Schwein. 1832. On *Oxalis corniculata* and *Zea mays* (Rieuf, 1970).

-*Pucciniastrum agrimonniae* (DC.) Tranzschel (1895). N.c: *Pucciniastrum agrimonniae* (DC.) Tranzschel, *Scripta Bot. Horti Univ. Imper. Petrop.* 4:



- 301 (1895). Syn.: *Thekopsora agrimoniae* Dietel, *Hedwigia* 29: 153 (1890), *Uredo potentillarum* var. *agrimoniae-eupatoriae* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 81 (1815), *Pucciniastrum agrimoniae-eupatoriae* (DC.) Tranzschel, *Tromso Mus. Aarsb.* 17: 92 (1895), *Caeoma agrimoniae* Schwein., *Syn. Fung. Amer. bor.*: 291, no. 2835 (1832), *Uredo agrimoniae* (DC.) J. Schröt., *J. Bot.*, Lond. 3-1(3): 374 (1887) and *Coleosporium ochraceum* Bonord., *Kenntnis Gattungen Coniomyceten und Cryptomyceten* (Halle): 20 (1860). On *Agrimonia eupatoria* (Rieuf, 1970).
- Roestelia atlasiana** Guyot and Malençon (1963). N.c: *Roestelia atlasiana* Guyot & Malençon, *Trav. Inst. Sci. Chérifien*, Sér. Bot. Biol. Veg. 28: 119 (1963). On *Crataegus oxyacantha* in Michliffen near Ifrane and Bab er Rouida (near Chaouen) (Guyot & Malençon, 1963).
- Uredo adiantum-capilli-veneris** DC. N.c: *Hyalopsora adiantum-capilli-veneris* (DC.) Syd. 1903. Syn.: *Uredo adiantum-capilli-veneris* DC. On *Adiantum capillus-veneris* (Unamuno, 1942b; Rieuf, 1970).
- Uredo andropogonis-hirti** Maire (1905). N.c: *Puccinia purpurea* Cooke, *Grevillea* 5(no. 33): 15 (1876). Syn.: *Dicaeoma prunicolor* (Syd., P. Syd. & E.J. Butler) Syd., *Annls mycol.* 20(3/4): 118 (1922), *Dicaeoma purpureum* (Cooke) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 1-576 (1898), *Puccinia andropogonis-hirti* (Maire) Beltrán, *Mém. de le Real Soc. Española Hist. Nat.* 50: 252 (1921), *Puccinia prunicolor* Syd., P. Syd. & E.J. Butler, *Annls mycol.* 4(5): 435 (1906), *Puccinia sanguinea* Dietel, (1897), *Puccinia sorghi-balepensis* (Pat.) Speg., *Anal. Mus. nac. Hist. nat. B. Aires* 26: 120 (1914), *Uredo andropogonis-hirti* Maire, *Cryptog. Mycol.* 20: 162 (1905), *Uredo sorghi* Fuckel, in Thümen and *Uredo sorghi-balepensis* Pat., *Cryptog. Mycol.* 19: 253 (1903). On *Andropogon hirtus* (Rieuf, 1970).
- Uredo asparagi** Lasch (1848). N.c: *Puccinia asparagi* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 595 (1805). Syn.: *Aecidium asparagi* Lasch, (1848), *Dicaeoma asparagi* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 1-576 (1898), *Persooniella asparagi* (DC.) Syd., *Annls mycol.* 20(3/4): 118 (1922), *Puccinia discoidearum* var. *asparagi* (DC.) Wallr., (1833) and *Uredo asparagi* Lasch, (1848). On *Asparagus officinalis* (Rieuf, 1970).
- Uredo betae-patellaris** Guyot & Malençon (1957). On *Beta patellaris* (Guyot & Malençon, 1963). On *Beta patellaris* var. *eu-patellaris* (Rieuf, 1970).
- Uredo caries** DC. (1815). N.c: *Tilletia caries* (DC.) Tul. & C. Tul. 1847. Syn.: *Fusisporium inosculans* Berk., *J. hort. Soc.*, London 2: 114 (1847), *Lycoperdon tritici* Bjerck., *K. svenska Vetensk-Akad. Handl.* 36: 326 (1775), *Tilletia tritici* (Bjerck.) G. Winter, *Die Brand des Getreide:* 13 (1874) and *Uredo caries* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 78 (1815). On *Triticum durum* et *Triticum sativum* (Rieuf, 1970).
- Uredo cyperi-kallii** Guyot & Malençon (1957). On *Cyperus kallii* (Rieuf, 1970).
- Uredo evonymi** Rieuf (1970). On *Salix pedicellata* (Rieuf, 1970).
- Uredo fabae** Pers. (1794) & DC. (1806). N.c: *Uromyces viciae-fabae* var. *viciae-fabae* (Pers.) J. Schröt. 1875. Syn.: *Caeoma appendiculatum* Schlttdl., *Linnaea* 1: 607 (1826), *Caeoma leguminosarum* Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 34 (1825), *Caeomurus fabae* (Pers.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898), *Capitularia fabae* (Pers.) Syd., *Annls mycol.* 20(3/4): 123 (1922), *Nigredo fabae* (Pers.) Arthur, *N. Amer. Fl.* (New York) 7(4): 251 (1920), *Puccinia fabae* Grev., *Scott. crypt. fl.* (Edinburgh) 1: pl. 29 (1823), *Puccinia fabae* Link, *Puccinia fallens* Cooke, *J. Bot.*, Lond. 4: 105 (1866), *Puccinia globosa* Grev., *Fl. Edin.*: 343 (1824), *Trichobasis fabae* (Pers.) Lév., in Orbigny, *Dict. Univ. Hist. Nat.* 12: 785 [19 of extr.] (1849), *Uredo fabae* Pers., *Neues Mag. Bot.* 1: 93 (1794), *Uredo fabae* DC.,: 47 (1806), *Uredo viciae-fabae* Pers., *Syn. meth. fung.* (Göttingen) 1: 221 (1801), *Uromyces fabae* (Pers.) de Bary, *Grevillea* 7(no. 44): 135 (1879) and *Uromyces viciae* Fuckel, *Jb. nassau. Ver. Naturk.* 23-24: 62 (1870) [1869-70]. On *Lathyrus cicera*, *Lens esculenta* and *Pisum arvense* (Rieuf, 1970). On *Vicia faba*, *V. onobruchoioides*, *V. peregrina*, *V. sativa* and *V. villosa* (Rieuf, 1970 et Rieuf, 1971).
- Uredo fici** Castagne (1848). N.c: *Cerotelium fici* (Castagne) Arthur 1917. Syn.: *Kuehneola fici* E.J. Butler, *Annls mycol.* 12(2): 79 (1914), *Malupa fici* (Castagne) Buriticá, *Revta ICNE, Instit. Cienc. Nat. Ecol.* 5(2): 175 (1994), *Phakopsora fici* Nish. {?}, *Phakopsora nishidana* S. Ito, *Trans. Sapporo nat. Hist. Soc.* 15: 117 (1938), *Physopella fici* (Castagne) Arthur, *Résult. Sci. Congr. Bot. Wien 1905:* 338 (1906) [1905] and *Uredo fici* Castagne, *Pl. Crypt. Nord France*, 3 Edn fasc. 34: no. 1662 (1848). On *Ficus retusa* (Rieuf, 1970).
- Uredo glumarum** Roberge & Schumach. (1827). N.c: *Puccinia striiformis* var. *striiformis* Westend. 1854. Syn.: *Dicaeoma glumarum* (Erikss. & Henning) Arthur & Fromme, *N. Amer. Fl.* (New York) 7(4-5): 338 (1920), *Puccinia glumarum* Erikss. & Henning, *Z. PflKrankb. PflPath. PflSchutz* 4: 197 (1894), *Puccinia tritici* Oerst., *Om. Sygd. bos planterne:* 93 (1863),

Trichobasis glumarum (Roberge) Lév., in Orbigny, *Dict. Univ. Hist. Nat.* 12: 785 [19 of extr.] (1849), *Uredo glumarum* Schumach. (1827) and *Uredo glumarum* Roberge, in Desmazières. On *Lolium rigidum* and *Lolium* sp (Rieuf, 1971).

-Uredo isiacae Von Thüm. On *Echium plantagineum* and *Phragmites communis* (Rieuf, 1970).

-Uredo lamarckia Kleb., Caball. & Gonz. Frag. (1920). On *Lamarckia aurea* (Rieuf, 1970; Unamuno, 1941).

-Uredo maydis DC. (1815). N.c: *Ustilago maydis* (DC.) Corda 1842. Syn.: *Caecoma zaeae* Link, Willd., *Sp. pl.*, Edn 4 6(2): 2 (1825), *Erysibe maydis* (DC.) Wallr., *Fl. crypt. Germ.* (Nürnberg) 2: 215 (1833), *Lycoperdon zaeae* Beckm., *Hanover. Mag.* 6: 1330 (1768), *Uredo maydis* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 77 (1815), *Uredo segetum* ? *zaeae-maydis* DC. [as 'zæa-mays'], *Encycl. Méth. Bot.* 8: 227 (1808), *Uredo segetum* ? *mays-zæae* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 596 (1805), *Uredo zæae* Schwein., *Schr. naturf. Ges. Leipzig* 1: 71 (1822), *Uredo zæae* Desm., *Annls Sci. Nat., Bot.*, sér. 2 13: 182 (1840), *Uredo zæae-maydis* DC. [as 'zæae-mays']; 47, *Ustilago euchlaenae* Arcang., *Erb. critt. Ital.*, Ser. 2, fasc.: no. 1152 (1882), *Ustilago mays-zæae* (DC.) Magnus, *Verh. bot. Ver. Prov. Brandenb.* 37: 72 (1896) [1895], *Ustilago zæae* (Link) Unger, *Über den Einfluss des Bodens auf die Vertheilung der Gewächse*: 211 (1836) and *Ustilago zæae-maydis* (DC.) G. Winter [as 'zæae-mays'], *Rabenh. Krypt.-Fl.*, Edn 2 (Leipzig) 1.1: 97 (1880) [1884]. On *Zea mays* (Rieuf, 1970).

-Uredo menthae Pers. (1801). On *Mentha longifolia*, *M. piperita*, *M. rotundifolia*, *M. sativa*, *Satureja atlantica*, *S. calminatha* ssp. *ascendens*, *S. calmintha* var. *calminthoide*, *S. grandiflora* var. *baborensis*, *S. rotundifolia*, *Satureja* sp., *S. vulgaris* and *S. vulgaris* ssp. *villosa* (Rieuf, 1970).

-Uredo oxalidis Lév. (1841). On *Oxalidis corniculata* (Unamuno, 1942b; Rieuf, 1970 et 1971).

-Uredo pisi-sativi Pers. (1801). N.c: *Uromyces pisi-sativi* (Pers.) Liro 1908. Syn.: *Aecidium euphorbiae* Pers., in Gmelin, *Systema Naturae*, Edn 13 2(2): 1472 (1792), *Aecidium euphorbiarum* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 6: 91 (1815), *Caecoma euphorbiae* (J.F. Gmel.) Nees, *Syst. Pilze* (Würzburg): 13, tab. 1:3 (1816) [1816-17], *Caecoma euphorbiatum* Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 61 (1825), *Caecomurus astragali* (Opiz) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 449 (1898), *Caecomurus phacae* (Thüm.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898), *Caecomurus pisi* (Gray) Kuntze, *Revis. gen. pl.*

(Leipzig) 3: 449 (1898), *Caecomurus pisi* (DC.) Gray, *Nat. Arr. Brit. Pl.* (London) 1: 541 (1821), *Dicaeoma loti* (Kirchn.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 469 (1898), *Nigredo punctata* (J. Schröt.) Arthur, *N. Amer. Fl.* (New York) 7(4): 253 (1920), *Puccinia laburni* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 224 (1805), *Puccinia loti* Kirchn., *Lotos* 6: 181 (1856), *Puccinia pisi* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 224 (1805), *Uredo appendiculata* β *psii* Pers., *Observ. mycol.* (Lipsiae) 1: 17 (1796), *Uredo appendiculata* β *psii-sativi* Pers., *Syn. meth. fung.* (Göttingen) 1: 222 (1801), *Uredo appendiculata* ? *genistae-tinctoriae* Pers., *Syn. meth. fung.* (Göttingen) 1: 222 (1801), *Uredo astragali* Opiz, *Uredo onobrychidis* Desm., *Catal. des plantes omis*: 25 (1823), *Uredo pisi-sativi* Pers., *Syn. meth. fung.* (Göttingen): 1-706 (1801), *Uromyces astragali* (Opiz) Sacc., *Mycotheca veneti*: no. 208 (1873), *Uromyces euphorbiae-astragali* Jordi, *Zentbl. Bakt. ParasitKde*, Abt. II 11: 790 (1904), *Uromyces euphorbiae-corniculatae* Jordi, *Zentbl. Bakt. ParasitKde*, Abt. II 11: 791 (1904), *Uromyces genistae-tinctoriae* (Pers.) Fuckel ex G. Winter, *Pilze Deutschl.*: 146 (1884), *Uromyces genistae-tinctoriae* f. *anglicae* MacDon., *Trans. Br. mycol. Soc.* 29(1): 67 (1946), *Uromyces genistae-tinctoriae* f. *scoparii* MacDon., *Trans. Br. mycol. Soc.* 29(1): 67 (1946), *Uromyces genistae-tinctoriae* f. *ulicis* MacDon., *Trans. Br. mycol. Soc.* 29(1): 67 (1946), *Uromyces laburni* (DC.) G.H. Otth, *Mitt. naturf. Ges. Bern*: 87 (1863), *Uromyces laburni* Fuckel, *Jb. nassau. Ver. Naturk.* 23-24: 62 (1870) [1869-70], *Uromyces lathyri* Fuckel, *Uromyces loti* A. Blytt, *Skr. Christiana Vidensk.-Selsk. Forhandl.* 6(6): 37 (1896), *Uromyces onobrychidis* (Desm.) Lév., *Annls Sci. Nat., Bot.*, sér. 3 8: 371 (1847), *Uromyces phacae* Thüm., *Bull. Soc. Imp. nat. Moscou* 53: 218 (1878), *Uromyces pisi* (Pers.) de Bary, *Mitt. naturf. Ges. Bern*: 87 (1863), *Uromyces pisi* (DC.) G.H. Otth, *Mitt. naturf. Ges. Bern*: 87 (1864) [1863], *Uromyces punctatus* J. Schröt., *Abh. Schles. Ges. Vaterl. Kult. Abth. Naturwiss.* 48: 10 (1870) and *Uromyces striatus* var. *loti* (A. Blytt) Arthur, *Manual of the Rusts in the United States & Canada*: 300 (1934). On *Euphorbia characias*, *E. nicaeensis*, *Lathyrus odoratus*, *Vicia* sp. and *Pisum sativum* (Rieuf, 1970).

-Uredo quercus Brond. (1830). N.c: *Cronartium quercuum* (Berk.) Miyabe ex Shirai 1899. Syn.: *Aecidium giganteum* Mayr, (1890), *Cronartium asclepiadeum* var. *quercuum* Berk. [as 'quercium'], *Grevillea* 3(no. 26): 59 (1874), *Cronartium cerebrum* (Peck) Hedgc. & Long.; 247 (1914), *Cronartium fusiforme* Hedgc. & N.R. Hunt ex Cummins, *Mycologia* 48(4): 603 (1956), *Cronartium fusiforme* Hedgc. & N.R.



Hunt, *Phytopathology* 8: 316 (1918), *Cronartium quercus* (Brond.) J. Schröt. ex Arthur, *N. Amer. Fl.* (New York) 7(2): 122 (1907), *Dicaeoma quercus* (G.H. Otth) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 470 (1898), *Melampsora quercus* (Brond.) J. Schröt., *Michelia* 2(no. 7): 308 (1881), *Peridermium cerebrum* Peck, *Bull. Buffalo Soc. nat. Sci.* 1: 68 (1873), *Peridermium fusiforme* Arthur & F. Kern, *Bull. Torrey bot. Club* 33: 421 (1906), *Peridermium giganteum* (Mayr) Tubeuf, (1895), *Peridermium mexicanum* Arthur & F. Kern, *Bull. Torrey bot. Club* 33: 422 (1906), *Puccinia quercus* (Brond.) G.H. Otth, *Uredo quercus* Brond., in Duby, *Bot. Gall.* (Paris) 2: 893 (1830) and *Uromyces quercus* (Brond.) Lév., *Annls Sci. Nat., Bot., sér.* 3 8: 376 (1847). On *Quercus rotundifolia* and *Quercus suber* (Rieuf, 1970 et 1971).

-Uredo ravennae Maire (1917). On *Saccharum ravennae* in Mogador, Taoudant and Oued Issen (Maire & Werner, 1937). On *Saccharum ravennae* (Rieuf, 1970 et 1971).

-Uredo ricini Biv. (1815). N.c: *Melampsora euphorbiae* (Ficinus & C. Schub.) Castagne 1843. Syn.: *Lecythea euphorbiae* Lév., *Annls Sci. Nat., Bot., sér.* 3 8: 374 (1847), *Melampsora euphorbiae* var. *euphorbiae-dulcis* (G.H. Otth) U. Braun, *Feddes Repert. Spec. Nov. Regni Veg.* 93(3-4): 233 (1982), *Melampsora euphorbiae-cyparissiae* W. Muell., *Zentbl. Bakt. ParasitKde, Abt. II:* 553 (1907), *Melampsora euphorbiae-gerardiana* W. Muell., *Zentbl. Bakt. ParasitKde, Abt. II* 2: 548 (1907), *Melampsora gelmii* Bres., *Boll. Soc. bot. ital.* 4: 75 (1897), *Melampsora helioscopiae* (Pers.) G. Winter, *Rabenh. Krypt.-Fl., Edn 2* (Leipzig) 1.1: 240 (1881) [1884], *Melampsora ricini* Pass. ex E.A. Noronha, *Agron. lusit.* 14: 229 & 242 (1952), *Melampsora ricini* Pass., *Erb. critt. Ital., Ser. 2, fasc.: no.* 684 (1873), *Melamporella ricini* (Biv.) De Toni, in Berlese, De Toni & Fischer, *Syll. fung.* (Abellini) 7: 596 (1898), *Physonema ricini* (Biv.) Lév., *Annls Sci. Nat., Bot., sér.* 3 8: 374 (1847), *Rhizisma euphorbiae* Ficinus & C. Schub., *Fl. Geg. Dresd.* 2: 310 (1823), *Uredo euphorbiae* (C. Schub.) Castagne, *Uredo euphorbiae-helioscopiae* Pers., *Syn. meth. fung.* (Göttingen) 1: 215 (1801), *Uredo euphorbiae-helioscopiae* Pers., *Syn. meth. fung.* (Göttingen) 1: 215 (1801) var. *euphorbiae-helioscopiae*, *Uredo helioscopiae* Pers., *Tent. disp. meth. fung.* (Lipsiae): 13 (1797), *Uredo ricini* Biv., (1815) and *Xyloma euphorbiae* Ficinus & C. Schub., *Fl. Geg. Dresd.* 2: 310 (1823). On *Ricinus communis* (Maire & Werner, 1937; Unamuno, 1940a; Rieuf, 1970).

-Uredo segetum f. avenae Persoon. On *Arrhenatherum elatius*, *Avena alba*, *A. algeriensis*, *A. Longissima*, *A. Sativa* and *A. Sterilis* (Rieuf, 1970).

-Uredo segetum-hordei Pers. (1801). On *Avena sativa*, *Hordeum hexastichum* and *H. vulgare* (Rieuf, 1970).

-Uredo segetum mays-zea DC. N.c: *Ustilago maydis* (DC.) Corda 1842. On *Avena sativa*, *Hordeum hexastichum* and *H. vulgare* (Rieuf, 1970).

-Uredo setariae-italicae Dietel 1903. On *Setaria perticillata* in Casablanca (Maire & Werner, 1937).

-Uredo sorghi Fuckel. N.c: *Puccinia purpurea* Cooke 1876. Syn.: *Dicaeoma prunicolor* (Syd., P. Syd. & E.J. Butler) Syd., *Annls mycol.* 20(3/4): 118 (1922), *Dicaeoma purpureum* (Cooke) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 1-576 (1898), *Puccinia andropogonis-hirti* (Maire) Beltrán, *Mém. de le Real Soc. Española Hist. Nat.* 50: 252 (1921), *Puccinia prunicolor* Syd., P. Syd. & E.J. Butler, *Annls mycol.* 4(5): 435 (1906), *Puccinia sanguinea* Dietel, (1897), *Puccinia sorghi-halepensis* (Pat.) Speg., *Anal. Mus. nac. Hist. nat. B. Aires* 26: 120 (1914), *Uredo andropogonis-hirti* Maire, *Cryptog. Mycol.* 20: 162 (1905), *Uredo sorghi* Fuckel, in Thümen and *Uredo sorghi-halepensis* Pat., *Cryptog. Mycol.* 19: 253 (1903). On *Andropogon sorghum* (Rieuf, 1970).

-Uredo sorghi-halepensis Pat. (1903). N.c: *Puccinia purpurea* Cooke 1876. Syn.: *Dicaeoma prunicolor* (Syd., P. Syd. & E.J. Butler) Syd., *Annls mycol.* 20(3/4): 118 (1922), *Dicaeoma purpureum* (Cooke) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 1-576 (1898), *Puccinia andropogonis-hirti* (Maire) Beltrán, *Mém. de le Real Soc. Española Hist. Nat.* 50: 252 (1921), *Puccinia prunicolor* Syd., P. Syd. & E.J. Butler, *Annls mycol.* 4(5): 435 (1906), *Puccinia sanguinea* Dietel, (1897), *Puccinia sorghi-halepensis* (Pat.) Speg., *Anal. Mus. nac. Hist. nat. B. Aires* 26: 120 (1914), *Uredo andropogonis-hirti* Maire, *Cryptog. Mycol.* 20: 162 (1905), *Uredo sorghi* Fuckel, in Thümen and *Uredo sorghi-halepensis* Pat., *Cryptog. Mycol.* 19: 253 (1903). On *Andropogon sorghum* (Rieuf, 1970).

-Uredo stenotaphri Syd. & P. Syd. On *Stenotaphrum secumdatum* (Rieuf, 1970). On *Stenotaphrum americanum* (Rieuf, 1971).

-Uredo terebinthi DC. (1815). N.c: *Pileolaria terebinthi* Castagne 1842. Syn.: *Caecoma terebinthi* (DC.) Link, in Willdenow, *Willd., Sp. pl., Edn 4* 6(2): 35 (1825), *Caecomurus terebinthi* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 451 (1898), *Uredo terebinthi* DC., in de Candolle & Lamarck, *Fl. franç., Edn 3* (Paris) 6: 71 (1815) and *Uromyces terebinthi* (DC.) G. Winter, *Arch.*



Bot. Listern.: 147 (1884). On *Pistacia terebinthus* and *Pistacia vera* (Rieuf, 1970).

-Uredo susica Maire 1937. On *Andropogonis annulati* in Oued Issen (Maire & Werner, 1937).

-Uredo zollikoferiae Pat. On *Launaea nudicaulis* and *Launaea resedifolia* (Rieuf, 1970).

-Uromyces acetosae J. Schröt. (1876). N.c: *Uromyces acetosae* J. Schröt., in Rabenhorst, *Fungi europ. exsicc.*: no. 2080 (1876). Syn.: *Caenomurus acetosae* (J. Schröt.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 449 (1898). On *Rumex acetosella* and *Rumex* sp (Maire & Werner, 1937). On *Rumex acetosae*, *Rumex acetosella* and *Rumex* sp (Rieuf, 1970 et 1971).

-Uromyces ambiguus (DC.) Lévl. (1847). N.c: *Puccinia allii* (DC.) F. Rudolphi 1829. Byn.: *Uredo ambigua* DC., in de Candolle & Lamarck 1815. On *Allium album*, *A. ampeloprasum*, *A. cepa*, *A. paniculatum*, *A. roseum*, *A. sativum*, *A. sphaerocephalum* and *A. vineale* (Rieuf, 1970).

-Uromyces anagyridis Roum. (1880). N.c: *Uromyces anagyridis* Roum., *Fungi Selecti Galliae* Exs.: no. 743 (1880). Syn.: *Caenomurus anagyridis* (Roum.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 449 (1898). On *Anagyris foetida* (Maire & Werner, 1937; Rieuf, 1970).

Uromyces anthyllidis (Grev.) J. Shroeter (1875). N.c: *Uromyces anthyllidis* (Grev.) J. Schröt., *Hedwigia* 14: 162 (1875). Syn.: *Uredo anthyllidis* Grev., in Smith, *Engl. Fl.*, *Fungi* (Edn 2) (London) 5(2): 383 (1836), *Caenomurus anthyllidis* (Grev.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 449 (1898), *Uromyces jaapianus* Kleb., *Krypt.-Fl. Brandenburg* (Leipzig) 5a: 239 (1914) and *Uromyces hippocrepidis* Mayor, *Società degli Alpinisti Tridentini* 45: 40 (1921). On *Anthyllis cytisoides*, *A. tetraphylla*, *A. vulneraria*, *Benedictella benoistii*, *Hippocrepis ciliata*, *H. multisiliquosa*, *Hedysarum membranaceum*, *Lotus arenarius*, *L. assakensis*, *L. commutatus*, *L. edulis*, *L. maroccanus*, *L. ornithopodioides*, *Tetragonolobus purpureus* and *Trifolium campestre* (Maire & Werner, 1937). On *Lotus edulis* in Tétouan (Unamuno, 1940a et 1940c). On *Anthyllis tetraphylla*, *Hippocrepis minor*, *H. multisiliquosa*, *Lotus americanus*, *L. arenarius*, *Lotus* sp., *Medicago laciniata* and *Trigonella polycerata* (Guyot & Malençon, 1957). On *Anthyllis tetraphylla*, *Lotus maroccanus*, *Lotus* sp., *Medicago* sp., *Melilotus sulcata* and *Trifolium campestre* (Guyot & Malençon, 1963). On *Anthyllis cytisoides*, *A. tetraphylla*, *A. vulneraria*, *Benedictella benoistii*, *Hedysarum membranaceum*, *Hippocrepis ciliata*, *H. minor*, *H. multisiliquosa*, *Lotus americanus*, *L. arenarius*, *L. assakensis*, *L. commutatus*, *L. edulis*, *L. maroccanus*, *L. ornithopodioides*, *L. salzmannii*, *Lupinus albus*, *L. luteus*,

Medicago laciniata, *Melilotus sulcata*, *Tetragonolobus purpureus*, *Trifolium campestre*, *Trigonella foenum-graecum* and *T. polycerata* (Rieuf, 1970). On *Lotus americanus*, *L. arenarius*, *L. assakensis*, *L. commutatus*, *L. edulis*, *L. maroccanus*, *L. ornithopodioides*, *L. salzmannii*, *Lupinus albus*, *L. luteus*, *Medicago laciniata*, *Melilotus sulcata*, *Tetragonolobus purpureus*, *Trifolium campestre* and *Trigonella foenum-graecum* (Rieuf, 1971).

-Uromyces appendiculatus (Pers.) Link (1833). N.c: *Uromyces appendiculatus* F. Strauss 1833. Byn.: *Uredo appendiculata* Pers. 1796. On *Phaseolus vulgaris* in Ceuta and Doukkala (Maire & Werner, 1937; Unamuno, 1940a et 1940c; Rieuf, 1970 et 1971).

-Uromyces armeriae (Schltdl.) Lévl. (1847). N.c: *Uromyces armeriae* (Schltdl.) Lévl., *Annls Sci. Nat., Bot.*, sér. 3 8: 375 (1847). Syn.: *Caecoma armeriae* Schltdl., *Fl. berol.* (Berlin) 2: 126 (1824), *Nigredo armeriae* (Schltdl.) Arthur, *N. Amer. Fl.* (New York) 7(11): 768 (1926), *Uromyces limonii* sensu Plowright (Monog. Brit. Ured. p. 122); fide Checklist of Basidiomycota of Great Britain and Ireland (2005) and *Uredo staites* sensu auct.; fide Checklist of Basidiomycota of Great Britain and Ireland (2005). On *Armeria* sp in Oukaimeden (Guyot & Malençon, 1963). On *Statice alliacea* and *Statice plantaginea* (Maire & Werner, 1937; Rieuf, 1970). On *Statice plantaginea* (Rieuf, 1971).

-Uromyces astragali (Opiz) Sacc. (1873). N.c: *Uromyces pisi-sativi* (Pers.) Liro 1908. Byn.: *Uredo astragali* Opiz. On *Astragalus atlanticus* (Maire & Werner, 1937; Rieuf, 1970).

-Uromyces atlanticus Guyot & Malençon (1957). On *Hippocrepis scabra* near Ifrane (Guyot & Malençon, 1957). On *Hippocrepis scabra* (Rieuf, 1970).

-Uromyces baeumlerianus Bubák (1908). On *Melilotus sulcata* (Rieuf, 1970).

-Uromyces bebenis (DC.) Unger (1836). N.c: *Uromyces bebenis* (DC.) Unger, *Einfluss des Bodenstc.*: 216 (1836). Syn.: *Uredo bebenis* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 63 (1815) and *Caenomurus bebenis* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 449 (1898). On *Silene* sp., *Silene vulgaris* and *Silene beben* (Maire & Werner, 1937). On *Silene cucubalus* near Taferiat (Guyot & Malençon, 1963). On *Silene colorata* and *S. bebenis* (Rieuf, 1970). On *Silene armeria*, *S. bebenis* and *S. cucubalus* (Rieuf, 1970 et 1971).

-Uromyces betae (Pers.) J. G. Kühn. (1867). N.c: *Uromyces beticola* (Belynyck) Boerema, Loer. & Hamers 1987. Byn.: *Uredo betae* Pers. 1801. On *Beta vulgaris* and *Beta patellaris* in Casablanca (Maire &



Werner, 1937). On *Beta cicla*, *B. patellaris* var. *eu-patellaris* and *B. vulgaris* (Rieuf, 1970).

-*Uromyces bupleuri* Magnus (1899). On *Bupleurum spinosum* (Maire & Werner, 1937; Guyot & Malençon, 1957, Rieuf, 1970).

-*Uromyces cachrydis* Har. (1900). On *Cachrys pterochlaena* (Guyot & Malençon, 1963; Rieuf, 1970; El Assfour et al., 2003).

Uromyces caryophyllinus (Schrank) J. Schröt. (1884). N.c: *Uromyces dianthi* (Pers.) Niessl 1872. Byn.: *Lycoperdon caryophyllum* Schrank 1789. On *Dianthus prolifer* between Ifrane and Azrou (Guyot & Malençon, 1957). On *Dianthus caryophyllus* in Biological station of Ifrane and in the region of Timahadit (Guyot & Malençon, 1963). On *Dianthus caryophyllus*, *Dianthus prolifer* and *Dianthus* sp (Rieuf, 1970).

Uromyces chenopodii (Duby) J. Schröt. (1880). N.c: *Uromyces chenopodii* (Duby) J. Schröt., in Kunze, *Fung. sel. exs.*: no. 214 (1880). Syn.: *Uredo chenopodii* Duby, *Bot. Gall.*, Edn 2 (Paris) 2: 899 (1830), *Caenomurus chenopodii* (Duby) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 449 (1898) and *Capitularia chenopodii* (Duby) Syd., *Annls mycol.* 20(3/4): 123 (1922). On *Suaeda splendens* (Unamuno, 1940c). On *Suaeda splendens* and *Suaeda fruticosa* (Rieuf, 1970). On *Suaeda fruticosa* in Safi and Marrakech (Maire & Werner, 1937; Guyot & Malençon, 1963). On *Silene fruticosa* and *S. splendens* (Rieuf, 1971).

-*Uromyces ciceris-arietini* (Grognot) Jacz. & Boyd (1894). N.c: *Uromyces ciceris-arietini* (Grognot) Jacz. & G. Boyer [as '*ciceris-arietini*'], *Ann. Jard. Bot. Buitenzorg.* 19 (1894). Syn.: *Uredo ciceris-arietini* Grognot, (1863) and *Caenomurus ciceris-arietini* (Grognot) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 449 (1898). On *Cicer arietinum* (Maire & Werner, 1937; Rieuf, 1970; El Assfour et al., 2003).

-*Uromyces dactylidis* (1861) Oth. N.c: *Uromyces dactylidis* G.H. Oth, *Mitt. naturf. Ges. Bern.* 85 (1861). Syn.: *Nielsenia dactylidis* (G.H. Oth) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Nigredo dactylidis* (G.H. Oth) Arthur, *N. Amer. Fl.* (New York) 7(11): 750 (1926), *Aecidium lycocotoni* Kalchbr., *Uromyces lycocotoni* (Kalchbr.) Trotter, *Fl. ital. crypt.* 1: 64 (1908), *Aecidium ranunculacearum* sensu De Candolle [Fl. Fr. 5: 97 (1815)] p.p., *Aecidium calthae* sensu Berkeley & Broome [Ann. Mag. Nat. Hist., Ser. 17, 4: 141 (1876)]; fide Checklist of Basidiomycota of Great Britain and Ireland (2005), *Aecidium ficariae* Pers., *Observ. mycol.* (Lipsiae) 2: 23 (1800), *Aecidium ranunculacearum* DC., in de Candolle & Lamarck, *Fl.*

franç., Edn 3 (Paris) 5/6: 97 (1815), *Uredo lycocotoni* Kalchbr., *Math. Természettud. Közl. Magg. Tudom. Akad.* 3: 306 (1865), *Uromyces poae* Rabenh., *Unio Itineraria.* 38 (1866), *Nigredo poae* (Rabenh.) Arthur, *N. Amer. Fl.* (New York) 7(4): 229 (1920), *Nielsenia poae* (Rabenh.) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Uromyces dactylidis* var. *poae* (Rabenh.) Cummins, *J. Bot.*, Lond.: 266 (1974), *Uromyces graminum* Cooke, *Handb. Brit. Fungi* 2: 520 (1871), *Uromyces festucae* Syd. & P. Syd., *Hedvigia* 39: 117 (1900), *Nielsenia festucae* (Syd. & P. Syd.) Syd., *Annls mycol.* 19(1/2): 171 (1921), *Uromyces dactylidis* var. *festucae* (Syd. & P. Syd.) Grove, *J. Bot.*, Lond. 72: 266 (1934), *Uromyces ranunculi-festucae* Jaap, *Verh. bot. Ver. Prov. Brandenb.* 47: 90 (1905) and *Nielsenia ranunculi-festucae* (Jaap) Syd., *Annls mycol.* 19(1/2): 171 (1921). On *Dactylis glomerata* var. *hispanica* in Casablanca (Maire & Werner, 1937). On *Dactylis glomerata* and *D. hispanica* in Ceuta (Unamuno, 1941). On *Dactylis glomerata* (Guyot & Malençon, 1957). On *Dactylis hispanica* (Guyot & Malençon, 1963).

-*Uromyces dianthi* (Pers.) Niessl. On *Dianthus caryophyllinus*, *D. gadilanus* and *Tunica prolifera* in Ifrane (Maire & Werner, 1937).

-*Uromyces ducellieri* Maire (1917). On *Anabasis aphylla* in Taourirt (Maire & Werner, 1937). On *Dactylis glomerata*, *D. hispanica* and *Anabasis aphylla* (Rieuf, 1970).

-*Uromyces durus* Dietel (1907). N.c: *Puccinia allii* (DC.) F. Rudolphi 1829. On *Allium album*, *A. ampeloprasum*, *A. cepa*, *A. paniculatum*, *A. roseum*, *A. sativum*, *A. sphaerocephalum* and *A. vineale* (Rieuf, 1970).

-*Uromyces ervi* (Wallr.) Westend. (1854). N.c: *Uromyces ervi* (Wallr.) Westend., *Bull. Acad. R. Sci. Belg.*, Cl. Sci., sér. 5 21(2): 246 (1854). Syn.: *Aecidium ervi* Wallr., *Fl. crypt. Germ.* (Nürnberg) 2: 247 (1833), *Caenomurus ervi* (Wallr.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898) and *Capitularia ervi* (Wallr.) Syd., *Annls mycol.* 20(3/4): 123 (1922). On *Lens culinaris* in Fes, Sefrou, Oujda, Berkane and Casablanca (Maire & Werner, 1937). On *Lens esculenta* (Rieuf, 1970).

Uromyces fabae (Pers.) de Bary (1879). N.c: *Uromyces viciae-fabae* var. *viciae-fabae* (Pers.) J. Schröt. 1875. Syn.: *Caecoma appendiculatum* Schltdl., *Linnaea* 1: 607 (1826), *Caecoma leguminosarum* Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 34 (1825), *Caenomurus fabae* (Pers.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898), *Capitularia fabae* (Pers.) Syd., *Annls mycol.* 20(3/4): 123 (1922), *Nigredo fabae* (Pers.) Arthur, *N. Amer. Fl.* (New York) 7(4): 251 (1920),

- Puccinia fabae* Grev., *Scott. crypt. fl.* (Edinburgh) 1: pl. 29 (1823), *Puccinia fabae* Link, *Puccinia fallens* Cooke, *J. Bot.*, Lond. 4: 105 (1866), *Puccinia globosa* Grev., *Fl. Edin.*: 343 (1824), *Trichobasis fabae* (Pers.) Lév., in Orbigny, *Dict. Univ. Hist. Nat.* 12: 785 [19 of extr.] (1849), *Uredo fabae* Pers., *Neues Mag. Bot.* 1: 93 (1794), *Uredo fabae* DC.,: 47 (1806), *Uredo viciae-fabae* Pers., *Syn. meth. fung.* (Göttingen) 1: 221 (1801), *Uromyces fabae* (Pers.) de Bary, *Grevillea* 7(no. 44): 135 (1879) and *Uromyces viciae* Fuckel, *Jb. nassau. Ver. Naturk.* 23-24: 62 (1870) [1869-70]. Byn.: *Uredo fabae* Pers. 1794. On *Vicia fabae*, *Vicia onobrychioides*, *V. villosa* var. *wilczekii* and *Lathyrus cicera* (Maire & Werner, 1937). On *Faba vulgaris* (Unamuno, 1940b et 1942a). On *Pisium arvense*, *P. sativum*, *Vicia cracca* and *Lathyrus vernus* (Unamuno, 1942a). On *Vicia onobrychioides* between Ifrane and Azrou (Guyot & Malençon, 1957). On *Faba vulgaris* (Guyot & Malençon, 1963). On *Vicia fabae* (41). On *Lathyrus cicera*, *Lens esculenta*, *Pisum arvense*, *Vicia onobrychioides*, *V. peregrina*, *V. sativa* and *V. villosa* (Rieuf, 1970).
- Uromyces ferulae** Juel (1901). On *Ferula communis* var. *brevifolia* (Guyot & Malençon, 1963; Rieuf, 1970).
- Uromyces festucae** Syd. & P. Syd. (1900). N.c: *Uromyces dactylidis* G.H. Otth 1861. On *Festuca caerulea* (Guyot & Malençon, 1963; Rieuf, 1970).
- Uromyces flectens** Lagerh. (1909). N.c: *Uromyces trifolii* (R. Hedw.) Lév. 1847. On *Trifolium resupinatum* (Guyot & Malençon, 1957; Rieuf, 1970 et 1971).
- Uromyces fontii** Gonz. Frag. (1928). On *Peplis acutangula* (Maire & Werner, 1937; Rieuf, 1970 et 1971).
- Uromyces fulgens** Bubák 1907. On *Cytisus triflorus* in Harcha (Maire & Werner, 1937).
- Uromyces genistae-tinctoriae** (Pers.) Fuckel ex G. Winter (1884). N.c: *Uromyces pisi-sativi* (Pers.) Liro 1908. Byn.: *Uredo appendiculata* ? *genistae-tinctoriae* Pers. 1801. On *Cytisus triflorus* (Rieuf, 1970). On *Cytisus triflorus* in El Harcha near Oulmes (Guyot & Malençon, 1957).
- Uromyces graminis** (Niessl) Dietel (1892). N.c: *Uromyces graminis* (Niessl) Dietel, *Mittheil. d. Thüring. Botan. Ver. Neue Folge* 2: 18 (1892). Syn.: *Capitularia graminis* Niessl, in Rabenhorst, *Fungi europ. exsicc.*: no. 1191 (1868). On *Melica minuta* (Unamuno, 1941). On *Melica cupani* (Rieuf, 1970). On *Melica cupani* between Idni and Liguer (Guyot & Malençon, 1963).
- Uromyces graminis-ferulae** Maire (1921). On *Ferula communis* and *Melica ciliata* in Fes and in the forest of Mamora (Maire & Werner, 1937; El Assfour et al., 2003).
- Uromyces guerkeanus** Henn. (1893). On *Lotus edulis* and *L. ornithopodioides* (Maire & Werner, 1937; Rieuf, 1970 et 1971; El Assfour et al., 2003).
- Uromyces haussknechtii** Tranzschel (1910). On *Euphorbia clementei* (Maire & Werner, 1937; Rieuf, 1970).
- Uromyces heimerliana** Burak. On *Melica siliata* (Guyot & Malençon, 1963).
- Uromyces hippomarathri** Lindr. (1901). On *Hippomarathrum libanotis* in the forest of Mamora near Rabat (Guyot & Malençon, 1963). On *Cachrys pterochlaena* (Rieuf, 1970).
- Uromyces hippomarathricola** Sousa da Câmara (1936). On *Cachrys pterochlaena* (Rieuf, 1970).
- Uromyces laevis** Körn. (1877). N.c: *Uromyces laevis* Körn., *Hedvigia* 16: 38 (1877). On *Euphorbia nicaeensis* (Maire & Werner, 1937; Rieuf, 1970).
- Uromyces lathyri** Fuckel. N.c: *Uromyces pisi-sativi* (Pers.) Liro 1908. On *Euphorbia characias*, *E. nicaeensis*, *Lathyrus odoratus*, *Pisum sativum* and *Vicia* sp (Rieuf, 1970).
- Uromyces libycus** Trotter (1912). On *Lotus arenarius* (Maire & Werner, 1937; Rieuf, 1970 et 1971).
- Uromyces lilii** Kunze (1875) & (Link) Fuckel (1875). N.c: *Uromyces aecidiiformis* (F. Strauss) C.C. Rees 1917 and *Uromyces holwayi* Lagerh. 1889. Byn.: *Caecoma lilii* Link, in Willdenow 1825. On *Fritillaria macrocarpa*, *F. messanensis* and *F. sp* (Maire & Werner, 1937). On *Fritillaria macrocarpa* and *F. messanensis* (Rieuf, 1970).
- Uromyces limonii** sensu Plowright & (DC.) Lév. (1849). N.c: *Uromyces armeriae* (Schltdl.) Lév. 1847 and *Uromyces limonii* (DC.) Lév., in Orbigny, *Dict. Univ. Hist. Nat.* 12: 786 (1849). Syn.: *Puccinia limonii* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 595 (1805), *Caecomurus limonii* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898), *Nigredo limonii* (DC.) Arthur, *N. Amer. Fl.* (New York) 7(4): 263 (1920), *Capitularia limonii* (DC.) Syd., *Annls mycol.* 20(3/4): 123 (1922), *Uredo statures* sensu auct.; fide Checklist of Basidiomycota of Great Britain and Ireland (2005) and *Aecidium statures* Cooke, *Microscopic fungi*: 197 (1865). On *Statice sinuata* in Oued Dbib between Essaouira and Tamanar (Guyot & Malençon, 1963). On *Limonium beaumieranum*, *L. mouretii*, *L. sinuatum* and *L. thonini* (Maire & Werner, 1937; Rieuf, 1970). On *Limonium mucronatum* near Sale (Khouader et al., 2011 b).



- Uromyces linearis** Berk. & Broome (1875). N.c: *Jamesdicksonia linearis* (Berk. & Broome) Vánky 2005. On *Panicum repens* in Ceuta (Unamuno, 1941; Rieuf, 1970 et 1971). On *Panicum repens* in Rabat (Guyot & Malençon, 1963).
- Uromyces lineolatus** (Desm.) J. Schröt. (1876). N.c: *Uromyces lineolatus* (Desm.) J. Schröt., in Rabenhorst, *Fungi europ. exsicc.*: no. 2077 (1876). Syn.: *Puccinia lineolata* Desm., *Annl. Sci. Nat., Bot.*, sér. 3 11: 273 (1849), *Caecomurus lineolatus* (Desm.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898), *Aecidium glaucis* Dozy & Molk., *Tijdschr. Nat. Gesch.* Deel 12: 16 (1844), *Uromyces maritimae* Plowr., *Gard. Chron.*, London 9: 188 (1884), *Uromyces scirpi* Burrill, *Bot. Gaz.* 9: 188 (1884), *Caecomurus scirpi* (Burrill) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898), *Uromyces lineolatus f.sp. glaucis-scirpi* Jaap, *Annl. mycol.* 3(4): 397 (1905) and *Uromyces lineolatus f.sp. scirpi-oenanthi-crocati* Maire, *Compt. Rend. Congr. Natl. Soc. Savantes*, Sec. Sci., 1983: 125 (1912). On *Scirpus maritimus* (Rieuf, 1970 et 1971).
- Uromyces loti** Blytt. (1896). N.c: *Uromyces pisi-sativi* (Pers.) Liro 1908. On *Tetragonolobus purpureus* (Unamuno, 1940b; Rieuf, 1970). On *Lotus corniculatus* (Guyot & Malençon, 1957). On *Lotus corniculatus*, *L. ornithopodioides*, *L. parviflorus* and *Tetragonolobus purpureus* (Rieuf, 1970 et 1971).
- Uromyces lupinicolus** Bubark. On *Lipinus hirsutus* and *Lipinus* sp (Rieuf, 1970 et 1971). On *Lipinus hirsutus* in Souk-et-Tnin (Maire & Werner, 1937).
- Uromyces marinus** Guyot & Malençon (1957). On *Medicago marina* in Oualidia (Guyot & Malençon, 1957). On *Medicago marina* (Rieuf, 1970 et 1971).
- Uromyces medicaginis** Pass. (1872). N.c: *Uromyces striatus* J. Schröt. 1870. On *Medicago sativa* (Rieuf, 1971).
- Uromyces medicaginis – falcatae** G. Winter (1884). On *Medicago sativa* (Rieuf, 1971).
- Uromyces mogianensis** Bubák (1902). On *Fritillaria macrocarpa* (Maire & Werner, 1937; Rieuf, 1970).
- Uromyces oblongus** Vize (1877). On *Medicago sativa* (Rieuf, 1970).
- Uromyces ononidis** Pass. (1874). On *Ononis antiquorum* (Guyot & Malençon, 1957). On *Ononis antiquorum* and *O. natrix* (Maire & Werner, 1937; Rieuf, 1970 et 1971).
- Uromyces ornithogali** (Wallr.) Lév. (1847). Syn.: *Erysibe rostellata* var. *ornithogali*. On *Ornithogalum umbellatum* (Rieuf, 1970). On *Ornithogalum narbonense* (Rieuf, 1971).
- Uromyces ornithopodioides** Gonz. Frag. (1913). On *Ornithopus* sp (Gonzalez Fragoso, 1913). On *Ornithopus isthmocarpus* (Maire & Werner, 1937; Rieuf, 1970 et 1971).
- Uromyces orobi** Fuckel, (Schumach.) Lév. (1847). N.c: *Uromyces viciae-fabae* var. *orobi* (Schumach.) Jörst. 1936. Byn.: *Uredo orobi* Schumach. 1803. On *Lathyrus cicera*, *Lens esculenta*, *Pisum arvense*, *Vicia faba*, *V. onobruchioides*, *V. peregrina*, *V. sativa* and *V. villosa* (Rieuf, 1970).
- Uromyces phaseoli** G. Winter (1881). N.c: *Uromyces appendiculatus* F. Strauss 1833. On *Phaseolus vulgaris* (Rieuf, 1970).
- Uromyces phlei-micheli** Cruchet (1916). On *Pbleum phleoides* var. *blepharode* in Dayet Ahoua between Ifrane and Immouzer of Kandar (Guyot & Malençon, 1957). On *Pbleum phleoides* var. *blepharodes* (Rieuf, 1970 et 1971).
- Uromyces phyllachoroides** Henn. (1901). On *Cynosurus echinatus* (Maire & Werner, 1937; Rieuf, 1970).
- Uromyces pisi** (Pers.) de Bary (1863) & (DC.) G.H. Otth (1864). N.c: *Uromyces pisi-sativi* (Pers.) Liro 1908. Byn.: *Uredo appendiculata* β *psii* Pers. 1796 and *Puccinia pisi* DC., in Lamarck & de Candolle 1805. On *vicia* sp (Maire & Werner, 1937; Guyot & Malençon, 1957). On *Euphorbia characias*, *E. nicaeensis*, *Lathyrus odoratus*, *Pisum sativum* and *Vicia* sp (Rieuf, 1970).
- Uromyces pisi-sativi** (Pers.) Liro (1908). N.c: *Uromyces pisi-sativi* (Pers.) Liro, *Bidr. Känn. Finl. Nat. Folk* 65: 100 (1908). Syn.: *Uredo pisi-sativi* Pers., *Syn. meth. fung.* (Göttingen): 1-706 (1801), *Uromyces lathyri* Fuckel, *Uredo astragali* Opiz, *Uromyces astragali* (Opiz) Sacc., *Mycotheca veneti*: no. 208 (1873), *Caecomurus astragali* (Opiz) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 449 (1898), *Aecidium euphorbiae* Pers., in Gmelin, *Systema Naturae*, Edn 13 2(2): 1472 (1792), *Caecoma euphorbiae* (J.F. Gmel.) Nees, *Syst. Pilze* (Würzburg): 13, tab. 1:3 (1816), *Uredo appendiculata* β *psii* Pers., *Observ. mycol.* (Lipsiae) 1: 17 (1796), *Uromyces pisi* (Pers.) de Bary, *Mitt. naturf. Ges. Bern*: 87 (1863), *Caecomurus pisi* (Gray) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 449 (1898), *Uredo appendiculata ? genistae-tinctoriae* Pers., *Syn. meth. fung.* (Göttingen) 1: 222 (1801), *Uromyces genistae-tinctoriae* (Pers.) Fuckel ex G. Winter, *Pilze Deutschl.*: 146 (1884), *Uredo appendiculata* β *psii-sativi* Pers., *Syn. meth. fung.* (Göttingen) 1: 222 (1801), *Puccinia pisi* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 224 (1805), *Caecomurus pisi* (DC.) Gray, *Nat. Arr. Brit. Pl.* (London) 1: 541 (1821), *Uromyces pisi*



(DC.) G.H. Oth, *Mitt. naturf. Ges. Bern*: 87 (1864), *Puccinia laburni* DC., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 224 (1805), *Uromyces laburni* (DC.) G.H. Oth, *Mitt. naturf. Ges. Bern*: 87 (1863), *Aecidium euphorbium* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 6: 91 (1815), *Uredo onobrychidis* Desm., *Catal. des plantes omis.*: 25 (1823), *Uromyces onobrychidis* (Desm.) Lév., *Annls Sci. Nat.*, Bot., sér. 3 8: 371 (1847), *Caecoma euphorbiatum* Link, in Willdenow, *Willd., Sp. pl.*, Edn 4 6(2): 61 (1825), *Puccinia loti* Kirchn., *Lotos* 6: 181 (1856), *Dicaeoma loti* (Kirchn.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 469 (1898), *Uromyces laburni* Fuckel, *Jb. nassau. Ver. Naturk.* 23-24: 62 (1870), *Uromyces punctatus* J. Schröt., *Abb. Schles. Ges. Vaterl. Kult. Abth. Naturwiss.* 48: 10 (1870), *Nigredo punctata* (J. Schröt.) Arthur, *N. Amer. Fl.* (New York) 7(4): 253 (1920), *Uromyces phacae* Thüm., *Bull. Soc. Imp. nat. Moscou* 53: 218 (1878), *Caecomurus phacae* (Thüm.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898), *Uromyces loti* A. Blytt, *Skr. Christiana Vidensk.-Selsk. Forbandl.* 6(6): 37 (1896), *Uromyces striatus* var. *loti* (A. Blytt) Arthur, *Manual of the Rusts in the United States & Canada*: 300 (1934), *Uromyces euphorbiae-corniculatae* Jordi, *Zentbl. Bakt. ParasitKde*, Abt. II 11: 791 (1904), *Uromyces euphorbiae-astragali* Jordi, *Zentbl. Bakt. ParasitKde*, Abt. II 11: 790 (1904), *Uromyces genistae-tinctoriae* f. *anglicae* MacDon., *Trans. Br. mycol. Soc.* 29(1): 67 (1946), *Uromyces genistae-tinctoriae* f. *scoparii* MacDon., *Trans. Br. mycol. Soc.* 29(1): 67 (1946) and *Uromyces genistae-tinctoriae* f. *ulicis* MacDon., *Trans. Br. mycol. Soc.* 29(1): 67 (1946). On *Euphorbia characias*, *E. nicaeensis*, *Lathyrus odoratus*, *Pisum sativum* and *Vicia* sp (Rieuf, 1970). On *Pisum sativum* and *Vicia* sp (Rieuf, 1971).

-Uromyces poae Raben (1866). N.c: *Uromyces dactylidis* G.H. Oth 1861. On *Rannunculus ficaria*, *R. flabellatus*, *Poa alpina* and *P. bulbosa* in Bab Rouida, Azrou and Amizmiz (Maire & Werner, 1937). On *Poa trivialis* var. *silvicola* (Unamuno, 1940b). On *Poa annua* (Unamuno, 1942a). On *Poa bulbosa* (Guyot & Malençon, 1957). On *Polygonum aviculare*, *P. alpina*, *P. annua*, *P. bulbosa*, *P. trivialis*, *Rannunculus ficaria* and *R. flabellatus* (Rieuf, 1970). On *Poa alpina*, *P. annua*, *P. bulbosa*, *P. trivialis*, *Rannunculus ficaria* and *R. flabellatus* (Rieuf, 1971).

-Uromyces polygوني (Pers.) Fuckel (1870). N.c: *Uromyces polygوني-avicularis* (Pers.) P. Karst. [as '*polygوني-aviculariae*'] 1879. Byn.: *Puccinia polygوني* Pers. 1794. On *Polygonum aviculare* (Maire & Werner, 1937; Unamuno, 1940a; Rieuf, 1970).

Uromyces polygوني-avicularis (Pers.) P. Karst. (1879). N.c: *Uromyces polygوني-avicularis* (Pers.) P. Karst. [as '*polygوني-aviculariae*'], *Bidr. Känn. Finl. Nat. Folk* 4: 12 (1879). Syn.: *Puccinia polygوني-avicularis* Pers. [as '*polygوني-aviculariae*'], *Syn. meth. fung.* (Göttingen) 1: 227 (1801), *Dicaeoma aviculariae* (DC.) Gray, *Nat. Arr. Brit. Pl.* (London) 1: 542 (1821), *Puccinia polygوني* Pers., *Neues Mag. Bot.* 1: 119 (1794), *Capitularia polygوني* (Pers.) Rabenh., *Bot. Ztg.* 9: 449 (1851), *Uromyces polygوني* (Pers.) Fuckel, *Jb. nassau. Ver. Naturk.* 23-24: 64 (1870), *Caecomurus polygوني* (Pers.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898), *Dicaeoma polygوني* (Pers.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 466 (1898) and *Nigredo polygوني* (Pers.) Arthur, *N. Amer. Fl.* (New York) 7(4): 243 (1920). On *Polygonum aviculare* in Tarmharit (Guyot & Malençon, 1957). On *Polygonum aviculare* in Michliffen, Ouirgane and Ait Mizane (Guyot & Malençon, 1963). On *Polygonum aviculare* (Rieuf, 1970 et 1971).

-Uromyces polymorphus Peck & Clinton (1879). On *Lathyrus cicera*, *Lens esculenta*, *Pisum arvense*, *Vicia faba*, *V. onobruchioides*, *V. peregrina*, *V. sativa* and *V. villosa* (Rieuf, 1970).

-Uromyces proeminens Duby. On *Euphorbia chamaesyce* and *E. granulata* (Maire & Werner, 1937; Rieuf, 1970).

-Uromyces pterochlaenae Lindr. (1902). On *Cachrys pterochlaena* (Rieuf, 1970).

-Uromyces punctatus J. Schröt. (1870). N.c: *Uromyces pisi-sativi* (Pers.) Liro 1908. On *Astragalus atlanticus* (Rieuf, 1970).

-Uromyces punicus (Juel) Maire. On *Thapsia decussata* and *T. villosa* (Maire & Werner, 1937; Rieuf, 1970 et 1971).

-Uromyces renovatus P. Syd. & Syd. (1909). N.c: *Uromyces renovatus* P. Syd. & Syd., *Monogr. Uredin.* (Lipsiae) 2(1): 113 (1909). On *Lupinus angustifolius*, *L. luteus*, *L. hirsutus* and *L. pilosus* (Maire & Werner, 1937; Rieuf, 1970 et 1971). On *Lupinus* sp in forest of Mamora (El Assfour et al., 2003).

Uromyces rumicis (Schumach.) G. Winter (1884). N.c: *Uromyces rumicis* (Schumach.) G. Winter, *Pilze Deutschl.*: 145 (1884). Syn.: *Uredo rumicis* Schumach., *Enum. pl.* (Kjbenhavn) 2: 231 (1803), *Caecomurus rumicis* (Schumach.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898), *Uredo rumicum* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 66 (1815) and *Caecoma rumicum* (DC.) Schldtl., *Fl. berol.* (Berlin) 2: 126 (1824). On *Rumex maritimus* (Unamuno, 1940a et 1940c). On *Rumex* sp (Unamuno, 1942a). On



Rumex conglomeratus, *R. Crispus* and *R. pulcher* (Guyot & Malençon, 1963). On *Rumex acetosa*, *R. conglomeratus*, *R. crispus*, *R. ginii*, *R. maritimus*, *R. obtusifolius* and *R. pulcher* (Rieuf, 1970 et 1971). On *Rumex conglomeratus* near Asni (El Assfour et al., 2003). On *Rumex crispus*, *R. Pulcher* and *R. Acetosa* in Ourika, Casablanca, Taourirt, Rabat, Port Lyautey, Fes and Ifrane (Maire & Werner, 1937).

-*Uromyces rumicis-tingitani* (DC.) Malençon (1946). Syn.: *Uredo rumicum* var. *rumicis-tingitani*. On *Rumex tingitanus* (Rieuf, 1970 et 1971).

Uromyces salsolae Reichardt (1877) & Rabenh. (1877). On *Salsola kali* (Rieuf, 1970 et 1971). On *Salsola kali* in Essaouira (Guyot & Malençon, 1963; El Assfour et al., 2003).

-*Uromyces sanguinea* Peck. On *Mahonia aquifolium* (Rieuf, 1970).

Uromyces scillarum sensu Juel [Bull. Soc. mycol. Fr. 17: 259 (1901)] fide Sydow & Sydow (1910) & (Grev.) G. Winter (1884). N.c: *Uromyces muscari* Lév. 1847. Byn.: *Uredo scillarum* Grev., in Smith 1836. On *Dipcadi serotinum*, *Scilla lingulata*, *S. obtusifolia*, *S. peruviana*, *Ornithogalum umbellatum*, *O. unifolium*, *Urginea maritima* and *Urginea maura* in Tanger, Azrou, forest of Mamora, Oued Nefifik, Casablanca and Mogador (Maire & Werner, 1937). On *Urginea scilla* (Unamuno, 1942a). On *Urginea maritima* and *Ornithogalum umbellatum* var. *longibracteatum* in the forest of Mamora (Sidi Taïbi) and *Scilla hiapanica* var. *algeriensis* in Ain Tioumliline (Guyot & Malençon, 1957). On *Urginea maritima* (Guyot & Malençon, 1963). On *Anthyllis tetraphylla*, *Dipcadi serotinum*, *Ornithogalum umbellatum*, *O. umbellatum* var. *longibracteatum*, *O. unifolium*, *Scilla autumnalis*, *S. hispanica*, *S. hispanica* var. *algeriensis*, *S. lingulata*, *S. numidica*, *S. obtusifolia*, *S. peruviana*, *Scilla* sp., *Urginea maritima*, *U. maritima* var. *stenophylla* and *U. maura* (Rieuf, 1970). On *Urginea maritima*, *Urginea maritima* var. *stenophylla*, *U. maura*, *Ornithogalum umbellatum*, *O. umbellatum* var. *longibracteatum*, *O. unifolium*, *Scilla autumnalis*, *S. hispanica*, *S. hispanica* var. *algeriensis*, *S. lingulata*, *S. numidica*, *S. obtusifolia*, *S. peruviana* and *Scilla* sp (Rieuf, 1971). On *Urginea maritima* in the forest of Mamora (El Assfour et al., 2003).

-*Uromyces scirpi* Burrill (1884). N.c: *Uromyces lineolatus* (Desm.) J. Schröt., in Rabenhorst 1876. On *Scripus maritimus* (Maire & Werner, 1937; Rieuf, 1970).

-*Uromyces scrophulariae* (DC.) Berk. & Broome ex J. Schröt. (1869). N.c: *Uromyces scrophulariae* (DC.) Berk. & Broome ex J. Schröt., *Symbolae mycologicae*:

63 (1869). Syn.: *Aecidium scrophulariae* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 91 (1815), *Caenomurus scrophulariae* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898), *Puccinia scrophulariae* Lib., *Uromyces concomitans* Berk. & Broome, *Ann. Mag. nat. Hist.*, Ser. 4 15: 36 (1875) and *Caenomurus concomitans* (Berk. & Broome) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898). On *Scrophularia auriculata* and *S. sambucifolia* (Maire & Werner, 1937; Rieuf, 1970 et 1971; El Assfour et al., 2003).

-*Uromyces solidaginis* (Sommerf.) Niessl (1872). On *Solidago virgaurea* (Maire & Werner, 1937; Rieuf, 1970 et 1971).

-*Uromyces spartii-juncei* Syd. & P. Syd. (1910). On *Spartium junceum* (Rieuf, 1970 et 1971).

-*Uromyces* sp Rieuf (1970). On *Cicer arietinum*, *Lagurus ovatus* and *Lens esculenta* (Rieuf, 1970).

-*Uromyces statices-mucromatae* Malençon (1936). On *Statice mucronata* in Essaouira and in Rabat (Guyot & Malençon, 1963). On *Limonium mucronatum* (Maire & Werner, 1937; Rieuf, 1970).

-*Uromyces striatus* J. Schröt. (1870). N.c: *Uromyces striatus* J. Schröt., *Abh. Schles. Ges. Vaterl. Kult. Abth. Naturwiss.* 48: 11 (1870). Syn.: *Caenomurus striatus* (J. Schröt.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898), *Uromyces striatus* var. *medicaginis* (Pass.) Arthur, *Uromyces medicaginis* Pass., in Thümen, *Herb. myc. oeconom.*: no. 156 (1872) and *Nigredo medicaginis* (Pass.) Arthur, *N. Amer. Fl.* (New York) 7(4): 256 (1920). On *Medicago sativa* (Maire & Werner, 1937; Rieuf, 1970 et 1971).

Uromyces sublevis Tranzschel (1910). On *Euphorbia nicaeensis* in Ait Oufellah between Mouldirt and Idni and near Ifrane (Guyot & Malençon, 1963). On *Euphorbia luteola* and *E. nicaeensis* (Rieuf, 1970). On *Euphorbia nicaeensis* near Dayet Aoua (El Assfour et al., 2003).

Uromyces terebinthi (DC.) G. Winter (1884). N.c: *Pileolaria terebinthi* Castagne 1842. Byn.: *Uredo terebinthi* DC., in de Candolle & Lamarck 1815.). On *Pistacia terebinthus* in Ourika and Sidi Moussa El Harati (Maire & Werner, 1937). On *Pistacia terebinthus* and *P. vera* (Rieuf, 1970). On *Pistacia terebinthus* in Gara of Debdon (El Assfour et al., 2003).

-*Uromyces thellungi* Maire (1917). On *Rumex vesicarius* (Maire & Werner, 1937; Rieuf, 1970 et 1971).

-*Uromyces tinctoriicola* Magnus (1896). N.c: *Uromyces tinctoriicola* Magnus, *Verh. zool.-bot. Ges. Wien* 46: 429 (1896). Syn.: *Uromyces hybernae* Liou, *Bull.*

trimest. Soc. mycol. Fr. 45: 121 (1929). On *Euphorbia nicaeensis* (Maire & Werner, 1937; Guyot & Malençon, 1963; Rieuf, 1970).

-*Uromyces tingitanus* Henn. (1904). On *Rumex tingitanus* and *R. bipinnatus* in Ras-ei-Ma, Bekrit, Ifrane, Dayet Ahoua, Casablanca, Mogador, Agadir and Tifnit (Maire & Werner, 1937). On *Rumex tingitanus* var. *eu-tingitanus* in Ifrane (Guyot & Malençon, 1963; El Assfour et al., 2003). On *Rumex tingitanus* (Guyot & Malençon, 1957; Rieuf, 1970).

-*Uromyces toxicodendri* Berk. & Ravenel. Syn.: *Uromyces toxicodendri* and *Pileolaria toxicodendri*. On *Pistacia terebinthus* and *P. vera* (Rieuf, 1970).

Uromyces trifolii sensu auct. & (R. Hedw.) Lév. (1847). N.c: *Uromyces trifolii-repentis* Liro 1906 and *Uromyces trifolii* (R. Hedw.) Lév., *Annls Sci. Nat., Bot.*, sér. 3 8: 371 (1847). Syn.: *Puccinia trifolii* R. Hedw., in Lamarck & de Candolle, *Fl. franç.*, Edn 3 (Paris) 2: 225 (1805), *Uredo trifolii* (R. Hedw.) DC., *Encycl. Méth. Bot.* 8: 223 (1808), *Caeomurus trifolii* (R. Hedw. ex DC.) Gray, *Nat. Arr. Brit. Pl.* (London) 1: 541 (1821), *Caeomurus trifolii* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 449 (1898), *Nigredo trifolii* (R. Hedw.) Arthur, *N. Amer. Fl.* (New York) 7(4): 255 (1920), *Caoma trifolii* (DC.) Schldl., *Linnaea* 1: 604 (1826), *Puccinia neurophila* Grognot, *Michigan Experimental Station Technical Bulletin*: 154 (1863), *Uromyces nerviphilus* (Grognot) Hotson, *Publ. Puget Sound Biol. Sta. Univ. Wash.* 4: 368 (1925) and *Uromyces flectens* Lagerh., *Svensk bot. Tidskr.* 3: 36 (1909). On *Trifolium campestre*, *T. isthmocarpum* and *T. fragiferum* in Tanger and Taourirt (Maire & Werner, 1937). On *Trifolium campestre* (Unamuno, 1940c). On *Trifolium fragiferum* (Unamuno, 1942a). On *Trifolium ochroleucum*, *T. pratense*, *T. campestre*, *T. isthmocarpum* and *T. fragiferum* (Guyot & Malençon, 1957). On *Trifolium* sp (Guyot & Malençon, 1963). On *T. fragiferum*, *T. isthmocarpum*, *T. ochroleucum* and *T. pratense* (Rieuf, 1970). On *Trifolium pratense* var. *spontaneum* (El Assfour et al., 2003).

-*Uromyces trifolii-repentis* Liro (1906). N.c: *Uromyces trifolii-repentis* Liro, *Acta Soc. Fanna Flora fenn.* 29(no. 6): 15 (1906). Syn.: *Uromyces trifolii* var. *trifolii-repentis* (Liro) Arthur, *Uromyces trifolii* sensu auct.; fide Checklist of Basidiomycota of Great Britain and Ireland (2005), *Aecidium trifolii-repentis* Castagne, in Klotzsch, *Klotzschii Herb. Viv. Mycol.*: no. 1994 (1880) and *Uromyces trifolii-hybridus* H.K.G. Paul, (1917). On *Trifolium repens* in Fes (Maire & Werner, 1937). On *Trifolium repens* (Unamuno,

1942a). On *Trifolium resupinatum* and *T. fragiferum* (Guyot & Malençon, 1957). On *Trifolium fragiferum*, *T. repens* and *T. resupinatum* (Rieuf, 1970). On *Trifolium campestre*, *T. fragiferum*, *T. isthmocarpum* and *T. pratense* (Rieuf, 1971).

-*Uromyces trigonellae* Pass. (1889). N.c: *Uromyces trigonellae* Pass., *Tabl. analyt. Fung. France* (Paris) 72: no. 695 (1889). On *Trigonella foenum-graecum* (Maire & Werner, 1937; Rieuf, 1970).

-*Uromyces tuberculatus* Fuckel (1870). N.c: *Uromyces tuberculatus* Fuckel, *Jb. nassau. Ver. Naturk.* 23-24: 64 (1870). Syn.: *Caeomurus tuberculatus* (Fuckel) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 451 (1898), *Aecidium euphorbiae* sensu auct.; fide Checklist of Basidiomycota of Great Britain and Ireland (2005), *Uredo excavata* DC., *Syn. Pl. Gall.*: 47 (1806), *Uromyces excavatus* (DC.) Magnus, *Annls Sci. Nat., Bot.*, sér. 3 8: 371 (1847), *Caeomurus excavatus* (DC.) Kuntze, *Revis. gen. pl.* (Leipzig) 3: 450 (1898) and *Uromycopsis excavata* (DC.) Arthur, (1905). On *Euphorbia exigua* (Maire & Werner, 1937; Rieuf, 1970).

-*Uromyces viciae fabae* (Persoon) Schroter. On *Lathyrus cicera*, *Lens esculenta*, *Pisum arvense*, *Vicia faba*, *V. onobruchioides*, *V. peregrina*, *V. sativa* and *V. villosa* (Rieuf, 1970). On *Vicia faba*, *V. onobruchioides*, *V. peregrina*, *V. sativa* and *V. villosa* (Rieuf, 1971). On *Vicia faba* (Meskine, 1996).

-*Uromyces winteri* Wettst. On *Euphorbia falcate* in Rif (Maire & Werner, 1937). On *Euphorbia sulcata* in Ben karrich and Beni Hosmar (Unamuno, 1940c). On *Euphorbia sulcata* and *Euphorbia falcate* (Rieuf, 1970).

-*Uromyces yoshinagai* Hennings. On *Lathyrus cicera*, *Lens esculenta*, *Pisum arvense*, *Vicia faba*, *V. onobruchioides*, *V. peregrina*, *V. sativa* and *V. villosa* (Rieuf, 1970).

Zaghouania phillyreae (D.C) Pat. N.c: *Zaghouania phillyreae* Pat., *Bull. Soc. mycol. Fr.* 17: 187 (1901). Syn.: *Aecidium phillyreae* DC., in de Candolle & Lamarck, *Fl. franç.*, Edn 3 (Paris) 5/6: 96 (1815), *Uredo phillyreae* Cooke, *Handb. Brit. Fungi* 1: no. 592 (1871) and *Aecidium crassum* var. *phillyreae* Cooke, *Handb. Brit. Fungi* 2: 539 (1871). On *Phillyrea media*, *P. angustifolia* and *P. latifolia* in Tanger, Ferrah (Rif), Ouezzan, Mehdiya, Oued Cherrat, Ksiba and Ourika (Maire & Werner, 1937). On *Phillyrea media* (Unamuno, 1940c). On *Phillyrea latifolia* in Ksiba (Guyot & Malençon, 1957). On *Phillyrea angustifolia* and *P. latifolia* (Guyot & Malençon, 1963).



4 CONCLUSION

The analysis of the literature concerning the mycological flora Uredinales of Morocco has revealed the existence of 448 species including 36 species causing disease in cereals (*Aecidium ornithogaleum*, *Aecidium oxalidis*, *Aecidium rhamni*, *Puccinia anomala*, *Puccinia coronata*, *Puccinia coronifera*, *Puccinia coronata* var. *avenae*, *Puccinia dispersa*, *Puccinia dispersa* f. sp. *tritici*, *Puccinia glumarum*, *Puccinia graminia*, *Puccinia graminis*, *Puccinia graminis* f. sp. *avenae*, *Puccinia graminis* f. sp. *dactylidis*, *Puccinia graminis* f. sp. *secali*, *Puccinia graminis* f. sp. *tritici*, *Puccinia bordei*, *Puccinia bordei-murini*, *Puccinia lolii*, *Puccinia maydis*, *Puccinia recondita*, *Puccinia recondita* f.sp.*bordei*, *Puccinia recondita*

f. sp. *tritici*, *Puccinia simplex*, *Puccinia* sp., *Puccinia secalina*, *Puccinia sorghi*, *Puccinia straminis*, *Puccinia striiformis*, *Puccinia tenuanensis*, *Puccinia triticina*, *Uredo caries*, *Uredo maydis*, *Uredo segetum* f. *Avenae*, *Uredo segetum-bordei* and *Uredo segetum mays-zea*) and 412 species are related to wild plants. All these species belong to 7 families (*Coleosporaceae*, *Cronartiaceae*, *Melampsoraceae*, *Phragmidiaceae*, *Pucciniaceae*, *Pucciniastraceae* and *Zaghouaniaceae*) and 16 genera (*Aecidium*, *Coleosporium*, *Cronartium*, *Gymnosporangium*, *Hyalopsora*, *Kubneola*, *Melampsora*, *Melampsorella*, *Milesina*, *Phragmidium*, *Puccinia*, *Pucciniastrum*, *Roestelia*, *Uredo*, *Uromyces* and *Zaghouania*).

5 BIBLIOGRAPHICAL REFERENCES

- Allagui M. B. & Cherkaoui M., 1999. Prospection de la rouille couronnée et résultats de l'inoculation de lignées d'avoine. Proceeding du symposium régional sur les maladies des céréales et légumineuses alimentaires. Projet PNUD/RAB/91/007. 10-12, 1999. Nabeul, Tunisie 9-14 Novembre 1996.
- Anonyme, 1976. Maladies et ravageurs des plantes cultivées au Maroc. Ministère de l'Agriculture et de la Réforme Agraire, Direction de la recherche Agronomique, Rabat. 207p.
- Benyahia H. & Lyamani A., 1999. Surveillance des maladies foliaires des blés au Maroc durant la campagne agricole 1998-1999. Proceeding du symposium régional sur les maladies des céréales et légumineuses alimentaires. Projet PNUD/RAB/91/007. 10-12, 1999. Nabeul, Tunisie.
- Boubekeur R., Ezzahiri B. & Benbelkacem A., 1996. Etude de la virulence de quelques Isolats Maghrébins de *Puccinia recondita* f. sp. *tritici* Agent de la rouille brune du blé. Proceedings du Symposium Régional sur les Maladies de Céréales et des Légumineuses Alimentaires. 9-14 Novembre 1996, Rabat, Maroc.
- Boulif M., 1996. Etude de la résistance partielle au «Tan Spot» chez 40 génotypes de blé dur. Proceedings du Symposium Régional sur les maladies des céréales et des légumineuses alimentaires. Projet maghrébin PNUD/RAB/71/007. Rabat, Maroc.
- Bovey R., Baggiolini M., Bolay A., Bovay E., Corbaz R., Mathys G., Meylan A., Murbach R., Pelet F., Savary A. & Trivelli G., 1979. La défense des plantes cultivées. Traité pratique de phytopathologie et de zoologie agricole. Station fédérale de recherches agronomiques de Changins, Suisse, 863p.
- Buleigh J.R., Ezzahiri B. & Roelfs A.P., 1991. Assesment of cultivar performance and disease impact on cereals in Morocco. Plant dis. 75:65-73.
- Corbaz R., 1990. Principe de phytopathologie et de lutte contre les maladies des plantes. Presses polythniques et universitaires Romandess CH- 1015 Lausanne, 286p.
- Diouri M., 1988. Contribution à l'étude de la rouille brune dans le Souss Massa. Mémoire de fin d'études. Institut Agronomique et vétérinaire Hassan II.
- Diouri S., 1988. Analyse des virulences et étude isoenzymatique de *Puccinia recondita* f. sp. *tritici* agent de la rouille brune du blé. D.E.A. Faculté de sciences de Rabat, Maroc.
- Diouri S., 1992. Etude des populations de *Puccinia recondita* Rob. Ex Desm f. sp. *tritici* au Maroc et héridité de la résistance du cultivar Jouda à la rouille brune. D.E.S de 3^{ème} cycle. Phytopathologie. Faculté des sciences de Rabat. Université Mohamed V. Maroc.
- Diouri S., 1993. Caractérisation d'agent pathogène de la rouille brune dans le Maghreb. Rapport annuel (Maroc), campagne 192-1993., PROJET PNUD /RAB/91/007.
- Douimi R., Jlibene M. & El Bouami F., 1999. Effet combiné de la rouille brune et de la



- cécidomyie sur le rendement du blé tendre (*Triticum aestivum*) au Maroc. Proceeding du symposium régional sur les maladies des céréales et légumineuses alimentaires. Projet PNUD/RAB/91/007. 10-12, 1999.Nabeul, Tunisie.
- El Assfour A., Ouazzani Touhami A., Zidane L., Fennane M. & Douira A., 2003. Inventaire des spécimens fongiques de l'Herbier national de l'Institut Scientifique de Rabat. Section Sciences de la vie, n° 25, 1-23.
- Ezzahiri B, Diouri S. & Mzada K., 1990. Virulence analysis of *Puccinia recondita f. sp. tritici* in Morocco. Pages: 111-113, in Proc. of the Mediterr. Phytopath. Union, Agadir, Morocco.
- Ezzahiri B. & Diouri S., 1992a. Virulence analysis of *Puccinia recondita f. sp. tritici* in Morocco. Rapport annuel (Maroc), compagne 192-1993., PROJET PNUD /RAB/91/007.
- Ezzahiri B. & Diouri S., 1992b. The screening of the bread wheat advanced lines from Morocco for resistance to *Puccinia recondita f. sp. tritici*. Rapport annuel (Maroc), compagne 192-1993., PROJET PNUD /RAB/91/007.
- Ezzahiri B., 1993a. Pathogenicity of *Puccinia recondita f. sp. tritici* in Morocco, Progress report UNDP prject. pp 80-96.
- Ezzahiri B., 1993b. Field reaction of bread wheat lines and cultivars to *Puccinia recondita f. sp. tritici*. Rapport annuel (Maroc), compagne 192-1993., PROJET PNUD /RAB/91/007.
- Ezzahiri B., 1994. Reaction of Moroccan commercial cultivars of bread and durum wheat to a range of races of *Puccinia recondita f. sp. tritici*. Rapport annuel (Maroc), compagne 192-1993., PROJET PNUD /RAB/91/007.
- Ezzahiri B, Diouri S. & Mzada K., 1996. Pathogenicity of *Puccinia recondita f. sp. tritici* in the Maghreb in the period 1990-1996.
- Ezzahiri B. Mzada K. & Nsarallah N., 1998. Inheritance of leaf rust resistance in three durum cultivars from Morocco. Pages 267-269 in Proceeding of the 9th International Symposium of wheat genetics. Canada.
- Ezzahiri B. Charfi F. & Berthier G., 1999. Etude de l'effet semiotherapique de l'association fongicides pelliculants sur la rouille brune du blé. Proceeding du symposium régional sur les maladies des céréales et légumineuses alimentaires. Projet PNUD/RAB/91/007. 10-12, 1999.Nabeul, Tunisie, 9-14 Novembre 1996.
- Gonzalez Fragoso R., 1913. *Uromyces ornithopodioidis* sp. nov. de Telata, cerca de Larache. Bol. R. Soc. Esp. Hist. Nat., t. 13.
- Guyot A.L. & Malençon G., 1957. Urédinés du Maroc I. Travaux de l'Institut Scientifique Chérifien. Série botanique n° 11, 184 p.
- Guyot A.L. & Malençon G., 1963. Urédinés du Maroc II. Travaux de l'Institut Scientifique Chérifien Série botanique n° 28, 153p.
- Haouari A., 1984. Contribution à l'étude de la pathogénie de l'agent de la rouille brune du blé *Puccinia recondita f. sp. tritici*. Mémoire de fin d'études. Complexe Horticole d'Agadir.
- Jlibene M., 1996. Mise au point des lignées isogéniques de Blé tendre avec differents niveaux de résistance aux rouilles, à la septoriose et à la cécidomyie. Prcedings du Symposium Régional sur les maladies des céréales et des légumineuses alimentaires. Projet maghrébin PNUD/RAB/71/007.Rabat, Maroc.
- Kirk P., 2005. Ainsworth and Bisby's Dictionary of the Fungi, 9ème edition, www.indexfungorum.org.
- Khouader M., Nmichi A., Benkirane R., Ouazzani Touhami A. & Douira., 2011 a. *Avena fatua*, un nouvel hôte au Maroc pour *Puccinia coronata*. Revue Marocaine de la Protection des plantes, 2011, N° 2: 47-50.
- Khouader M., Benkirane R., Ouazzani Touhami A., Boussalwa E. & Douira., 2011 b. The Endemic plant *Limonium mucronatum*, a new host for *Uromyces limonii* in Morocco. Atlas Journal of Biology 1 (3): 66-69.
- Lyamani A., 1975. Etude de la composition de la flore fongique associée aux semences de Blé et d'Orge au Maroc. Mémoire de fin d'études. Institut Agronomique et vétérinaire Hassan II, Rabat, 21p.
- Lyamani A., 1989. Fréquence et sévérité des maladies d'orge, du blé dur et du blé tendre dans les principales régions céréalières au Maroc. Rapport d'activité 1988-89.INRA Settat.



- Lyamani A., 1990. Fungal foliar diseases of wheat and barley in Morocco. P.281. In 8th congress of the Mediterranean Phytopathological Union. October 28th-November 3rd 1990. Agadir Morocco.
- Maire R. & Werner G., 1937. Catalogue raisonné des champignons connus jusqu'ici au Maroc. Mém. Soc. Sc. Nat. Maroc, 45 : 1-148.
- Malençon G., 1936. Notulae mycologicae. Marocanae. I. Uredinales. *Puccinia*. Rev. De Mycologie t. I. : 43-74. Paris.
- Mergoum M., 1982. L'hérédité de la résistance à la rouille jaune (*Puccinia striiformis* Westland). Mémoire de fin d'études. Institut Agronomique et Vétérinaire Hassan II. 78p.
- Meskine M., 1996. Détermination de la gamme d'hotes d'*Uromyces Viciae-Fabae*. Proceedings du Symposium Régional sur les maladies des céréales et des légumineuses alimentaires. Projet maghrébin PNUD/RAB/71/007.Rabat, Maroc.
- Ouassou A. & El khayari M., 1996. Evaluation d'une partie de la collection internationale de Blé dur pour la résistance à Poudium et à la rouille brune au Maroc. Proceedings du Symposium Régional sur les maladies des céréales et des légumineuses alimentaires. Projet maghrébin PNUD/RAB/71/007.Rabat, Maroc.
- Ramadani A., 1996. Comportement de quelques variétés du blé dur vis-à-vis de la rouille brune (INRA, Meknes, Maroc). Proceedings du Symposium Régional sur les maladies des céréales et des légumineuses alimentaires. Projet maghrébin PNUD/RAB/71/007.Rabat 9-14 Novembre 1996, Maroc.
- Ramadani A. & Jlibene M., 1996. Réaction de quelques variétés de Blé tendre vis-à-vis des rouilles jaune et brune (INRA, Meknes, Maroc). Proceedings du Symposium Régional sur les maladies des céréales et des légumineuses alimentaires. Projet maghrébin PNUD/RAB/71/007.Rabat 9-14 Novembre 1996, Maroc.
- Rieuf P., 1969. Parasites et saprophytes des plantes au Maroc. Les cahiers de recherche agronomique, 27: 1-178.
- Rieuf P., 1970. Parasites et saprophytes des plantes au Maroc. Les cahiers de recherche agronomique, 28: 179-357.
- Rieuf P., 1971. Parasites et saprophytes des plantes au Maroc. Les cahiers de recherche agronomique, 29: 470-570.
- Saadaoui El M. & Zine El Abidine F., 1993. Aperçu sur les principaux travaux de recherches effectués au Maroc sur les maladies des céréales. Cahiers de la recherche agronomiques- n°41-Décembre 1993.
- Saidi S., 1999. Etude de la rouille couronnée d'avoine (*Puccinia coronata f. sp. avenae*) au Maroc et identification des sources de résistance dans les populations d'*Avena ssp.* Thèse de doctorat, Fac. Univ. Des sci. Agr. De Gembloux (Belgique).
- Saidi S., Ezzahiri B. & Lepoivre P., 1999. Virulence analysis of crown rust (*Puccinia coronata f. sp. avenae*) of oats in Morocco. Proceeding du symposium régional sur les maladies des céréales et légumineuses alimentaires. Projet PNUD/RAB/91/007. 10-12, 1999.NABEUL, TUNISIE 9- 14 Novembre.
- Semal J., 1989. Traité de pathologie végétale. PAG Gembloux / Belgique, 621 p.
- Taoufiq E. M., 1986. Evaluation of rusting of wheat infected with leaf rust, *Puccinia recondita f. sp. Tritici* under epidemics of different severities. Rapport INRA-MIAC 1985-1986. INRA. Rabat.
- Taoufiq E. M., 1988a. Evaluation de lignées de blé pour la résistance aux rouilles. Rapport INRA-MIAC 1987-1988. INRA. Rabat.
- Taoufiq E. M., 1988b. Evaluation des gènes de résistance à la rouille brune et à la rouille noire du blé. Rapport INRA-MIAC 1987-1988. INRA. Rabat.
- Taoufiq E. M., 1993. Distribution, incidence et sévérité des rouilles du blé au Maroc au cours de la campagne 1992- 93. Rapport annuel (Maroc). Campagne 192-1993., PROJET PNUD /RAB/91/007.
- Unamuno P. L., 1940a. Nueva aportación al estudio de los hongos microscopicos de la zona del protectorado español en marruecos. Notas micologicas. Segunda serie, 148: 102-103.
- Unamuno P. L., 1940b. Nueva aportación al estudio de los hongos microscopicos de la zona del



- protectorado español en marruecos. Notas micologicas. Segunda serie., 152: 220-222.
- Unamuno P. L, 1940c. Nueva aportacion al studio de los hongos microscopicos de la zona del protectorado español en marruecos. Notas micologicas. Segunda serie, 156: 398-400.
- Unamuno P. L, 1940d. Nueva aportacion al studio de los hongos microscopicos de la zona del protectorado español en marruecos. Notas micologicas. Segunda serie, 156: 362-363.
- Unamuno P. L, 1941. Nueva aportacion al studio de los hongos microscopicos de la zona del protectorado español en marruecos. Notas micologicas. Segunda serie, 165: 247-248.
- Unamuno P. L, 1942a. Nueva aportacion al studio de los hongos microscopicos de la zona del protectorado español en marruecos. Notas micologicas. Segunda serie, 180: 340-341.
- Unamuno P. L, 1942b. Nueva aportacion al studio de los hongos microscopicos de la zona del protectorado español en marruecos. Notas micologicas. Segunda série., 181: 367-369.