

THE PARASITES OF AMPHIBIA

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PROTOZOA: List of Parasites arranged alphabetically as to genera within the major groupings of MASTIGOPHORA, SARCODINA, SPOROZOA, and CILIATA.

MASTIGOPHORA

- BODO LUDIBUNDUS. On tadpoles of Pelobates fuscus, Rana esculenta--Europe. Chilomastix cauleryi (= Macrostoma c., = Tetramitus c., = C. sp? Fantham, 1922). From Bufo bufo, "Frog Spawn", Pelodytes punctatus, Pleurodelis walcklii, Salamandra salamandra, Triturus marmoratus--Europe; Ambystoma maculatum, A. tigrinum, "Anura", Lauter, 1960, Bufo boreas halophilus, Rana pipiens--U.S.A.
- CHILOMASTIX sp? of Camara & Buttrey, 1961. From tadpoles and adults of Rana septentrionalis--U.S.A.
- CHILMASTIX sp? of Wenrich, 1947. From Pseudotriton ruber, Rana pipiens--U.S.A.
- COLACIUM VESICULOSUM. On tadpoles of Pelobates fuscus, Rana esculenta--Europe.
- COPROMONAS SUBTILIS (= Monas pileatorum, e.p., = Scytomonas pusilla, e.p., = S. subtilis, = Copromonas major, = C. ruminatum). From Bufo bufo, Rana temporaria--Europe.
- CRITHIDIA GERRIDIS (= Leptomonas g., = Herpetomonas g.). From Rana temporaria--Europe. (probably not C. gerridis, but the "crithidial" stage of Trypanosoma inopinatum).
- CRYPTOBIA BORRELLI (= Trypanosoma b.). From Ambystoma opacum, Desmognathus fuscus, D. ochrophaeus carolinensis, D. phoca, D. quadramaculatus, Eurycea longicauda guttolineata, Plethodon cinereus, P. glutinosus, P. metcalfi, Pseudotriton ruber, Notophthalmus (Triturus) viridescens--U.S.A.
- CRYPTOBIA RANAE (= Trypanoplasma ranae, = ? Cercomonas ranae of Wenyon, 1926). From "Frogs"--U.S.A.
- EUGLENA ACUS. From tadpoles of Pelobates fuscus, Rana esculenta--Europe.
- EUGLENA DESES. From tadpoles of Pelobates fuscus, Rana esculenta--Europe.
- EUGLENA sp. "B". (Hegner, 1923). From tadpoles of Rana clamitans, R. pipiens--U.S.A.
- EUGLENA sp?, Sassuchin, 1928. From tadpoles of Pelobates fuscus, Rana esculenta--Europe.
- EUGLENA sp?, Sassuchin, 1928. On skin of tadpoles of P. fuscus, R. esculenta--Europe (same species as above?).

- EUGLENOMORPHA HEGNERI (= Euglena sp?, Alex., 1912, = E. sp? Alex. of Hegner, = E. ranarum, Rankin). From tadpoles of Ambystoma maculatum, Rana clamitans, R. septentrionalis, (Triturus) Notophthalmus viridescens--U.S.A.
- EUGLENOMORPHA PELLUCIDA. From tadpoles of Rana clamitans--U.S.A.
- EUTRICHOMASTIX BATRACHORUM (= Trichomastix b.). From Ambystoma opacum, Desmognathus fuscus, D. ochrophaeus carolinensis, D. phoca, D. quadramaculatus, Eurycea bislineata wilderae, E. longicauda guttolineata, Notophthalmus viridescens, Plethodon cinereus, P. glutinosus, P. metcalfi, P. yonahlossee, Pseudotriton ruber--U.S.A.; Pelobates fuscus, Rana temporaria--Europe; Bufo melanostictus, Rana tigrina--Asia; Rana fuscigula--Africa.
- EUTRICHOMASTIX sp?, Walton, 1941(= Trichomastix sp?, Dobell, 1910). From Bufo melanostictus, Rana tigrina--Asia.
- EUTRICHOMASTIX sp?, Walton, 1941(= Trichomastix sp?, Fantham, 1924). From Bufo regularis--Africa.
- EUTRICHOMASTIX sp?, Walton, 1941(= Trichomastix sp?, Fantham, 1931). From Bufo carens--Africa.
- EUTRICHOMASTIX sp?, Walton, 1941(= Trichomastix sp?, Johnston, 1916). From Hyla caerulea--Australia.
- "Flagellates", Geiman, 1934. From Pipa pipa--S. Amer.
- "Flagellates", Pearse, 1932. From Megalobatrachus japonicus, Onychodactylus japonicus--japonicus.
- GIARDIA AGILIS (= G. alata, = G. gracilis, = G. xenopi, = G. xenopodis, = Treponomonas agilis, Kudo, 1939, e.p.). From Bufo regularis, Xenopus laevis tadpoles--Africa; Hyla arborea, Pelobates fuscus, Rana esculenta (tadpoles and adults)--Europe; Rana septentrionalis--U.S.A.
- HEGNERIA LEPTODACTYLI. From Leptodactylus ocellatus--Brazil.
- HERPETOMONAS MUSCARUM (= Bodo muscarum Leidy, = Cercomonas muscae, = Monomita m., = Herpetomonas m., = H. sarcophagae, = Crithidia m., = Rhynchoidomonas sp?, Patton, 1910, = Rhynchomonas luciliae, Patton, 1910, = Herpetomonas calliphorae, = H. luciliae, = Rhynchoidomonas drosophilae, = Leptomonas m.). Exper. in Rana esculenta--Europe. (normally in Diptera, see Drbohle, 1925).
- HERPETOMONAS XENOPI (= ? Leishmania xenopodi). From Bufo carens--S. Africa.
- HEXAMASTIX BATRACHORUM (= Polymastix b.). From Ambystoma maculatum, A. opacum, Bufo boreas halophilus, Desmognathus fuscus, D. ochrophaeus carolinensis, D. phoca, D. quadramaculatus, Eurycea bislineata wilderae, E. longicauda guttolineata, Gyrinophilus porphyriticus danielsi, Notophthalmus viridescens, Plethodon cinereus, P. glutinosus, P. metcalfi, Pseudotriton ruber, Rana pipiens--U.S.A.; Triturus vulgaris--Europe.
- HEXAMASTIX sp., Frandsen & Grundmann, 1960. From Rana pipiens--U.S.A.

HEXAMASTIX sp?, F. & G., 1960. From
Ambystoma tigrinum--U. S. A.

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HEXAMITUS BATRACHORUM (= Octomastix b.,
= Octomitus b.). From Ambystoma
maculatum, A. tigrinum, Aneides lugubris,
Batrachoseps attenuatus, Desmognathus
fuscus, D. phoca, D. quadramaculatus,
Ensatina eschscholtzii, Eurycea bis-
lineata wilderae, E. longicauda gutto-
lineata, Notophthalmus viridescens,
Plethodon cinereus, P. glutinosus,
Rana aurora draytoni, R. boylei, R.
pipiens--U. S. A.

HEXAMITUS (= Octomastix) BATRACHORUM,
Lauter, 1960. From "Anura"--U. S. A.

HEXAMITUS BRUMPTI. From Telmatobius
escomeli, T. (?) jelskii (P. = gebskii)
--S. Amer.

HEXAMITUS INTESTINALIS (= Bodo
intestinalis e.p., = Hexamitus ranarum
e.p., = Cercaria gyrinus, = Bodo
(Amphimonas) decipiens e.p., = Bodo
(Cercomonas) intestinalis, = Cercomonas
ranarum, = Amphimonas intestinalis, =
Monomorphus ranarum, = Dicercomonas
ranarum e.p., = D. intestinalis, =
Urophagus intestinalis, = Octomitus
dujardini, = O. intestinalis, = Octo-
mastix intestinalis). From Ambystoma
maculatum, A. opacum, Axolotl, Bufo
fowleri, Desmognathus fuscus, D.
ochrophaeus carolinensis, D. phoca,
D. quadramaculatus, Hyla crucifer,
Notophthalmus viridescens, Plethodon
cinereus, P. glutinosus, P. metcalfi,
Pseudacris brimleyi, Pseudotriton
ruber, Rana catesbiana, R. pipiens, R.
septentrionalis, R. sphenoccephala,
Scaphiopus holbrookii, Taricha torosa--

U. S. A.; Bufo bufo, Rana esculenta, R.
temporaria, Triturus cristatus, T.
helveticus--Europe; Triturus pyrrhogaster
--Japan.

HEXAMITUS (? = Octomitus) NEGLECTA.
From "Anura",--U. S. A. (see Lauter,
1960).

HEXAMITUS OVATA. From Aneides flavo-
punctatus, A. lugubris, Batrachoseps
attenuatus, Ensatina eschscholtzii,
Notophthalmus viridescens, Rana aurora
draytoni, R. boylei, R. pipiens, Taricha
granulosus, T. torosa--U. S. A.

HEXAMITUS PARVA. (= Octomastix p., =
Octomitus p.). From Bufo calamita--
Europe (normally in chelonians).

HEXAMITUS RANAE, Walton, 1941 (= Octomitus r.,
Fantham, 1923). From Rana adspersa--Africa.

HEXAMITUS XENOPI, Walton, 1941 (= Octomitus x.,
Fantham, 1923). From Xenopus laevis--Africa.

HEXAMITUS spp?, Walton, 1941 (= Octomitus spp?,
Dobell, 1910). From Bufo melanostictus, Rana tigrina--India.

HEXAMITUS sp?, Frandsen & Grundmann,
1960. From Ambystoma tigrinum,
Bufo boreas halophilus, B. woodhousii,
Rana pipiens--U. S. A.

HEXAMITUS sp?, Honigberg & Christian,
1952. From Ambystoma tigrinum--
U. S. A.

HEXAMITUS sp?, Kofoid, McNeil & Bone-
still, 1933. From blood of Bufo
calamita--Europe.

- HEXAMITUS sp?, Scott, 1925. From Rana tigrina--Zool. Gard., London, Eng.
- HEXAMITUS spp?, Wenrich, 1935. From Acris gryllus, Desmognathus fuscus--U. S. A.
- HEXAMITUS (= Urophagus) sp?, Wenrich, 1935. From Rana pipiens--U. S. A.
- HEXAMITUS sp?, Wenrich, 1947. From Ambystoma jeffersonianum, Pseudotriton ruber, Rana pipiens--U. S. A.
- ? HEXAMITUS (= Octomastix sp?, Camara & Buttrey, 1961). From tadpoles and adults of Rana septentrionalis--U. S. A.
- ? HEXAMITUS (= Octomitus pulcher, Frandsen & Grundmann, 1960). From Bufo boreas halophilus--U. S. A.
- ? HEXAMITUS (= Octomitus sp?, Camara & Buttrey, 1961). From adults of Rana septentrionalis--U. S. A.
- ? HEXAMITUS sp? (= Octomitus sp?, Honigberg & Christian, 1952). From Ambystoma maculatum, A. tigrinum--U. S. A.
- ICHTHYOBODO NECATRIX (= Bodo n., = Costia n., = Tetramitus nitschi, = Bodo necator). From skin and gills of tadpoles of Rana catesbiana, R. clamitans, R. palustris--U. S. A. (normally on fish).
- KAROTOMORPHA AMBYSTOMAE (= Tetramastix a.). From Ambystoma sp? --N. Amer.
- KAROTOMORPHA BUFONIS (= Monocercomonas b., = Tetramitus b., = Tetramastix b., = Protetramitus b., = Trichomastix (Mono-) b., = Polymastix b., = Protetramastix b.). From Alytes obstetricans (tadpoles), Bombina pachypus, Bufo bufo, Discoglossus pictus, Euproctus asper, Pelodytes punctatus, Triturus helveticus--Europe; Ambystoma tigrinum, Axolotl, Rana pipiens--N. Amer.
- KAROTOMORPHA SWEZYI (= Tetramastix s., = Polymastix bufonis of Swezy, renamed, = Tetramastix swezi). From Ambystoma tigrinum, "Anura" of Lauter, 1959, Batrachoseps attenuatus, Bufo americanus, B. boreas halophilus, Desmognathus fuscus, D. ochrophaeus carolinensis, D. phoca, D. quadramaculatus, Eurycea longicauda, Notophthalmus viridescens, Plethodon cinereus, P. glutinosus, P. metcalfi, P. yonahlossee, Pseudotriton ruber, Rana pipiens, R. septentrionalis, Taricha torosa--U. S. A.
- LEISHMANIA DONOVANI (= Piroplasma d., = Herpetomonas d., = Leishmania infantum). From Rana pipiens--U. S. A. (exper., Drbohle, 1925).
- LEISHMANIA XENOPI, Walton, 1941 (= Herpetomonas x., = Leishmania sp?). From Bufo regularis, Xenopus laevis--S. Africa.
- LEISHMANIA sp?, Walton, 1941 (= Herpetomonas sp? Fantham, 1931). From Bufo carens--Africa.
- LEPOCINCLIS sp?, Sassuchin, 1928. From Pelobates fuscus, tadpoles of Rana esculenta--Europe.

LEPTOMONAS CTNEOCEPHALI (= L. Pseudoleishmania, = Herpetomonas c.). From Rana pipiens (exper.)--U. S. A. (normally in invertebrates, Drbohev, 1925).

LEPTOMONAS JACULUM (= Herpetomonas j. = H. lygaei, = Leptomonas agilis, = L. davidi). From Bufo bufo, Rana esculenta, R. temporaria, Triturus vulgaris (exper.)--Europe. (normally in invertebrates, Fantham & Porter, 1915).

LEPTOMONADS ("Monadiens" spp?, Escamel, 1929). From Bufo spinulosus, Telmatobius escomeli, T. jelskii (? = gebskii)--S. Amer.

LEPTOMONADS ("Abibes" spp?, Escamel, 1929). From Bufo spinulosus, Telmatobius escomeli, T. jelskii (? = gebskii)--S. Amer.

MASTIGAMOEBIA HYLAE (= Tricholimax h., = Mastigina h.). Ecto- & endoparasitic from larvae and adults, Alytes obstetricans, Bufo calamita, Pelobates fuscus, Rana esculenta, Triturus vulgaris--Europe; Hyla raddiana--Brazil; Rana catesbiana, R. clamitans, R. pipiens--U. S. A.

MONOCERCOMONAS BATRACHORUM (? = Tritrichomonas). From "Anura"--U. S. A. (Lauter, 1960).

MONOCERCOMONAS ROTUNDA (= Retortomonas r.). From Bufo bufo--Europe.

MONOCERCOMONOIDES ELEGANS. From

blood of Anurans--U. S. A. (Lauter, 1960).

MONOCERCOMONOIDES MELOLONTHAE (? = Bodo m., = Monoceromonas (Schedoacercomonas) m., = M. (S.) gryllotalpae, e.p., = Trichomonas m., = Monoceromonas insectorum, e.p., = Polymastix m., = Retortomonas m.). From "Anura", Ensatina eschscholtzii--U. S. A. (normally in insects, possibly accidental infestation).

MONOCERCOMONOIDES sp?, Camara & Buttrey, 1961. From tadpoles, Rana septentrionalis--U. S. A.

PHACUS CAUDATA. From Pelobates fuscus, tadpoles of Rana esculenta--Europe.

PHACUS LONGICAUDA. From Pelobates fuscus, tadpoles of Rana esculenta--Europe; tadpoles of Rana septentrionalis--U. S. A.

PHACUS MONILIATA. From tadpoles of Rana septentrionalis--U. S. A.

PHACUS PLEURONECTES. From Pelobates fuscus, tadpoles of Rana esculenta--Europe.

PHACUS sp?, Alexeieff, 1912 (near P. longicauda). From frog tadpoles--Europe.

PHACUS sp?, Hegner, 1922 (near P. pleuronectes). From tadpoles of Bufo americanus, Rana clamitans, Rana pipiens--U. S. A.

PHACUS sp?, Sassuchin, 1928. From Pelobates fuscus, tadpoles of Rana esculenta--Europe.

PROTEROMONAS LONGIFILA (= Heteromitus l., = Monocercomonas lacertae-viridis, e.p., = Schedoacercomonas l-v., e.p., = Heteromitus lacertae, e.p., = Proteromonas dolichomastix, e.p., = Bodo lacertae, e.p. = Heteromitus l., e.p., = Blastocystis enterocola, e.p., = Prowazekella lacertae, e.p., = P. longifilis, e.p., = Prowazekia lacertae, = Proteromonas lacertae). From Ambystoma jeffersonianum, A. maculatum, A. opacum, Axolotl, Batrachoseps attenuatus, Bufo boreas, Cryptobranchus alleghaniensis, Desmognathus fuscus, D. ochrophaeus, D. o. carolinensis, D. phoca, D. quadramaculatus, Eurycea bislineata cirrigera, E. b. wilderae, E. longicauda guttolineata, Gyrinophilus porphyriticus danielsi, Notophthalmus viridescens, Plethodon glutinosus, P. cinereus, P. metcalfi, P. yonahlossee, Pseudotriton montanus, P. ruber, Rana pipiens--N. Amer.; Leptodactylus gracilis--S. Amer.; Salamandra salamandra--Europe.

PROTEROMONAS sp?, Harris, 1954 (possibly = Prowazekella sp?). From Necturus maculosus--U.S.A.

RETORTAMONAS DOBELLI (= Embadamonas d.). From Acris gryllus, Bufo valliceps, Pseudotriton ruber, Rana catesbiana, R. clamitans, R. pipiens, R. septentrionalis, "Anura" of Lauter, 1960 (tadpoles and adults)--U.S.A.; Bufo bufo, Rana temporaria, Salamandra salamandra--Europe.

RETORTAMONAS INTESTINALIS (= Wasakia i., = Embadamonas i., = Diplocercomonas soudanensis e.p., = Enteromonas bengalensis, = Embadamonas sinensis, = Retortamonas s.). From "Frogs"--Europe (England). (Wenyon, 1928 reports frog form indistinguishable from normal mammalian form).

RETORTAMONAS RANAE, Walton, 1941 (= Embadamonas r., Ray, 1927). From "Frogs"--Asia.

RETORTAMONAS sp?, Honigberg & Christian, 1952. From Ambystoma tigrinum--U.S.A.

RETORTAMONAS sp?, Walton, 1941 (= Trichomonas sp?, Dobell, 1909). From Rana esculenta--Europe.

RETORTAMONAS sp? Walton, 1941 (= Embadamonas sp?, Wenyon, 1926). From Rana esculenta--Europe.

RHIZOMASTIX GRACILIS (= R. agilis, Yakimoff & Kolpakoff, 1921). From Axolotl--Mexico.

RHIZOMASTIX sp?, Camara & Buttrey, 1961. From tadpoles and adults, Rana septentrionalis--U.S.A.

SPIRONUCLEUS ELEGANS. From Bombina sp?, Pelodytes sp?, Rana sp?--Europe.

SYNDYOMITA NEGLECTA. From Bombina bombina, Bufo calamita, Salamandra salamandra--Europe.

TRACHELOMONAS VOLVOCINA. From Pelobates fuscus, tadpoles of Rana esculenta--Europe.

TRACHELOMONAS sp?, Sassuchin, 1928.

Pelobates fuscus, Rana esculenta tadpoles--Europe.

TREPOMONAS AGILIS. From larval forms of Alytes obstetricans, Rana esculenta, Rana temporaria, Triturus spp?--Europe; "Anura" of Lauter, 1960, Rana pipiens--U.S.A. (normally a free-living form; possibly should be Giardia sp?).

TREPOMONAS sp?, Honigberg & Christian, 1952 (? T. agilis). From Ambystoma tigrinum--U.S.A.

TREPOMONAS sp?, Wenrich, 1947 (? = T. agilis). From Pseudotriton ruber, Rana pipiens--U.S.A.

TRICHOMITUS PARVUS (? = Trichomonas batrachorum). From Batrachoseps attenuatus, Notophthalmus viridescens, Rana pipiens, Taricha torosa--U.S.A.

TRICHOMONAS AUGUSTA (= Exechlyga acuminata e.p., = Tritrichomonas augusta). From Acris crepitans, A. gryllus, Ambystoma jeffersonianum, A. maculatum, A. opacum, A. tigrinum, "Anura" of Lauter, 1960, Bufo americanus, B. boreas halophilus, B. cognatus, B. compactilis, B. terrestris, B. valliceps, B. woodhousii, Cryptobranchus alleganiensis, Desmognathus fuscus, D. ochrophaeus, D. o. carolinensis, D. phoca, D. quadramaculatus, Dicamptodon ensatus, Eurycea bislineata cirrigera, E.b. wilderae, E. longicauda guttolineata, Gastrophryne texensis, Hyla arenicolor, H. cinerea, H. crucifer, H. eximia, H. regilla, H. squirella, H. versicolor, Notophthalmus

viridescens, Plethodon cinereus, P. glutinosus, P. metcalfi, P. yonahlossee, Pseudacris brimleyi, P. nigrata triseriata, Pseudotriton montanus, P. ruber, Rana aurora draytoni, R. boylei, R. catesbiana, R. clamitans, R. montezumae, R. palustris, R. pipiens (may form liver abscesses), R. septentrionalis, R. sphenoccephala, R. sylvatica, Scaphiopus hammondi, S. holbrooki, Taricha torosa--N. Amer.; Atelopus varius zeteki, Bufo marinus, Rana virgatipes--Cent. Amer.; Bufo spinulosus, Calyptocephala gayi, Pleurodema bibroni--S. Amer.; Bufo bufo, B. calamita, B. viridis, Pelobates fuscus, Rana esculenta, R. temporaria--Europe; Bufo b. asiaticus, Microhyla olivacea, Triturus pyrrhogaster--S.E. Asia.

TRICHOMONAS BATRACHORUM (= Bursaria ranarum e.p., = Opalina r. e.p., = Bodo r. e.p., = Cercomonas r. e.p., = Bodo intestinalis e.p., = Cercomonas i. e.p., = Exechlyga acuminata e.p., = Cercaria gibba, Diesing, 1850, = Monocercomonas batrachorum, = Cimaenocercomonas b., = Cercomonas b., = Tritrichomonas b., = Tetratrichomonas b., = Trichomonas "hominis", Carazzi, 1922, Escomel, 1929, = Paratrichomonas b.). From Bombina bombina, Bufo bufo, B. calamita, B. viridis, Hyla arborea, Rana arvalis (= terrestris), R. dalmatina, R. esculenta, R. temporaria, R. t. parvipalmata, Salamandra atra, Triturus alpestris, T. marmoratus--Europe; Ambystoma jeffersonianum, A. maculatum, A. tigrinum, "Anura", Lauter, 1960, Bufo americanus, B. boreas halophilus, Pseudotriton ruber,

Rana boylii, R. catesbiana, R. pipiens, R. septentrionalis, Scaphiopus holbrooki --U.S.A.; Ambystoma mexicanum, Hyla sp?--Mexico; Bufo leutkeni, B. marinus --Costa Rica; Bufo arenarum, B. d'orbigny, B. marinus, B. paracnemis, B. spinulosus, Leptodactylus ocellatus, Telmatobius escomeli, T. jelskii (? = gebskii)--S. Amer.; Bufo melanostictus, Rana cyanophlyctis, R. tigrina, R. t. rugulosa--Asia; Bufo regularis, Xenopus laevis--Africa.

TRICHOMONAS DUBOSCQUE. From Discoglossus pictus--Africa.

TRICHOMONAS GRANULOSA. From Bufo bufo, B. calamita--Europe.

TRICHOMONAS "HOMINIS", Carazzi, 1922 (= T. batrachorum). From Triturus marmoratus--Europe.

TRICHOMONAS "HOMINIS", Escomel, 1929 (= T. batrachorum). From Bufo spinulosus tadpoles, Telmatobius escomeli, T. jelskii (? = gebskii)--S. Amer.

TRICHOMONAS INTESTINALIS, Escomel, 1924 (? = Giardia agilis). From Telmatobius jelskii (? = gebskii)--S. Amer.

TRICHOMONAS MIRABILIS (? = T. augusta). From Bufo sp?--Europe.

TRICHOMONAS PROWAZEKI (= Tetratrichomonas p., = Tetra. batrachorum, Escomel, 1925). From Alytes obstetricans, Bufo bufo, Rana temporaria, Salamandra salamandra, Triturus cristatus--Europe; Amphiuma means, Bufo terrestris, Notophthalmus viridescens,

Rana boylii, R. catesbiana, R. septentrionalis, Taricha torosa--U.S.A.; Telmatobius jelskii (? = gebskii)--S. Amer.

TRICHOMONAS TRITONIS. From Triturus sp?--Europe.

TRICHOMONAS VITALI. From Bufo marinus --S. Amer.

TRICHOMONAS sp?, Dobell, 1910. From Bufo melanostictus, Rana tigrina--India.

TRICHOMONAS sp?, Malewitz, 1956. From Cryptobranchus bishopi--U.S.A.

TRICHOMONAS sp?, Pittaluga, 1923. From Rana sp?--Europe.

TRICHOMONAS spp?, Thompson (in Hamerton, 1934, 1935). --From Rana catesbiana (1934), Ceratophrys dorsata (1935)--Zool. Gard., London, Eng.

TRICHOMONAS sp?, Wenyon (in Hamerton, 1932). From Salamandra salamandra--Zool. Gard., London, Eng.

? TRICHOMONAS sp? (= Tritrichomonas sp?, Frandsen & Grundmann, 1960). From Rana pipiens--U.S.A.

TRIGONOMONAS DIPLOSTOMUM. From Rana clamitans--U.S.A. (Genus normally free-living, not parasitic. Record of doubtful validity).

TRIMITUS PARVUS. From Bufo bufo, Rana temporaria--Europe; "Anura", Lauter, 1960, Notophthalmus viridescens, Rana pipiens--U.S.A.

TRYPANOSOMA AMBYSTOMAE. From blood of Ambystoma gracile, Taricha

- granulosa, T. torosa--U. S. A. Crithidial form from leech (Erpobdella sp?).--U. S. A.
- TRYPANOSOMA ARCEI (? = T. rotatorium). From blood, Leptodactylus ocellatus--S. Amer.
- TRYPANOSOMA BARBARI. From Taricha torosa--U. S. A. Intermediate host, leech (Actinobdella sp?).
- TRYPANOSOMA BELLI (? = T. rotatorium). From "Frogs"--China.
- TRYPANOSOMA BOCAGEI (? = T. rotatorium). From Bufo mauritanicus--Africa.
- TRYPANOSOMA BOCAGEI MAGNA (? = T. rotatorium). From Bufo regularis--Africa; Bufo melanostictus--Asia.
- TRYPANOSOMA BOCAGEI PARVA (? = T. rotatorium). From Bufo regularis--Africa; Bufo melanostictus--Asia.
- TRYPANOSOMA BORRELLI (? = T. rotatorium). From Hyla rubra, Leptodactylus spp?--S. Amer.; Rana guntheri, R. limnocharis, R. tigrina--S. E. Asia.
- TRYPANOSOMA BOYLII. From Rana boyllii boyllii--U. S. A.
- TRYPANOSOMA BUTANTANENSE (? = T. rotatorium). From Bufo paracnemis--S. Amer.
- TRYPANOSOMA CELESTINOI (? = T. rotatorium). From Leptodactylus ocellatus--S. Amer.
- TRYPANOSOMA CHATTONI (? = T. rotatorium). From Bufo melanostictus, Rana tigrina--Asia.
- TRYPANOSOMA CLAMATAE (? = T. rotatorium, ? = T. parvum, Kudo, 1922). From Rana clamitans--U. S. A.
- TRYPANOSOMA CLELANDI (? = T. rotatorium). From Limnodynastes ornatus, L. tasmaniensis--Australia.
- TRYPANOSOMA CRYPTOBRANCHI. From Cryptobranchus alleganiensis, Taricha granulosa twittyi--U. S. A.
- TRYPANOSOMA DIEMYCTYLI. From Notophthalmus viridescens, Taricha granulosa twittyi--U. S. A. Intermediate host, leeches (Batrachobdella picta, ? Placobdella parasitica).
- TRYPANOSOMA GAUMONTIS. From Bufo americanus--Canada.
- TRYPANOSOMA GRANULOSA. From Taricha granulosa twittyi--U. S. A.
- TRYPANOSOMA GRYLLI. From Acris gryllus--U. S. A.
- TRYPANOSOMA HENDERSONI (? = T. inopinatum). From Rana tigrina--Asia.
- TRYPANOSOMA HYLAE (? = T. rotatorium). From Hyla arborea--Europe.
- TRYPANOSOMA INOPINATUM (= T. elegans, = T. undulans, ? = T. hendersoni). From Bufo regularis--Africa; Rana hexadactyla, R. tigrina tadpoles--Asia; Rana esculenta, R. temporaria--Europe; Rana catesbiana--Canada; Rana pipiens--

- U. S. A.; Hyla sp?, Rana montezumae, R. pipiens--Mexico. Sporogony in leeches (Helobdella algira, Hemiclepsis marginata, Piscicola geometra, etc.).
- TRYPANOSOMA KARYOZEUKTON (? = T. rotatorium). From Bufo regularis, Rana nutti--Africa; "Anura"--U. S. A. (Lauter, 1960).
- TRYPANOSOMA LAVALIA. From Bufo americanus--Canada.
- TRYPANOSOMA LEPTODACTYLI (? = T. rotatorium). From Leptodactylus ocellatus--Brazil. Sporogony in leech (Placobdella braziliensis).
- TRYPANOSOMA LORICATUM (= Paramecium loricatum, ? = T. rotatorium). From "Frogs" and "Toads"--Europe.
- TRYPANOSOMA MEGA (? = T. rotatorium). From Bufo regularis, Rana tuberculosa--Africa; Rana terrestris (? = R. arvalis)--Europe.
- TRYPANOSOMA MONTEZUMAE. From Hyla sp?, Rana montezumae, R. pipiens--Mexico.
- TRYPANOSOMA MONTREALIS. From Bufo americanus--Canada.
- TRYPANOSOMA NELSPRUITENSE (? = T. rotatorium). From Rana angolensis, R. theileri--Africa.
- TRYPANOSOMA NEVEU-LEMAIREI (? = T. rotatorium). From Rana esculenta--Corsica.
- TRYPANOSOMA OCELLATI (? = T. rotatorium). From Leptodactylus ocellatus--S. Amer.
- TRYPANOSOMA PARROTI (? = T. rotatorium). From Discoglossus pictus--Africa.
- TRYPANOSOMA PARVUM Kudo (Homonym of T. parvum Castellani & Chalmers, ? = T. clamatae). From Rana clamitans--U. S. A.
- TRYPANOSOMA PIPIENTIS. From Rana pipiens, R. sylvatica--U. S. A. Intermediate host, Placobdella phalera (leech).
- TRYPANOSOMA ROTATORIUM (= Amoeba rotatoria, = Paramoecium costatum, = P. loricatum, = Trypanosoma sanguinis, = Globularia radiata sanguinis, = Monas rotatoria, = Undulina ranarum, = Paramecioides costatum, = Trypanosoma ranarum, = Trichomonas ranarum, = T. batrachorum, etc.). From Bufo bufo, B. viridis, Discoglossus pictus, Hyla arborea, Rana esculenta, R. temporaria, R. terrestris (? = arvalis)--Europe; Bufo mauritanicus, B. regularis, B. reticulatus, Discoglossus pictus, Leptopelis sp?, Rana albilabris, R. angolensis, R. nutti, R. occipitalis, R. oxyilynchus, R. theileri, R. trinodis, R. tuberculosa--Africa; Bufo metanostictus, R. guntheri, R. limnocharis, R. tigrina--Asia; "Frogs"--Turkestan; Limnodynastes ornatus, L. tasmaniensis, Uperoleia sp?--Australia; Rana catesbiana, R. sylvatica--Canada; Bufo compactilis, B. fowleri, Hyla andersoni, H. crucifer, H. versicolor, Notophthalmus viridescens, Pseudacris brimleyi, Rana catesbiana, R. clamitans, R. palustris, R. pipiens, R. sphenocéphala, R. sylvatica, and "Anura" (Lauter, 1960).

--U. S. A.; Hyla sp?, Rana montezumae, R. pipiens--Mexico; Rana pipiens, R. warschewitschii--Costa Rica; Bufo paracnemis (exper.), Hyla raddiana, H. rubra, Leptodactylus ocellatus, L. spp?--S. Amer. Sporogony in leeches, Placobdella braziliensis, P. marginata, etc. Mosquito, Aedes aegypti, feeding on Rana pipiens can serve as a vector (Bailey, 1962).

TRYPANOSOMA ROTATORIUM LISCIA (? = T. rotatorium). From "Frogs"--Europe.

TRYPANOSOMA ROTATORIUM MAJOR (? = T. rotatorium). From Hyla raddiana--S. Amer.

TRYPANOSOMA ROTATORIUM NANA (? = T. rotatorium). From Rana temporaria--Europe.

TRYPANOSOMA ROTATORIUM STRIATA (= T. striatum, ? = T. rotatorium). From "Frogs"--Europe.

TRYPANOSOMA SERGENTI (? = T. rotatorium). From Discoglossus pictus--Africa.

TRYPANOSOMA SOMALENSE (? = T. rotatorium). From Bufo regularis, B. reticulatus--Africa.

TRYPANOSOMA STRIATUM (= T. rotatorium striata, ? = T. rotatorium). From Rana esculenta--Europe.

TRYPANOSOMA TRITONIS. From Triturus pyrrhogaster--Japan; ? from Taricha granulosa twittyi--U. S. A.

TRYPANOSOMA TUMIDA (? = T. rotatorium). From Rana nutti--Africa.

TRYPANOSOMA VARANI (probably T. rotatorium; T. varani normally in reptiles). From Bufo regularis--Africa. Vector probably Glossina spp? (Wenyon, 1926).

TRYPANOSOMA sp?, Bancroft, 1890. From Hyla leseurii, H. nasuta--Australia.

TRYPANOSOMA sp?, Barestnev, 1902. From "Frogs"--E. Indies.

TRYPANOSOMA sp?, Bouet, 1909. From Bufo regularis--Africa.

TRYPANOSOMA sp?, Carini, 1907. From Leptodactylus ocellatus--S. Amer.

TRYPANOSOMA sp?, Castellani & Chalmers, 1913. From Notophthalmus viridescens--U. S. A.

TRYPANOSOMA sp?, Cleland & Johnston, 1910. From Limnodynastes ornatus, L. tasmaniensis--Australia.

TRYPANOSOMA sp?, Danilewsky, 1885. From Rana temporaria--Europe.

TRYPANOSOMA sp?, Dobell, 1910. From Rana hexadactyla. R. tigrina--India.

TRYPANOSOMA sp?, Drbohlav, 1925. From Rana pipiens (exper.)--U. S. A.

TRYPANOSOMA sp?, Dutton & Todd, 1903. From Rana trinodis--Africa.

TRYPANOSOMA sp?, Dutton, Todd, et alii, 1907. From Hyperolius marmoratus, Rana galamensis, R. mascareniensis, R. oxyrhynchus--Africa.

- TRYPANOSOMA sp?, Franca, 1908. From "Frog"--Europe.
- TRYPANOSOMA sp?, Grassi, 1882. From Bufo bufo--Europe.
- TRYPANOSOMA sp?, Hegner, 1920. From Rana catesbiana, R. clamitans--U.S.A.
- TRYPANOSOMA sp?, Johnston, 1916. From Hyla leseurii, H. nasuta--Australia.
- TRYPANOSOMA sp?, Koidzumi, 1911. From Rana rugosa--Japan.
- TRYPANOSOMA sp?, Laveran, 1904. From Rana angolensis--Africa.
- TRYPANOSOMA spp?, Laveran & Mesnil, 1912. From Bufo bufo, B. viridis, Hyla arborea, Rana temporaria--Europe; Bufo regularis, B. reticulatus, Hyperolius marmoratus, Rana angolensis, R. galamensis, R. mascareniensis, R. oxyrhynchus, R. trinodis--Africa; Bufo melanostictus, Microhyla pulchra, Polypedates leucomastix, R. güntheri, R. hexadactyla, R. limnocharis, R. rugosa, R. tigrina--Asia; Hyla leseurii, H. nasuta, H. venulosa, Limnodynastes ornatus, L. tasmaniensis--Australia; Notophthalmus viridescens--U.S.A.; Hyla rubra, Leptodactylus ocellatus--S. Amer. (mainly a check list of known records--possibly most are Trypanosoma rotatorium).
- TRYPANOSOMA spp?, Mathis & Leger, 1911. From Microhyla pulchra, Polypedates leucomastix, Rana güntheri, R. limnocharis--Asia (a check list).
- TRYPANOSOMA sp?, Matubayasi, 1937. From Triturus pyrrhogaster--Japan.
- TRYPANOSOMA spp?, Nigrelli, 1945. From Hyla andersoni, H. crucifer, H. versicolor, Rana pipiens--U.S.A.
- TRYPANOSOMA sp?, Ogawa & Uegaki, 1925. From Rana plancyi--China.
- TRYPANOSOMA sp?, Pearse, 1912. From Triturus pyrrhogaster--Japan.
- TRYPANOSOMA spp?, Plimmer, 1912. From Hyla arborea, Rana esculenta--Europe; Hyla venulosa--S. Amer.
- TRYPANOSOMA spp?, Rankin, 1937. From Notophthalmus viridescens--U.S.A.
- TRYPANOSOMA sp?, Scott, 1926. From Rana macrodon--Zool. Gard., London, Eng.
- TRYPANOSOMA sp?, Scott, 1928. From Rana tigrina--Zool. Gard., London, Eng.
- TRYPANOSOMA sp?, Stevenson, 1911. From Bufo sp? (? B. regularis)--Africa.
- TRYPANOSOMA sp?, Walton, 1941 (= Paramoecioides sp?, Musgrave & Clegg, 1903). From "Frogs"--Philippine Islands.
- TRYPANOSOMA sp?, Wedl, 1850. From Hyla arborea--Europe.
- TRYPANOSOMA sp?, Wenrich, 1935. From Rana aurora draytoni--U.S.A.
- TRYPANOSOMA sp?, Wenyon, 1928. From Rana tigrina--Zool. Gard., London, Eng.
- TRYPANOSOMA sp?, Wenyon (in Hamerton, 1934). From Leptodactylus ocellatus--Zool. Gard., London, Eng.

SARCODINA

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- "Amoeba" s. l.
- "AMOEBEA" LIMAX. From Pelobates fuscus, Rana esculenta--Europe.
- "AMOEBEA" OBLONGA (= A. lobosa oblonga). From Rana sp?--Europe.
- "AMOEBEA" SPINOSA. From Rana esculenta --Europe; "Frogs"--Africa.
- "AMOEBEA" sp?, Fantham, 1922. From Xenopus laevis--Africa.
- "AMOEBEA" sp?, Johnston, 1916. From Hyla caerulea--Australia.
- CHLAMYDOPHRYS STERCOREA (= Platoum s., = Diffugia enchelys e.p., = Chlamydothryx e. e.p., = Trinema e. e.p., = Troglodytes zoster. Leydenia gemmipara, reported by Schaudin, 1903, as the amoeboid phase of C. stercorea is probably only as artifact). From faeces of Bufo bufo, Rana esculenta, R. temporaria--Europe.
- COPRAMOEBEA SALAMANDRAE. From Notophthalmus viridescens--U.S.A.
- ENDOLIMAX RANARUM (= Naegleria r.). From tadpoles and adults, Rana clamitans, R. pipiens, R. septentrionalis--U.S.A.
- ENTAMOEBEA CURRENS (= Amoeba c.). From Bombina pachypus, Bufo bufo, Rana esculenta--Europe.
- ENTAMOEBEA INVADENS. From Rana temporaria--Europe. (exper., normally in snakes).
- ENTAMOEBEA MORULA. From Hyla aurea, H. leseurii, H. peronii, Limnodystes dorsalis, L. tasmaniensis--Australia.
- ENTAMOEBEA PYRRHOGASTER (? = E. sp?, Chatton, 1910, E. sp?, Alexeieff, 1912, and possibly all E. ranarum records from salamanders--see Lobeck, 1940). From Triturus pyrrhogaster (introduced), Notophthalmus viridescens--U.S.A.; ? Triturus helveticus, ? T. vulgaris--Europe.
- ENTAMOEBEA RANARUM (= Amoeba ranae, = Amoeba ranarum, = Entamoeba ranae, = Löschia ranarum, = Proctamoeba r.). From Alytes obstetricans, Bombina pachypus, Bufo bufo, B. calamita, Discoglossus pictus, Pelobates fuscus, Rana esculenta, R. temporaria, Triturus helveticus, T. vulgaris--Europe; Rana tigrina--India; Notophthalmus viridescens, Rana aurora, R. catesbiana, R. clamitans, R. septentrionalis, R. sphenoccephala--U.S.A. (Often in tadpoles). (may form liver abscesses).
- ENTAMOEBEA (= Endamoeba) sp?, Chen & Stabler, 1936. From Physalaemus signifera--S. Amer.
- ENTAMOEBEA sp?, Fantham, 1923. From Bufo regularis--Africa.
- SACCAMOEBEA RENACUAJO. From Bufo marinus--S. Amer.
- VAHLKAMPFIA FROSCI (= Amoeba f.). From "Frogs"--Europe.
- VAHLKAMPFIA RANARUM. From "Frogs"--Europe; "Frogs"--Turkestan.

VAHLKAMPFIA SALAMANDRAE. From Triturus pyrrhogaster--U.S.A. (introduced).

VAHLKAMPFIA sp?, Lehmann, 1960. From Dicamptodon ensatus, Ensatina eschscholtzii, Rana boylei--U.S.A.

SPOROZOA

BABESIOSOMA JAHNI (= Dactylosoma j.). From blood of Notophthalmus viridescens--U.S.A. (intraerythrocytic).

BABESIOSOMA STABLERI. From blood of Rana pipiens--U.S.A. Exper. in Bufo americana, B. fowleri, B. terrestris, Rana catesbiana, R. sphenoccephala--U.S.A. (intraerythrocytic).

CARINIELLA CARINII. From Leptodactylus ocellatus--Brazil.

CHLOROMYXUM CAUDATUM. From Triturus cristatus--Europe.

CHLOROMYXUM PROTEI. From Proteus anguinus--Europe.

CYTAMOEBA BACTERIFERA (= C. ranarum, ? = Haemaphysium reidyi, Eisen, 1897). From blood of Ambystoma maculatum, A. opacum, A. tigrinum, Aneides flavipunctatus, A. lugubris, Batrachoseps attenuatus, Desmognathus fuscus, D. phoca, D. quadramaculatus, Dicamptodon ensatus, Ensatina eschscholtzi, Eurycea bislineata wilderae, E. longicauda guttolineata, Notophthalmus viridescens, Plethodon cinereus, P. glutinosus, P. yonahlossee, Pseudotriton ruber, Rana boylei, R. catesbiana, R. clamitans, R.

pipiens, R. sphenoccephala--U.S.A.; Rana esculenta--Europe. (usually associated with Bacillus krusei, Laveran, 1899).

CYTAMOEBA GRASSI. From blood of Hyla arborea--Europe.

DACTYLOSOMA RANARUM (= Drepanidium r.; = Haemogregarina r.; = Lavarania r.; = Haemogregarina splendens; = Dactylosoma s.; ? = Haemoproteus ranarum, Vuillemin, 1929). From blood of Rana esculenta, R. temporaria--Europe; Rana albilabris, R. galamensis, R. ridibunda--Africa; Rana guntheri, R. limnocharis, R. tigrina--Asia; Bufo marinus--Cent. & S. Amer.

DACTYLOSOMA SYLVATICA. From Rana sylvatica--Canada.

DACTYLOSOMA TRITONIS (= Lankesterella t.; = Haemogregarina t.). From Rana galamensis--Africa; Triturus cristatus--Europe.

DACTYLOSOMA sp?, Hunter, 1908. From Rana esculenta--Europe.

DACTYLOSOMA sp?, Wenyon (in Hamerton, 1931). From Rana adspersa--Zool. Gard., London, Eng.

DACTYLOSOMA sp?, Ruiz, 1959. From Bufo marinus--Costa Rica.

EIMERIA AMBYSTOMAE. From rectum of larval Ambystoma tigrinum--U.S.A.

EIMERIA BELAWINI. From Hyla arborea--Europe.

EIMERIA CANALICULATA. From Triturus alpestris, T. cristatus, T. helveticus,

- T. vulgaris--Europe.
- EIMERIA CYANOPHLYCTIS. From Rana cyanophlyctis--India.
- EIMERIA DISTORTA. From rectum of larvae of Ambystoma tigrinum--U. S. A.
- EIMERIA GROBBENI. From Salamandra atra--Europe; Ambystoma tigrinum, Taricha torosa--U. S. A.
- EIMERIA HIMALAYANUM. From Bufo himalayanus--India.
- EIMERIA KINGI. From Ambystoma tigrinum--U. S. A.
- EIMERIA LAMINATA. From Bufo melanostictus--India.
- EIMERIA LEPTODACTYLI. From Leptodactylus ocellatus--Brazil.
- EIMERIA LONGASPORA. From Notophthalmus viridescens--U. S. A.
- EIMERIA MAZZAI. From Bufo bufo--Europe; Bufo melanostictus--Asia
- EIMERIA MEGARESIDUA. From Notophthalmus viridescens--U. S. A.
- EIMERIA NEGLECTA. From tadpoles of Rana esculenta, R. temporaria--Europe.
- EIMERIA PREVOTI (= Paracoccidium p., = Eimeria prevoti). From Rana esculenta--Europe.
- EIMERIA PRINCEPS (= Drepanidium p.). From Rana esculenta--Europe.
- EIMERIA PROPRIA (= Orthospora p. e. p.; = Coccidium p.). From Salamandra salamandra, Triturus alpestris, T. cristatus, T. hagenmülleri, T. helveticus, T. marmoratus, T. vulgaris--Europe; ? in Triturus pyrrhogaster--Japan.
- EIMERIA PYLORI (= Coccidium p.). From Rana sp?--Europe. (possibly egg of Distomum turgidum, not a protozoon at all).
- EIMERIA RANAE (= Coccidium r.). From Rana esculenta, R. temporaria--Europe.
- EIMERIA RANARUM (= Karyophagus r.; = Coccidium r.). From Rana esculenta, R. temporaria--Europe; "Frogs"--Turkestan; Ambystoma opacum--U. S. A.
- EIMERIA SALAMANDRAE (= Karyophagus s.; = Coccidium s.; = Cystophagus s.; = Caryophagus s.). From Salamandra maculata, S. salamandra--Europe.
- EIMERIA SALAMANDRA ATRAE (= Coccidium s. a.). From Salamandra atra--Europe.
- EIMERIA SPHERICA (= Orthospora propria e. p.; = Coccidium sphericum). From Triturus alpestris, T. cristatus, T. helveticus, T. palmatus, T. vulgaris--Europe; ? in Triturus pyrrhogaster--Japan.
- EIMERIA TERTIA. From Triturus alpestris, T. cristatus--Europe.
- EIMERIA TRANSCAUCASIA (probably is E. mazzai). From Bufo bufo--S. E. Europe.
- EIMERIA TRITONIS (= Karyophagus t.; = Coccidium t.; = Pfeifferia t.; = Pfeifferella t.; = Caryophagus t.; = Cystophagus t.). From Triturus cristatus--Europe.

- EIMERIA WALTONI. From Ambystoma tigrinum --U. S. A.
- EIMERIA sp?, Rudovsky, 1925. From Salamandra atra--Europe.
- GLUGEA DANILEWSKYI (= Plistophora d.; = Glugea (Nosema) d.; = G. (Pleistophora) d.). From Rana temporaria--Europe.
- HAEMOGREGARINA AURORAE. From blood of Rana a. aurora--U. S. A.
- HAEMOGREGARINA BERESTNIEFFI. From Rana hexadactyla, R. limnocharis, R. tigrina--India.
- HAEMOGREGARINA BOUETI (bouetti). From Bufo melanostictus--India; Bufo regularis Africa.
- HAEMOGREGARINA BOYLII. From Rana b. boylii--U. S. A.
- HAEMOGREGARINA BUFO MARINUS. From Bufo marinus--Argentina.
- HAEMOGREGARINA CATESBIANAE. From Rana catesbiana--U. S. A.
- HAEMOGREGARINA CAYENNENSIS. From Bufo marinus--Argentina.
- HAEMOGREGARINA CLAMATAE (= Karyolysus c.). From Rana clamitans, R. pipiens --U. S. A.
- HAEMOGREGARINA DARLINGI. From Bufo marinus--Cent. Amer.
- HAEMOGREGARINA FROILANO. From Bufo regularis--Africa.
- HAEMOGREGARINA HETERONUCLEATA. From Leptodactylus pentadactylus--Brazil.
- HAEMOGREGARINA HORTAI. From Rana esculenta--Europe.
- HARMOGREGARINA (? LANKESTERELLA) HYLAE. From Hyla caerulea--Australia.
- HAEMOGREGARINA HYPEROLII. From Hyperolius sp?--Africa.
- HAEMOGREGARINA LEGERI. From Bufo marinus--Venezuela.
- HAEMOGREGARINA LEPTODACTYLI. (= Lankesterella l.). From Leptodactylus ocellatus--Brazil. (Cunha & Muniz, 1927, think form is probably a Karyolysus sp.).
- HAEMOGREGARINA NEIRETI. From Rana mascareniensis--Africa.
- HAEMOGREGARINA NUCLEOBISECANS (= H. bisekans, Wenyon, 1926). From Bufo melanostictus--India.
- HAEMOGREGARINA PESTANAE. From Bufo regularis, Hyperolius marmoratus, Rana galamensis, R. mascareniensis, R. oxyrhynchus--Africa.
- HAEMOGREGARINA RIEDYI (= Haemaphysium r.). From Batrachoseps attenuatus--U. S. A.
- HAEMOGREGARINA SCHEINI. From Rana limnocharis, R. tigrina--S. E. Asia.
- HAEMOGREGARINA THEILERI. From Rana angolensis--Africa.
- HAEMOGREGARINA TONKINENSIS. From Bufo melanostictus--Fr. Indo-China.
- HAEMOGREGARINA TUNISIENSIS. From

- Bufo mauritanicus, B. regularis--Africa.
- HAEMOGREGARINA sp?, Averinstev, 1913.
From Rana nutti--Africa.
- HAEMOGREGARINA sp?, Bailey, 1948.
From Rana pipiens--U.S.A.
- HAEMOGREGARINA sp?, Balfour, 1908.
From Bufo regularis--Africa.
- HAEMOGREGARINA sp?, Berestnev, 1902.
From Rana limnocharis, R. tigrina--
S.E. Asia.
- HAEMOGREGARINA sp?, Bouet, 1909.
From Bufo regularis--Africa.
- HAEMOGREGARINA sp?, Brumpt, 1928.
From Rana esculenta--Europe.
- HAEMOGREGARINA sp?, Darling, 1912.
From Bufo marinus--Cent. Amer.
- HAEMOGREGARINA sp?, Dobell, 1910.
From Rana tigrina--India.
- HAEMOGREGARINA sp?, Fowler, 1946.
From Rana pipiens--U.S.A.
- HAEMOGREGARINA sp?, Franca, 1911.
From Bufo regularis--Africa.
- HAEMOGREGARINA spp?, Franca, 1917.
From Bufo regularis, Rana nutti--Africa;
Bufo melanostictus, Rana limnocharis,
R. tigrina--S.E. Asia; Bufo marinus,
Leptodactylus ocellatus--S. Amer.
- HAEMOGREGARINA sp?, Hoare, 1921.
From Bufo sp?--Africa.
- HAEMOGREGARINA sp?, Houdemer, 1927.
From Bufo melanostictus, Rana limno-
charis, R. tigrina--Fr. Indo-China.
- HAEMOGREGARINA sp?, Kufu, 1922. From
Rana clamitans, R. pipiens--U.S.A.
- HAEMOGREGARINA sp?, Leger, 1918. From
Pipa pipa--S. Amer.
- HAEMOGREGARINA spp?, Mathis & Léger,
1911. From Bufo melanostictus, Rana
limnocharis, R. tigrina--Fr. Indo-China.
- HAEMOGREGARINA sp?, Parodi, 1918.
From "Frogs"--S. Amer.
- HAEMOGREGARINA spp?, Plimmer, 1912.
From Bufo regularis--Africa; Bufo marinus,
Leptodactylus sp?--S. Amer.
- HAEMOGREGARINA sp?, Prowazek, 1910.
From Bufo melanostictus--Asia.
- HAEMOGREGARINA sp?, Salm, 1907. From
"Frogs"--S.E. Asia.
- HAEMOGREGARINA sp?, Sanders, 1928.
From Rana clamitans--U.S.A.
- HAEMOGREGARINA sp?, Schein, 1911.
From Rana tigrina--Asia.
- HAEMOGREGARINA sp?, Schwetz, 1938.
From Rana mascareniensis, R. occipitalis
--Belgian Congo.
- HAEMOGREGARINA spp?, Scott, 1928.
From Rana pipiens, R. tigrina--Zool.
Gard., London, Eng.
- HAEMOGREGARINA spp?, Wenyon (in Hamerton,
1931). From Rana macrodon, R. tigrina
--Zool. Gard., London, Eng.
- HAEMOGREGARINA sp?, Wenyon (in Hamer-
ton, 1933). From Bufo marinus--Zool.
Gard., London, Eng.

- HAEMOGREGARINA spp?, Wenyon (in Hamerton, 1934). From Bufo marinus, Rana tigrina--Zool. Gard., London, Eng.
- "Haemogregarines", Fantham, Porter & Richardson, 1942. From Bufo americanus, Rana catesbiana, R. pipiens--Canada.
- HAEMOPROTEUS LANORAIEA. From Bufo americanus--Canada.
- HAEMOPROTEUS LAURENTIAE. From Bufo americanus--Canada.
- HAEMOPROTEUS LAVALIA. From Bufo americanus--Canada.
- ISOSPORA CRUZI. From Hyla crospeospila, H. fuscovaria, H. nasica, H. rubra--S. Amer.
- ISOSPORA HYLAE. From Hyla arborea--Europe.
- ISOSPORA JEFFERSONIANUM. From Ambystoma jeffersonianum--U.S.A.
- ISOSPORA STOMATICA. From Rana cyanophlyctis--India.
- ISOSPORA LIEBERKÜHNI (= Klossia l.; = Hyaloklossia l.). From Bufo sp?, Rana esculenta, R. temporaria--Europe.
- ISOSPORA NEOS. From Rana terrestris (?=R. arvalis)--Europe.
- ISOSPORA RANAE (= Cytospermium r.). From Rana esculenta--Europe.
- ISOSPORA WENYONI. From Bufo melanostictus--India.
- ISOSPORA WLADIMIROVI. From Hyla arborea--Europe.
- ISOSPORA sp?, Grassi, 1882. From Bufo sp?--Europe.
- ISOSPORA sp?, Wenyon, 1928. From Bufo bufo--Europe.
- KARYOLYSUS AQUAI (= Haemogregarina aquai). From Bufo marinus--S. Amer.
- KARYOLYSUS SONOMAE. From blood of Rana b. boyllii--U.S.A. (probably transmitted by mite, Hannemania dunni).
- KARYOLYSUS sp?, Brandt, 1936. From Rana catesbiana, R. sphenoccephala--U.S.A.
- KARYOLYSUS sp?, Gourvitch, 1926. From "Frogs"--Turkestan.
- KARYOLYSUS sp?, Sanders, 1928. From Rana clamitans--U.S.A.
- LANKESTERELLA BUFONIS. From Bufo regularis--Egypt.
- LANKESTERELLA CANADENSIS. From Rana catesbiana--Canada.
- LANKESTERELLA MINIMA (= Anguillula m.; = Drepanidium magnum; = D. ranarum, = Haemogregarina r.; = Drepanidium krusei e.p. (H. r., renamed); = Laverania ranarum e.p.; = Danielewskya krusei e.p.; = Drepanidium princeps; = D. monilis; = Lankesterella ranarum; = L. monilis; = Haemogregarina magna; = H. minima; = Lankesterella magna). From Bufo sp?, Rana esculenta, R. temporaria--Europe; Rana esc. ridibunda--Africa; "Frogs"--Turkestan; Rana hexadactyla, R. himnocharis, R. tigrina--S.E. Asia.

- LANKESTERELLA sp?, Brandt, 1936, From Rana catesbiana, R. sphenoccephala--U.S.A.
- LANKESTERELLA sp?, Sanders, 1928. From tadpoles of Rana catesbiana, adults and tadpoles of R. clamitans--U.S.A.
- LANKESTERELLA sp?, Schwetz, 1938. From Rana occipitalis--Africa (Congo).
- LANKESTERELLA spp?, Scott, 1926. From Rana palustris, R. tigrina--Zool. Gard., Lond. Eng.
- LANKESTERELLA sp?, Scott, 1928. From Rana tigrina--Zool. Gard., London, Eng.
- LANKESTERELLA spp?, Wenyon (in Hamerton, 1931). From Bufo marinus, Rana tigrina--Zool. Gard., London, Eng.
- LANKESTERELLA sp?, Wenyon (in Hamerton, 1932). From Rana tigrina--Zool. Gard., London, Eng.
- LANKESTERELLA sp?, Wenyon (in Hamerton, 1933). From Rana catesbiana, R. erythraea--Zool. Gard., London, Eng.
- LEPTOTHECA CHAGASI. From urinary bladder of Leptodactylus ocellatus--S. Amer.
- LEPTOTHECA OHLMACHERI (= Chloromyxum o.; = Wardia o.; = Leptotheca ranae). From Bufo americanus, B. terrestris, B. varliceps, Rana catesbiana, R. clamitans, R. pipiens, R. sphenoccephala--U.S.A.; Pelobates fuscus, Rana esculenta, R. temporaria--Europe (as L. ranae).
- Leptotheca "ranarum". (Minchin, 1912, used this name for Leptotheca of frogs in general, and not as a specific combination for a particular species).
- MICROCOCCIDIUM CARYOLITICUM. From Salamandra salamandra--Europe.
- MOLYBDIS ENTZI. From Rana esculenta--Europe.
- MYXIDIUM IMMERSUM (= Cystodiscus i.; = Cytodiscus i.; = Sphaeromyxa i.; ? = Myxidium lindoyense). From Atelopus stelzneri, Bufo arenarum, B. d'orbignyi, B. marinus, Ceratophrys americana, Hyla raddiana, Leptodactylus ocellatus, L. prognathus, Limnomedusa macroglossa, Pleurodema bibronii, Pseudis mantidactyla--S. Amer.
- MYXIDIUM LINDOYENSE (? = M. immersum). From Bufo marinus, Hyla nebulosa, H. rubra, Leptodactylus ocellatus, Physalaemus signiferus--Brazil.
- MYXIDIUM SEROTINUM From Bufo terrestris, Rana clamitans, R. pipiens, R. sp?--U.S.A.
- MYXOBOLUS CONSPICUUS. From Notophthalmus viridescens--U.S.A.
- MYXOBOLUS HYLAE (? = "Myxosporidium" of Fletcher, 1888). From Hyla aurea--Australia.
- MYXOSOMA RANAE (= Myxobolus ranae). From Rana temporaria--Europe. "Myxosporidium", Fletcher, 1888 (? = Myxobolus hylae). From Hyla aurea--Australia.
- NEMATOPSIS TEMPORARIAE. From Rana

temporaria--Europe. (Probably an accidental infestation - other species of genus normally only in crayfish).

PLASMIDIUM BUFONIS (? = Dactylosoma ranarum). From Bufo americanus--Canada.

PLASMIDIUM CATESBIANA (? = Dactylosoma ranarum). From Rana catesbiana--Canada. (see Ruiz, 1959).

PLISTOPHORA BUFONIS (? = Bertramia bufonis). From Bufo bufo--Europe; Bufo lentiginosus (= americanus)--U.S.A.

PSEUDOGREGARINA RANAE. From Rana nutti--Africa.

PSEUDOHAEMOGREGARINA RANAE. From blood of Rana nutti--S. Europe.

TOXOPLASMA CUNICULI (possibly a coccidium). From Leptodactylus ocellatus--Brazil (exper., normally in rabbits).

TOXOPLASMA SERPAI. From Bufo marinus--Venezuela.

WARDIA OVINOCUA. From Amphibia--N. Amer. (rare--usually only in fish).

ZSCHOKKELLA AUERBACHI (= Cystodiscus a.). From Bufo melanostictus--Fr. Indo-China.

ZSCHOKKELLA PRASHADI Ray, 1933. From Bufo melanostictus, Rana tigrina--India. (Nomen nudum? neither described or figured).

CILIATA

AMPHILEPTUS BRANCHIARUM. From skin

and gills of tadpoles of Rana catesbiana, R. clamitans, R. palustris--U.S.A.

AMPHILEPTUS CLAPAREDEI. On tadpoles of Pelobates fuscus, Rana esculenta--Europe.

BALANTIDIUM AMBLYSTOMATIS. From Ambystoma tigrinum--U.S.A.

BALANTIDIUM AMYGDALLI. From Bufo macrotis--India.

BALANTIDIUM BICAVATA. From Bufo melanostictus--India.

BALANTIDIUM DUODENI (= Balantidiopsis d.; = Balantidium hyalinum). From Rana esculenta, R. temporaria--Europe; Micrixalus opisthorhodus, M. saxicola, Rana cyanophlyctis, R. leptodactyla, R. limn-charis, ? R. temporaria, R. tigrina--India.

BALANTIDIUM ELONGATUM (= Protobalantidium e.). From Bombina bombina, Rana esculenta, R. temporaria, Triturus alpestris, T. cristatus, T. vulgaris--Europe; "Frog"--Turkestan; ? Rana tigrina--India.

BALANTIDIUM ENTOZOOON (= ? Bodo entozoon p.p.; = Bursaria e.; = B. nucleus e.p.; = Leucophrys entozoon; = Protobalantidium e.). From Bombina, Bufo bufo, Pelobates fuscus, Rana esculenta, R. temporaria, R. terrestris (? = R. arvalis), Triturus cristatus, T. vulgaris--Europe; Phrynobatrachus natalensis, Xenopus laevis--Africa. (J.H. Mohr, personal letter of 4/10/40, states that the B. entozoon reported by Fantham from X. laevis is a true Balantidium, but not B. entozoon). Also reported from Turkestan.

- BALANTIDIUM FALCIFORMIS (= Protobalantidium f.; = Balantidium falcifarum). From Rana palustris--U. S. A.
- BALANTIDIUM GALIANOI. From Pleurodeles waltlii--Spain.
- BALANTIDIUM GIGANTEUM Bezenberger, 1903 (nec B. giganteum of Krause, 1906). From Rana esculenta--Europe; Rana nigromaculata--India.
- BALANTIDIUM GRACILE (= Protobalantidium g.). From Micrixalus opisthorhodus, M. saxicola, Rana cyanophlyctis, R. hexadactyla, R. limnocharis, R. temporaria, R. tigrina--India.
- BALANTIDIUM HELENAE (= B. ovale). From Micrixalus opisthorhodus, M. saxicola, Rana cyanophlyctis, R. hexadactyla, R. leptodactyla, R. limnocharis, R. temporaria, R. tigrina, Uperodon systema--India; Rana curtipes--Goa; Rana esculenta--Europe.
- BALANTIDIUM HELENAE SAIGONENSIS. From Rana tigrina rugulosa--Viet-Nam.
- BALANTIDIUM NUCLEUS (= Chaos intestinalis cordiformis e.p.; = Paramoecium nucleus; = Bursaria intestinalis e.p.; = B. nucleus). From Rana esculenta, R. temporaria--Europe.
- BALANTIDIUM RANARUM (= Protobalantidium r.). From Rana tigrina rugulosa--Viet-Nam.
- BALANTIDIUM ROTUNDUM. From Rana nigromaculata--India; "Frogs"--Turkestan.
- BALANTIDIUM ROTUNDUM MAJOR. From Rana tigrina rugulosa--Viet Nam.
- BALANTIDIUM ROTUNDUM MINOR. From Rana tigrina rugulosa--Viet-Nam.
- BALANTIDIUM SINENSIS MINUTUM. From Rana glintheri--China.
- BALANTIDIUM SUSHILII. From Rana tigrina rugulosa--Viet-Nam.
- BALANTIDIUM spp?, Boisson, 1957. From Bufo melanostictus (1 sp?), Rana c. cancrivora (2 spp?)--Viet-Nam.
- BALANTIDIUM spp?, Chakravorti, 1933. From Bufo melanostictus, Rana tigrina rugulosa--Viet-Nam.
- BALANTIDIUM sp?, Dobell, 1910. From Rana tigrina--India.
- BALANTIDIUM sp?, Johnston, 1916. From Hyla caerulea--Australia.
- BALANTIDIUM sp?, Kudo, 1924. From Bufo marinus--S. Amer.
- BALANTIDIUM sp?, Matubayasi, 1937. From Triturus pyrrhogaster--Japan.
- BALANTIDIUM spp?, Metcalf, 1923. From Bufo americanus copei, B. boreas, B. compactilis, B. fowleri, B. valliceps, B. woodhousii, Hyla cinerea evittata, H. versicolor, Rana areolata, R. sylvatica latiremis--N. Amer.; Hyla septentrionalis--Cuba; Bufo coniferus, B. haematiticus, Hyla baudinii, Leptodactylus microtus, Phyllomedusa dacnicolor--Cent. Amer.; Bufo variegatus, Eupemphix trinitatis, Hyla venulosa, Phyllobates trinitatis,

Pleurodema bibroni--S. Amer.; Bufo polycercus, Hylambates rufus, Rana mascareniensis, R. nutti, Xenopus calcaratus--Africa; Rana limnocharis, R. nigromaculata--Asia; Bufo cruentatus--Java; Notaden bennetti--Australia.

BALANTIDIUM sp?, Mohr, 1942. From Xenopus laevis--Africa.

BALANTIDIUM sp?, Pearse, 1932. From Triturus pyrrhogaster--Japan.

BALANTIDIUM sp?, Thomson (in Hamerton, 1936). From Xenopus laevis--Zool. Gard., London, Eng.

BALANTIDIUM sp?, Wichterman, 1934. From Rana spinosa--Fr. Indo-China.

BERTARELLIA LEPTODACTYLI. In blood of Leptodactylus pentadactylus--Brazil.

CEPEDEA AFFINIS (= Opalina a.). From "Frogs"--Africa.

CEPEDEA BAUDINI. From Hyla baudini--Cent. Amer.

CEPEDEA BORNEOENSIS. From Bufo jerboa--Borneo.

CEPEDEA BRUMPTI. From Hyla raddiana S. Amer.

CEPEDEA BUERGERI. From Polypedates buergeri--Japan.

CEPEDEA BUERGERI SINENSIS. From Bufo bufo--Asia.

CEPEDEA CANTABRIGENSIS. From Rana sylvatica cantabrigensis, R. s. latremis

--U.S.A.

CEPEDEA CELEBENSIS. From Bufo celebensis--Celebes Is.; Bufo divergens--Borneo.

CEPEDEA CILIATA. From Hyla fuscovaria--S. Amer.

CEPEDEA DIMIDIATA (= Bursaria intestinalis e.p.; = Bodo intestinalis e.p.; = Opalina dimidiata). From Bufo bufo, B. viridis, tadpoles of Pelobates fuscus, Rana esculenta, R. temporaria--Europe; Bufo melanostictus--India.

CEPEDEA DIMIDIATA HAWAIENSIS (= C. hawaiiensis). From Rana catesbiana--Hawaii (introduced from mainland).

CEPEDEA DIMIDIATA NAGLAVENSIS. From Rana cyanophlyctis--India.

CEPEDEA DIMIDIATA ORIENTALIS. From Rana nigromaculata--Asia.

CEPEDEA DIMIDIATA PARAGUENSIS. From Hyla nasica--Paraguay.

CEPEDEA DIMIDIATA SAIGONENSIS. From Rhacophorus leucomystax--Viet-Nam.

CEPEDEA DIMIDIATA ZELLERI. From Rana esculenta--Europe.

CEPEDEA DOLICHOSOMA. From Bufo haematiticus--Cent. Amer.

CEPEDEA DRACUNCULA. From Rana tigrina rugulosa--Viet-Nam.

CEPEDEA FLAVA (= Opalina f.). From Scaphiopus holbrookii--U.S.A.

- CEPEDEA FLORIDENSIS. From Scaphiopus holbrookii albus--U.S.A.
- CEPEDEA FORMOSAE. From Bufo melanostictus--Europe.
- CEPEDEA FUJIENSIS (= C. fuljensis). From Bufo b. formosus--Japan.
- CEPEDEA GLOBOSA. From Phyllomedusa lemur--Cent. Amer.
- CEPEDEA HASSELTII. From Megophrys hasseltii--Java.
- CEPEDEA HOSEI. From Nectophryne hosei--Borneo.
- CEPEDEA HYLAE (near C. longa). From Hyla arborea--India.
- CEPEDEA LANCEGLATA (= Opalina l.). From Rana nigromaculata--Asia.
- CEPEDEA LEMURIAE. From Polypedates rhodoscelis--Madagascar.
- CEPEDEA LONGA (= Opalina l.). From Polypedates maculatus--Ceylon; Rana limnocharis--India.
- CEPEDEA LONGA HISPANICA (= C. hispanica). From Rana esc. hispanica, R. esc. ridibunda perezii--Spain; Rana limnocharis--India.
- CEPEDEA LONGA MACRONUCLEATA. From Rana vittigera tadpoles--Philippines.
- CEPEDEA LUZONENSIS. From Rana luzonensis, R. similis--Philippines.
- CEPEDEA LUZONENSIS APONENSIS. From Rana magna--Philippines.
- CEPEDEA MADAGASCARIENSIS. From Hyperolius marmorata, Megalixalus madagascariensis--Madagascar.
- CEPEDEA MAGNA. From Bufo polycercus--W. Africa.
- CEPEDEA METCALFI. From Bufo melanostictus India.
- CEPEDEA MEXICANA. From Rana pipiens--Mexico.
- CEPEDEA MICROHYLAE. From Microhyla leucostigma--Borneo.
- CEPEDEA MINOR. From Alytes obstetricans--Europe.
- CEPEDEA MOGYANA (= Opalina m.). From Hyla leucophyllata--S. Amer.
- CEPEDEA MULTIFORMIS (= Opalina m.). From Hyla albomarginata--Cent. Amer.
- CEPEDEA ? MULTIFORMIS (see: Metcalf, 1923). From Polypedates schlegelii--Japan.
- CEPEDEA OBOVOIDEA. From Bufo terrestris--U.S.A.
- CEPEDEA OCCIDENTALIS. From Rana chrysoprasina--Cent. Amer.
- CEPEDEA OPHIS. From Rana tigrina--India.
- CEPEDEA PARVA. From Rana guntheri--China.
- CEPEDEA PHILAUTI. From Philautus sp?--India.

- CEPEDEA PHILIPPENSIS. From Bufo philippinicus--Philippines; Bufo quadriporcatus--Sumatra.
- CEPEDEA PHRYNOMANTIDIS. From Phrynomantis bifasciata--Africa.
- CEPEDEA PLATA. From Hyla faber--S. Amer.
- CEPEDEA PULCHRA. From Kaloula pulchra--China.
- CEPEDEA PULCHRA JAPONICA. From Rana rugosa--Japan.
- CEPEDEA PULCHRA JAVENSIS. From Bufo melanostictus--Java.
- CEPEDEA PUNJABENSIS. From Bufo melanostictus--India.
- CEPEDEA RUBRA (= Opalina r.). From Hyla rubra, Hyla minuta, Leptodactylus ocellatus, Paludicola falcipes, Pseudopaludicola ameghini--Brazil.
- CEPEDEA RUGOSA (= Opalina r.). From Hyla nebulosa--Brazil.
- CEPEDEA SAHARANA (= Opalina elongata of Gourvitsch, 1926). From Rana escridibunda--Turkestan.
- CEPEDEA SEGMENTATA. From Polypedates leucomastax--S.E. Asia.
- CEPEDEA SEYCHELLENSIS. From Megalixalus seychellensis--Seychelle IIs.
- CEPEDEA SEYCHELLENSIS ANGUSTA. From Bufo melanostictus, Rana tigrina--India.
- CEPEDEA SIALKOTI. From Bufo macrotis--India.
- CEPEDEA SIAMENSIS. From Bufo asper--S.E. Asia (Siam?).
- CEPEDEA SPINIFERA. From Oxydozyga lima--Siam; Java.
- CEPEDEA SUBCYLINDRICA (= Opalina s.). From Bufo melanostictus--India.
- CEPEDEA THIAGI (= Opalina t.). From Polypedates maculatus--Ceylon; India.
- CEPEDEA VIRGULA (= Opalina v.). From Bufo melanostictus, Philautus sp?, Polypedates leucomastax, P. maculatus, Rana tigrina--S.E. Asia.
- CEPEDEA sp?, Lehmann, 1960. From Rana b. boylii--U.S.A.
- CEPEDEA sp?, Metcalf, 1923. From Hyla versicolor chrysocelis--U.S.A.
- CEPEDEA spp?, Metcalf, 1940. From Rana chalconota, R. crassa, R. vittigera tadpoles--Philippines; Rana chalconota--Java.
- CEPEDEA sp?, Metcalf, 1940 (? = C. dimidiata). From Aleurophryne mammata--China.
- CEPEDEA sp?, Metcalf, 1940. From tadpoles of Eleutherodactylus guntheri--S. Amer.
- CEPEDEA sp?, Wright, 1930. From Rana temporaria--Europe.
- CEPEDIETTA FIBRILLATA. From Eurycea bislineata cirrigera--U.S.A.
- CHILODON CYPRINI. On tadpoles of Pelobates fuscus, Rana esculenta--Europe.

- CHONDROSTAGON HAEMATICUM. From blood of Hydromantes genei--Europe.
- DISCOPHRYA spp?, Metcalf, 1923 (possibly Haptophrya spp?). From Bufo melanostictus--Asia; Rana catesbiana--U.S.A.
- EPISTYLIS PLICATILIS. On tadpoles of Pelobates fuscus, Rana esculenta--Europe.
- EPISTYLIS TRITURI. On Triturus sp?--Europe (associated with Tokophrya sp?).
- EPISTYLIS sp?, Wenrich, 1935. On skin and gills of tadpoles of Rana catesbiana, R. clamitans, R. palustris--U.S.A.
- ERYTHROCYTONUCLEOPHAGA RANAE. In blood of Rana esculenta--Europe.
- GLAUCOMA sp?, Shumway, 1940. From nerve chord of larval Ambystoma texanum--U.S.A.
- GLOSSATELLA TINTINNABULUM (= Spirochona t.). On skin and gills of larval Triturus spp?--Europe; larval Rana palustris--U.S.A.
- HAPTOPHRYA GIGANTEA (= Discophrya g.). From Bufo andersonii, Discoglossus pictus--Africa; Rana esculenta--Europe; Plethodon glutinosus--U.S.A.
- HAPTOPHRYA MICHIGANENSIS. From Ambystoma jeffersonianum, A. opacum, Bufo americanus, Desmognathus fuscus, D. phoca, Eurycea bislineata cirrigera, E. b. wilderae, E. longicauda guttolineata, Hemidactylium scutatum, Plethodon cinereus, P. glutinosus, Pseudotriton montanus, Rana pipiens, R. sylvatica--U.S.A.
- HAPTOPHRYA TRITONIS (= Discophrya t.). From Triturus alpestris--Europe.
- HAPTOPHRYA VIRGINIENSIS. From Rana palustris--U.S.A.
- LIONOTUS LAMELLA. On tadpoles of Pelobates fuscus, Rana esculenta--Europe.
- NYCTOTHERUS AMANIENSIS. From Bufo sp?, Rana nutti--Africa.
- NYCTOTHERUS BARBEROI. From Leptodactylus caliginosus--Paraguay.
- NYCTOTHERUS BERTARELLI. From Leptodactylus gracilis--Brazil.
- NYCTOTHERUS BREVICEPS. From Rana breviceps--India.
- NYCTOTHERUS CACOPUSI. From Uperon (= Cacopus) systema--India.
- NYCTOTHERUS CERATOPHRIS. From Ceratophrys americana--Brazil.
- NYCTOTHERUS CHENI. From Rana spinosa--China; Fr. Indo-China.
- NYCTOTHERUS CINCTUS. From Hyla nebulosa--Brazil.
- NYCTOTHERUS COCHLEARIS. From Rana curtipes--India.
- NYCTOTHERUS CORDIFORMIS (= Bursaria c.; = Plagiostoma c.; = Nyctotheroides c.) From Bombina bombina, Bufo bufo, Hyla arborea, Pelobates fuscus, Pelodytes punctatus, Rana esculenta, R. temporaria,

R. terrestris--Europe; Bombinator igneus, Bufo cineritus, B. melanostictus, Microhyla ornata, Micrixalus opisthorhodus, M. saxicola, Philautus sp?, Rana breviceps, R. curtipes, R. cyanophlyctis, R. leptodactyla, R. limnocharis, R. malabarica, R. terrestris, Uperodon (= Cacopus) systema--Asia (mainly India); Hyla ewingii, H. tasmaniensis, Limnodynastes dorsalis--Australia; Acris crepitans, A. gryllus, Bufo americanus, B. boreas halophilus, B. fowleri, B. valliceps, Hyla cinerea, H. crucifer, H. versicolor, Notophthalmus viridescens, Pseudacris brimleyi, P. nigrita triseriata, Rana boylii, R. catesbiana, R. clamitans, R. pipiens, R. palustris, R. septentrionalis, R. sphenoccephala, R. sylvatica, Scaphiopus holbrookii, Taricha torosa--U.S.A.; Atelopus stelzneri, Bufo arenarum, B. d'orbignyi, B. marinus, Hyla crospeospila, H. raddiana, Leptodactylus ocellatus, L. pentadactylus, Limnomedusa, Pleurodema bibroni, Pseudis mantidactyla--S. Amer. (often found in larval as well as adult forms).

NYCTOTHERUS CORDIFORMIS HYLAE

(= N. hylae; = N. hylae n. sp., Suro-wiak, 1937; = Nyctotheroides h.).
From Hyla arborea--Europe; ? from Hyla regilla--U.S.A.

NYCTOTHERUS CROSSODACTYLI. From Crossodactylus gaudischaudi--Brazil.

NYCTOTHERUS CUNHAI. From Hyla crospeospila, Leptodactylus ocellatus, L. pentadactylus--Brazil.

NYCTOTHERUS CURTIPES. From tadpoles of Rana curtipes--India.

NYCTOTHERUS ELEGANS. From Hyla nebulosa--Brazil.

NYCTOTHERUS FABERI. From Hyla faber, langsdorffi--Brazil.

NYCTOTHERUS FRAGILIS. From Hyla raddiana--Brazil.

NYCTOTHERUS FULVUS. From Hyla faber, langsdorffi--Brazil.

NYCTOTHERUS GAMARRAI. From Hyla venulosa--S. Amer.

NYCTOTHERUS GIBBER. From Leptodactylus ocellatus, L. pentadactylus--Brazil.

NYCTOTHERUS HETERONUCLEATUS. From Leptodactylus mistaceus--Brazil.

NYCTOTHERUS INCERTUS. From Hyla fuscovaria--Brazil.

NYCTOTHERUS KALII. From tadpoles of Rana curtipes--India.

NYCTOTHERUS LIMNOCHARIS. From Rana limnocharis--India.

NYCTOTHERUS LORICATUS. From Leptodactylus ocellatus, L. pentadactylus--Brazil.

NYCTOTHERUS MACROPHARYNGEUS.

From Bufo melanostictus, Micrixalus opisthorhodus, M. saxicola, Rana breviceps, R. curtipes, R. cyanophlyctis, R. hexadactyla, R. leptodactyla, R. limnocharis, ? R. temporaria, R. tigrina, R. verrucosa--Asia (mainly India); Rana c.

cancrivora--Viet-Nam.

NYCTOTHERUS MAGNUS. From Micrixalus opisthorhodus, M. saxicola, Rana breviceps, R. curtipes, R. cyanophlyctis, R. hexadactyla, R. limnocharis, R. temporaria, R. tigrina--India.

NYCTOTHERUS MAGNUS MALABARICA. From Micrixalus saxicola, Rana cyanophlyctis, R. leptodactylus, R. limnocharis, R. temporaria, R. tigrina rugulosa--India.

NYCTOTHERUS MOGYANUS. From Hyla faber, H. rubra--Brazil.

NYCTOTHERUS NANKINGENSIS. From Rana limnocharis--China.

NYCTOTHERUS OCHOTERENAI. From Elachistocleis ovalis--S. Amer.

NYCTOTHERUS ONDINAE. From Hyla leucophyllata, H. politaenia--Brazil.

NYCTOTHERUS OSWALDOI. From Leptodactylus sibilatrix--Brazil.

NYCTOTHERUS PALUDICOLAE. From Physalaemus signiferus--Brazil.

NYCTOTHERUS PAPILLATUS. From Bufo melanostictus, Polypedates maculatus, Rana tigrina--Ceylon.

NYCTOTHERUS PARVUS. From Rana clamitans, R. palustris--U.S.A.

NYCTOTHERUS PAULISTANUS. From Leptodactylus ocellatus tadpoles--Brazil.

NYCTOTHERUS PISCICOLA. From Rana

tigrina rugulosa--India. (normally in fish).

NYCTOTHERUS PYRIFORMIS. From Rana limnocharis--China.

NYCTOTHERUS RENIFORMIS. From Bufo macrotis--India.

NYCTOTHERUS RUBER. From Hyla faber, H. fuscovaria, H. nebulosa, H. politaenia--Brazil.

NYCTOTHERUS STYSTOMA. From Uperodon (= Cacopus) systoma--India.

NYCTOTHERUS TEJERAI. From Bufo marinus, Leptodactylus ocellatus, L. pentadactylus--Brazil.

NYCTOTHERUS TIETEANUS. From Hyla rubra--Brazil.

NYCTOTHERUS UNTANHA. From Ceratophrys dorsata--Brazil.

NYCTOTHERUS VESICULATUS. From Rana c. cancrivora, R. tigrina rugulosa--Viet-Nam.

NYCTOTHERUS VIANNAI. From "Batrachian"--Brazil.

NYCTOTHERUS VORAX. From Leptodactylus ocellatus--Brazil.

NYCTOTHERUS VULGARIS. From Hyla microps--Brazil.

NYCTOTHERUS spp?, Boisson, 1957.
2 spp? from Bufo melanostictus--Viet-Nam.

NYCTOTHERUS sp?, Carini, 1939. From

- Hyla polytaenia--Brazil.
- NYCTOTHERUS spp?, Cleland & Johnston, 1910. From Hyla caerulea, Limnodynastes dorsalis, L. peronii--Australia; Hyla arborea--Europe.
- NYCTOTHERUS sp?, Escomei, 1929. From Bufo spinulosus, Telmatobius escomeli, T. jelskii (? = gebskii)--Peru.
- NYCTOTHERUS sp?, Johnston, 1910. From Hyla caerulea--Australia.
- NYCTOTHERUS spp?, Metcalf, 1923. From Acris gryllus, Bufo compactilis, Pseudacris nigrita feriarum, P. streckeri, Rana grylio--U.S.A.; Hyla septentrionalis--Cuba; Atelopus stelzneri, Leptodactylus microtis, Pleurodema bibroni--S. Amer.; Hylambates rufus, Rana nutti, Xenopus calcaratus--Africa; Microhyla ornata--S.E. Asia.
- NYCTOTHERUS sp?, Zebrowski, 1923. From Rana pipiens--U.S.A.
- OPALINA ACUMINATA. From Rana limnocharis--China.
- OPALINA ANNANDALI. From Rana tigrina--India.
- OPALINA ASIATICA. From Bufo b. asiaticus--E. Asia.
- OPALINA BUFOXENA. From Bufo b. asiaticus--E. Asia.
- OPALINA CAMERUNENSIS. From Hylambates rufus--Africa.
- OPALINA CANCRIVORA. From Rana c. cancrivora--Viet-Nam.
- OPALINA CAROLINENSIS. From Bufo boreas, Rana pipiens, R. sphenoccephala, Scaphiopus holbrookii--U.S.A.
- OPALINA CHATTONI. From Bufo melanostictus--Fr. Indo-China.
- OPALINA CHENI. From Kaloula borealis--China.
- OPALINA CHLOROPHILI. From Hyla crucifer, Pseudacris brimleyi, P. nigrita feriarum, P. n. triseriata, P. ornata, P. streckeri--U.S.A.
- OPALINA CINCTA. From Alytes obstetricans, Bufo bufo--Europe.
- OPALINA COPEI. From Rana copei, R. pretiosa--U.S.A.
- OPALINA CORACOIDEA. From Bufo melanostictus, Micrixalus saxicola, Rana cyanophlyctis, R. limnocharis, R. temporaria, R. tigrina--India.
- OPALINA CORACOIDEA LAHORIENSIS. From Bufo melanostictus, Rana tigrina--India.
- OPALINA CRISTULA. From Rhacophorus leucomystax--Viet-Nam.
- OPALINA DISCOGLOSSI. From Discoglossus pictus--Europe; N. Africa.
- OPALINA DISCOPHYRYA. From Bufo americanus copei, B. cognatus--U.S.A.
- OPALINA DRAYTONI. From Rana aurora draytoni--U.S.A.
- OPALINA ELONGATA (= ? O. longula). From Hyla faber--Brazil; "Frogs"--Turkestan. (probably Cepedea saharensis;

see: B. & G., 1927)

- OPALINA FABER. From Hyla faber--Brazil.
- OPALINA GUATEMALAE. From Hyla baudini--Cent. Amer. (Guatemala).
- OPALINA GUNTHERI. From Rana guntheri--China.
- OPALINA HELENAE. From Agalychnis helena--Cent. Amer.
- OPALINA HELENAE PHYLLOMEDUSAE. From Phyllomedusa dacnicolor--Cent. Amer.
- OPALINA HYLAXENA. From Hyla crucifer, H. versicolor, Pseudacris brimleyi--U.S.A.
- OPALINA HYLAXENA GEORGIANA. From Hyla versicolor--U.S.A.
- OPALINA HYLAXENA MEXICANA. From Hyla versicolor--U.S.A.
- OPALINA HYLAXENA ORBICULATA. From Hyla versicolor--U.S.A.
- OPALINA HYLAXENA PARVINUCLEATA--From Hyla versicolor--U.S.A. (The validity of all of the above subspecies from the same host is doubtful).
- OPALINA INTERMEDIA. From Bufo boreas halophilus--U.S.A.
- OPALINA JAPONICA (M. 1923). From Rana esc. japonica, R. limnocharis--Japan. (possible homonym?).
- OPALINA JAPONICA (S. 1920). From Bufo b. formosus, Rana esc. japonica--Japan; Uperodon (= Cacopus) systema India. (Sugiyama's species in 1920, Metcalf's in 1923).
- OPALINA JAPONICA JAVENSIS. From Nyctixalus margaritifera--Java.
- OPALINA KENNICOTTI. From Rana areolata, R. sphenoccephala--U.S.A.
- OPALINA LARVARUM. From tadpoles of Rana clamitans--U.S.A.
- OPALINA LATA. From Rana hexadactyla, R. limnocharis--India.
- OPALINA LATA CORDATA. From Rana cyanophlyctis, R. malabarica--India.
- OPALINA LONGULA (? = O. elongata). From Hyla faber--Brazil.
- OPALINA MANTELLAE. From Mantella baroni--Madagascar.
- OPALINA MALAYSIAE. From Microhyla ornata--Burma; Rana labialis--Siam.
- OPALINA MINUTA. From Bufo melanostictus E. Asia.
- OPALINA MORELETEI. From Agalychnis moreletii--Cent. Amer.
- OPALINA NATALENSIS. From Phrynobatrachus natalensis--Africa.
- OPALINA NEBULOSA. From Hyla nebulosa--Brazil.
- OPALINA NUCLEOLATA. From Rana chalconota--Java; Philippines.

- OPALINA NUCLEOLATA SIAMENSIS -
From Rana macrodactyla--Siam; Rana macrodon--Malaysia; E. Indies.
- OPALINA NUCLEOLATA SZECHWANENSIS.
From Rana güntheri--China.
- OPALINA OBLANCEOLATA. From Pseudacris brimleyi, Scaphiopus hammondi, S. holbrooki--U. S. A.
- OPALINA OBTRIGONA. From Hyla arborea--Europe; H. arborea savignyi--Asia Minor; Hyla arborea japonica--Japan.
- OPALINA OBTRIGONOIDEA. From Acris crepitans, Bufo fowleri, B. punctatus, B. valliceps, Gastrophryne carolinensis, Hyla arenicolor, H. crucifer, H. femoralis, Pseudacris brimleyi, P. nigrita triseriata, Rana clamitans (exper.), R. palustris, R. pipiens, R. sphenoccephala, R. sylvatica, Scaphiopus holbrooki--U. S. A.; (if synonymous with O. triangularis - add Bufo melanostictus, Hyla andersoni--India).
- OPALINA OBTRIGONOIDEA AMERICANA.
From Bufo americanus, B. fowleri--U. S. A.
- OPALINA OBTRIGONOIDEA AMERICANA RUGOSA. From Bufo americanus, B. fowleri--U. S. A.
- OPALINA OBTRIGONOIDEA AUSTRICOLA.
From Rana pipiens--U. S. A.
- OPALINA OBTRIGONOIDEA JAPONICA.
From Rana esc. japonica--Japan.
- OPALINA OBTRIGONOIDEA LATA. From Rana aurora, R. capito--U. S. A.; Uperodon (= Cacopus) stystema--India; Kaloula borealis--China.
- OPALINA OBTRIGONOIDEA MAXIMA. From Bufo boreas, B. bor. halophilus--U. S. A.
- OPALINA OBTRIGONOIDEA ORBICULATA.
From Hyla cinerea--U. S. A.
- OPALINA OBTRIGONOIDEA PPLICATA. From Bufo fowleri, Rana palustris--U. S. A. (if synonymous with O. scalpriformis - add Bufo melanostictus--India).
- OPALINA OBTRIGONOIDEA RUGOSA. From Bufo fowleri--U. S. A. (if the synonymy of O. obtrigonoidea Metcalf, 1923, and O. triangularis Ghosh, 1918, is established, then the various subspecies of O. obtrigonoidea (if valid) should be transferred to O. triangularis and would become respectively, O. tri. americana (Met.), O. t. americana rugosa (Met.), O. t. austriicola (Met.), O. t. japonica (Hara), O. t. lata (Met.), O. t. maxima (Met.), O. t. orbiculata (Met.), O. t. plicata (Met.), and O. t. rugosa (Met.). Bhatia (1936) pointed out the possibility of such synonymy occurring, but did not make the new combinations that would thus result).
- OPALINA OREGONENSIS. From Hyla regilla--U. S. A.
- OPALINA PANAMENSIS. From Bufo typhonius--Cent. Amer. (Panama).
- OPALINA PAULISTA. From Hyla crospeospila--Brazil.
- OPALINA PEKINENSIS. From Bufo raddei--China.

- OPALINA PICKERINGII. From Hyla crucifer, Pseudacris brimleyi--U.S.A.
- OPALINA PLICATA. From Bufo melanostictus--India.
- OPALINA RADDEI. From Bufo raddei--China.
- OPALINA RADDIANA. From Hyla raddiana--Brazil.
- OPALINA RANARUM (= Bursaria r., e.p.). From Bombina bombina, Bufo bufo, B. viridis, Discoglossus pictus, Pelobates fuscus, Rana dalmatina, R. esculenta, R. temporaria, R. tem. parvipalmata, R. terrestris (? = arvalis), Triturus alpestris--Europe; Discoglossus pictus--N. Africa; Bufo melanostictus, Micrixalus opisthorhodus, M. saxicola, Rana cyanophlyctis, R. limnocharis, R. nigromaculata, R. tigrina--India; Rana curtipes--Goa (India); Rana clamitans--U.S.A.; Bufo spinulosus, Telmatobius escomeli, T. jelskii (? = gebskii)--S. Amer.
- OPALINA RANARUM ARVALIS. From Rana temporaria, R. terrestris (? = arvalis)--Europe.
- OPALINA RANARUM CINCTOIDEA. From Rana temporaria--Europe.
- OPALINA RANARUM LATA. From Bufo viridis--Europe.
- OPALINA RANARUM ORBICULATA. From Rana temporalis--Ceylon; Rana glandulosa--Malaya.
- OPALINA RANARUM PARVIPALMATA. From Rana tem. parvipalmata--Europe.
- OPALINA RANARUM SMITHI. From Bufo smithi--Japan.
- OPALINA RANARUM TRUNCATA. From Rana temporaria--Europe. (the validity of all of the subspecies of O. ranarum is doubtful).
- OPALINA ROTUNDA. From Rana erythraea--Siam.
- OPALINA SEPTENTRIONALIS. From Hyla septentrionalis--Cuba.
- OPALINA SPIRALIS. From Bufo compactilis--U.S.A.
- OPALINA SUDAFRICANA. From Bufo regularis--S. Africa.
- OPALINA SUDAFRICANA GUTTERALIS. From Bufo regularis gutteralis--S. Africa.
- OPALINA TERRAE-MARIAE. From Hyla cinerea evittata--U.S.A.
- OPALINA TIGRINA. From Rana tig. rugulosa--Viet-Nam.
- OPALINA TRIANGULARIS (? = O. obtrigonoidea). From Bufo melanostictus, Hyla andersoni--India. (see under O. obtrigonoidea).
- OPALINA TRIANGULATA. From Bufo fowleri, B. terrestris, Scaphiopus holbrooki--U.S.A.
- OPALINA UNDULATA. From Rana limnocharis--China.
- OPALINA VIRGULOIDEA. From Bufo fowleri, Hyla crucifer, H. eximia, H. regilla,

Pseudoacris brimleyi, Rana boylei, R. sylvatica--U.S.A.

OPALINA VIRGULOIDEA MACRONUCLEATA.
From Acris gryllus--U.S.A.

OPALINA VIRGULOIDEA MAGNINUCLEATA.
From Acris gryllus--U.S.A.

OPALINA WOODHOUSII. From Bufo woodhousii--U.S.A.

OPALINA ZEYLONICA. From Polypedates eques--Ceylon.

OPALINA spp?, Bezzenberger, 1903. From Bufo melanostictus, Rana nigromaculata--India.

OPALINA spp?, Brandt, 1936. From Bufo fowleri, Hyla crucifer, Rana sphenoccephala--U.S.A.

OPALINA spp?, Carini, 1935. From Hyla faber, H. nebulosa, H. raddiana, H. rubra--S. Amer.

OPALINA sp?, Carini, 1937. From Hyla rubra--Brazil.

OPALINA spp?, Cleland & Johnston, 1910. From Hyla arborea--Europe; Hyla caerulea, Limnodynastes dorsalis, L. peroni--Australia.

OPALINA sp?, Dobell, 1910. From Rana tigrina--India.

OPALINA sp?, Johnston, 1916. From Hyla arborea--Europe.

OPALINA sp?, Lehmann, 1960. From Hyla regilla, Rana boylei--U.S.A.

OPALINA spp?, Metcalf, 1923. From Hyla arborea--Europe; Rana mascareniensis--Africa; Limnodynastes dorsalis, L. peroni--Australia; Rana septentrionalis--Canada; Hyla versicolor chrysozelis--U.S.A.; Hyla septentrionalis--Cuba; Bufo haematiticus Cent. Amer.

OPALINA spp?, Metcalf, 1940. From Rana verrucosa--India; Rana jerboa--Java; Rana clamitans tadpoles--U.S.A.

OPALINA spp?, Pearse, 1932. From Bufo marinus--Cent. Amer.; Pseudosalamandra stejnegeri--Japan.

OPALINA sp?, Trowbridge & Hefley, 1934. From Acris gryllus, Bufo cognatus, B. woodhousii--U.S.A.

"Opalinids" of Wichtermann, 1934. From Rana spinosa--Fr. Indo-China.

("Opalina". The criteria used by Metcalf in his subdivisions of the species Opalina hylaxena, O. ranarum, O. virguloidea, and especially O. obtrigonoidea, and those used by Fantham in subdividing O. sudafri-cana, do not seem to be definite enough to enable other workers to satisfactorily recognize the subspecies, varieties or forms so established. We know now that differentiation on the basis of host into so-called biological races does not hold, and parasite differentiation on host basis is not a valid criterion).

OPERCULARIA NUTANS. On tadpoles of Pelobates fuscus, Rana esculenta--Europe.

OPERCULARIA sp?, Wenrich, 1935. On skin

- and gills of tadpoles of Rana catesbiana,
R. clamitans, R. palustris--U.S.A.
- PARANYCTOTHERUS KIRBYI (= Balanti-
dium k.). From Xenopus laevis--S.
Africa.
- PIRHEMOCYTON TARENTOLAE. In blood
of Hydromantes genei--Europe.
- PROTOOPALINA ACUTA (= Opalina a.).
From Limnodynastes dorsalis--Australia.
- PROTOOPALINA ADELAIIDENSIS. From
Hyla adelaidensis--Australia.
- PROTOOPALINA AFRICANA. From Rana
crassipes--Africa.
- PROTOOPALINA APPENDICULATA. From
Rana fuscigula--Africa.
- PROTOOPALINA AUSTRALIS. From Hyla
arborea--Europe.
- PROTOOPALINA AXONUCLEATA. From
Bufo bufo asiaticus--S. E. Asia.
- PROTOOPALINA AXONUCLEATA LATA.
From Rana nigromaculata--S. E. Asia.
- PROTOOPALINA BIBRONI. From Pseudo-
phryne bibroni--Australia.
- PROTOOPALINA BORNEONENSIS. From
Polypedates reinwardti--Borneo.
- PROTOOPALINA CACOSTERNI. From
Cacosternum boettgeri tadpoles--Africa.
- PROTOOPALINA CANOVI. From ? Rana
arvalis--Europe.
- PROTOOPALINA CAPENSIS. From Heleo-
phryne regis--Africa.
- PROTOOPALINA CAUDATA (= Bursaria
intestinalis e.p.; = Bodo i. e.p.; =
Opalina caudata). From Bombina bombina,
B. pachypus, Bufo calamita, B. viridis,
Discoglossus pictus--Europe; Bufo mauri-
tanicus--Africa.
- PROTOOPALINA CAUDATA DISCOGLOSSI.
From Discoglossus pictus--Europe; Africa.
- PROTOOPALINA CAUDATA MICROHYLA.
From Microhyla ornata--Burma.
- PROTOOPALINA DIPLOCARYA. From
Eleutherodactylus leptopus--S. Amer.
- PROTOOPALINA DHARWARENSIS. From
Microhyla ornata--India.
- PROTOOPALINA DORSALIS (= Opalina d.).
From Limnodynastes dorsalis--Australia.
- PROTOOPALINA FACIATA. From Rana
faciata--Africa.
- PROTOOPALINA FILIFORMIS. From Rana
tigrina--India.
- PROTOOPALINA FORMOSAE. From Bufo
melanostictus--Formosa.
- PROTOOPALINA GARIEPENSIS. From Bufo
angusticeps--Africa.
- PROTOOPALINA HAMMONDI. From Scaphio-
pus hammondi--U.S.A.
- PROTOOPALINA HELEOPHRYNE. From
Heleophryne purcelli, H. rosei--Africa.
- PROTOOPALINA HEXASOMA. From Bufo
bufo asiaticus, B.b. japonicus, Rana
nigromaculata--Japan.

- PROTOOPALINA HYLARUM (= Opalina h.). From Hyla arborea--Europe.
- PROTOOPALINA INDICA. From Microhyla ornata--India.
- PROTOOPALINA INTESTINALIS (= Bursaria i. e.p.; = Bodo i. e.p.; = Opalina i.). From Bombina bombina, B. pachypus, Bufo calamita, Discoglossus pictus, Hyla arborea, Pelobates cultripes, P. fuscus, Rana esculenta, R. temporaria, Triturus helveticus, T. vulgaris--Europe; Bufo mauritanicus, Hyperolius marmoratus--Africa; Hyla ewingi, Limnodynastes dorsalis--Australia. (often found in both larval and adult forms).
- PROTOOPALINA KARNATAKENSIS. From Microhyla ornata--India.
- PROTOOPALINA LIMNOCHARIS. From Rana limnocharis--China.
- PROTOOPALINA LONGINUCLEATA. From Telmatobius jelskii (? = gebskii)--S. Amer.
- PROTOOPALINA LUZONENSIS. From Kaloula picta--Philippines.
- PROTOOPALINA MACROCAUDATA. From Bombina orientalis--China.
- PROTOOPALINA MERIDIONALIS. From Rana delalandii--Africa.
- PROTOOPALINA MEXICANA. From Scaphiopus multiplicatus--Mexico.
- PROTOOPALINA MITOTICA (= Opalina m.). From Ambystoma tigrinum--U.S.A.
- PROTCOPALINA MONTANA. From Megophrys montana--Java.
- PROTOOPALINA MOSSAMBICENSIS. From Rana adspersa--Africa.
- PROTOOPALINA NUTTI. From Bufo regularis, Rana nutti--Africa.
- PROTOOPALINA OCTOMIXA. From Bufo carens--Africa.
- PROTOOPALINA ORIENTALIS. From Bombina orientalis--China.
- PROTOOPALINA OVALIS. From Rana fuscigula--Africa.
- PROTOOPALINA OVOIDEA. From Gastrophryne texensis--U.S.A.
- PROTOOPALINA PAPUENSIS. From Hyla infrafrenata--Papua.
- PROTOOPALINA PELOBATIDIS. From Pelobates fuscus--Europe.
- PROTOOPALINA PERONI. From Limnodynastes--Australia.
- PROTOOPALINA PINGI. From Rana plancyi--China.
- PROTOOPALINA PRIMORDALIS (= Opalina p.). From Rana nutti--Africa.
- PROTOOPALINA QUADRINUCLEATA. From Rana macrodon, R. plancyi--S. E. Asia.
- PROTOOPALINA REGULARIS. From Bufo regularis--Africa.
- PROTOOPALINA RHINODERMATOS. From Rhinoderma darwini--S. Amer.

- PROTOOPALINA SCAPHIOPODOS. From Scaphiopus bombifrons--U.S.A.
- PROTOOPALINA STEJNEGERI. From Ascaphus truei--U.S.A.
- PROTOOPALINA STEVENSONI. From Bufo regularis--Africa.
- PROTOOPALINA STEVENSONI SAIGONENSIS. From Rana tig. rugulosa--Viet-Nam.
- PROTOOPALINA TENUIS (= Opalina t.). From Crinia signifera, Uperoleia marmorata--Australia.
- PROTOOPALINA TRANSVAALENSIS. From Bufo regularis--Africa.
- PROTOOPALINA VIRIDIS. From Bufo carens--Africa.
- PROTOOPALINA XAMACHANA. From Eleutherodactylus luteolus--W. Indies.
- PROTOOPALINA XENOPODOS. From Xenopus calcaratus, X. laevis--Africa.
- PROTOOPALINA XYSTER. From Gastrophryne usta--Mexico.
- PROTOOPALINA YUNNANENSIS. From Bombina maxima--China.
- PROTOOPALINA YUNNANENSIS CHENI. From Bombina maxima--China.
- PROTOOPALINA sp?, Metcalf, 1918. From Bufo regularis--Africa; Bombina maxima--China. (see above for parasites of B. maxima, B. regularis).
- PROTOOPALINA sp?, Metcalf, 1923. From Bufo peltoccephalus--Cuba.
- RHABDOSTYLA BREVICEPS. On tadpoles of Pelobates fuscus, Rana esculenta--Europe.
- RHABDOSTYLA SCYPHYDIFORMIS. In branchial chamber and on gills of tadpoles of Bombina variegata, Bufo viridis, Hyla arborea, Pelobates fuscus, Rana esculenta--Czechoslovakia. (exper. transferred to tadpoles of R. temporaria).
- RHABDOSTYLA sp?, Wenrich, 1935. On skin and gills of tadpoles of Rana catesbiana, R. clamitans, R. palustris--U.S.A.
- SCYPHIDIA sp?, Wenrich, 1924. On skin and gills of tadpoles of Hyla versicolor, Rana clamitans--U.S.A.
- TODDIA BUFONIS. In blood of Bufo regularis--Africa.
- TODDIA sp?, Mathis & Léger, 1911. In blood of Bufo melanostictus--S. E. Asia.
- TODDIA spp?, Franca, 1917. In blood of Rana galamensis, R. mascareniensis, R. oxyrhynchus--Africa.
- TOKOPHRA QUADRIPARTITA (= Tokophrya auctt.). On skin of Triturus alpestris, T. cristatus, T. helveticus, T. vulgaris--Europe.
- TORQUATINA sp?, Gros, 1850. From kidneys of "Frogs"--Europe.
- TRICHODINA BUFONIS. In Bufo regularis--Africa.
- TRICHODINA ENTZI. In Rana esculenta--Europe.
- TRICHODINA OKAJIMAE. In Hynobius tokyoensis--Japan.

- TRICHODINA PEDICULUS (= Cyclidium p.; = Kerona p.; = K. polyporum). In Pelobates fuscus, Rana esculenta, Triturus cristatus--Europe; Necturus maculosus--U.S.A.
- TRICHODINA RANAE. In urinary sac of Rana esc. ridibunda perezii--Europe.
- TRICHODINA ROSSETERI. In Triturus cristatus--Europe.
- TRICHODINA URNICOLA. In Bufo sp?--U.S.A.
- TRICHODINA URNICOLA BOHEMICA. In bladder of Triturus cristatus--Europe.
- TRICHODINA URNICOLA TYPICA. In bladder of Triturus cristatus--Europe.
- TRICHODINA URNICOLA TAENIATUS. In bladder of Triturus taeniatus--Europe.
- TRICHODINA VESICULARUM. In Rana esculenta, Triturus cristatus (only in ♂♂)--Europe.
- TRICHODINA XENOPODOS. In Xenopus laevis--Africa.
- TRICHODINA sp?, Diller, 1928. In tadpoles of Rana catesbiana, R. clamitans, R. palustris, R. pipiens, R. sylvatica, "Toads"--U.S.A.
- TRICHODINA sp?, Wenrich, 1924. In tadpoles of Rana catesbiana, R. clamitans, R. palustris--U.S.A.
- UROLEPTUS HOSPES. On skin of Rana esculenta--Europe.
- UROPHAGUS sp?, Camara & Buttrey, 1961.
- From tadpoles and adults, Rana septentrionalis--U.S.A.
- VORTICELLA CAMPANULA. On tadpoles of Pelobates fuscus, Rana esculenta--Europe.
- VORTICELLA NEBULIFERA. On tadpoles of Pelobates fuscus, Rana esculenta--(Ehrenberg, 1838, differentiates between the two vorticellae described).
- VORTICELLA sp?, Wenrich, 1935. On skin and gills of tadpoles of Rana catesbiana, R. clamitans, R. palustris--U.S.A.
- ZELLERIELLA ANTILLIENSIS (= Opalina a.). From Bufo marinus--Costa Rica; Bufo arenarum, B. d'orbignyi, B. marinus, Leptodactylus ocellatus, L. prognathus, Limnomedusa macroglossa, Pleurodema bibroni, Pseudis mantidactyla--S. Amer.
- ZELLERIELLA ANTUNESI. From Bufo arenarum, B. crucifer, B. d'orbignyi, B. marinus--Uruguay; Leptodactylus ocellatus--Brazil.
- ZELLERIELLA ANTUNESI QUADRATA. From Bufo crucifer--Uruguay.
- ZELLERIELLA ARTIGASI. From Bufo marinus--Brazil.
- ZELLERIELLA ATELOPODOS. From Atelopus varius--S. Amer.
- ZELLERIELLA ATELOPYXENA. From Atelopus varius--Costa Rica; S. Amer.
- ZELLERIELLA ATELOPYXENA STELZNERI. From Atelopus stelzneri, A. varius--S. Amer.
- ZELLERIELLA BINGHAMI. From Eleutherodactylus

- binghami--S. Amer.
- ZELLERIELLA BINUCLEATA (= Opalalina b.; = Opalina b.; = Protoopalina b.). From Limnodynastes dorsalis, L. tasmaniensis--Australia.
- ZELLERIELLA BOULENGERI. From Prostherapis boulengeri--S. Amer.
- ZELLERIELLA BRASILIENSIS (= Opalina b.; = Zelleriella argentinae). From Physalaemus signiferus--Argentina; Leptodactylus ocellatus--Brazil.
- ZELLERIELLA BUFOXENA. From Bufo haematiticus--Cent. Amer.
- ZELLERIELLA CAUDATA. From Leptodactylus ocellatus--Brazil.
- ZELLERIELLA CORNIOLA. From Leptodactylus ocellatus--Brazil.
- ZELLERIELLA CORNUCOPIA (? = Z. cornu-
copioide). From Leptodactylus ocellatus,
L. pentadactylus--Brazil.
- ZELLERIELLA COUCHI. From Scaphiopus couchi--U. S. A.
- ZELLERIELLA CUNEATA. From Leptodactylus ocellatus--Brazil.
- ZELLERIELLA CUSCONIS. From Eleutherodactylus footei--S. Amer.
- ZELLERIELLA DARWINI. From Rhinoderma darwini--S. Amer.
- ZELLERIELLA DENDROBATIDIS. From Dendrobates tinctorius, D. typographus--Cent. Amer.
- ZELLERIELLA DUBIA. From Eupemphix nana--S. Amer.
- ZELLERIELLA ENGYSTOMOPSIS. From Engystomops pustulosus, E. stentor--Cent. Amer.
- ZELLERIELLA EXCAVATA. From Leptodactylus ocellatus--Brazil.
- ZELLERIELLA FALCATA. From Elachistocleis ovalis--Brazil.
- ZELLERIELLA FOLIACEA. From Leptodactylus ocellatus--Brazil.
- ZELLERIELLA FROILANOI. From Philautus sp?--India.
- ZELLERIELLA HIRSUTA. From Bufo cognatus--U. S. A.
- ZELLERIELLA HYLAXENA. From Hyla raddiana--S. Amer.
- ZELLERIELLA HYPOPACHUS. From Hypopachus variolosus--Cent. Amer.
- ZELLERIELLA INTERMEDIA. From Bufo intermedius--Mexico; Bufo valliiceps--U. S. A.
- ZELLERIELLA INTERMEDIA CUNEATA. From Bufo vallicepts--U. S. A.
- ZELLERIELLA LEPTODACTYLI. From Leptodactylus albilabris, L. microtis--Cent. Amer.; Leptodactylus caliginosus, L. gracilis--S. Amer.
- ZELLERIELLA MACRONUCLEATA (= Opalina m.). From Bufo melanostictus--S. E. Asia.
- ZELLERIELLA MAGNA. From Leptodactylus

- ocellatus, L. sibilatrix--S. Amer.
- ZELLERIELLA MENENDEZI. From Leptodactylus caliginosus--S. Amer.
- ZELLERIELLA MICROCARYA. From Bufo lemur--Puerto Rico.
- ZELLERIELLA MICROHYLAE. From Microhyla ornata--India.
- ZELLERIELLA OPISTHOCARYA. From Bufo coniferus, B. typhoni--Cent. Amer.; Bufo marinus, B. monksiae--Mexico.
- ZELLERIELLA ORIENTALIS. From Microhyla ornata--Burma; India.
- ZELLERIELLA OVONUCLEATA. From Leptodactylus pentadactylus--Brazil.
- ZELLERIELLA OVONUCLEATA BUFONIS. From Bufo sternosignatus--Mexico.
- ZELLERIELLA PALUDICOLAE. From Physalaemus signiferus, Pleurodema bibroni, P. brachyops--S. Amer.
- ZELLERIELLA PATAGONIENSIS. From Pleurodema bufonina--Argentina.
- ZELLERIELLA PAULISTA (= Opalina p.). From Bufo marinus--Brazil.
- ZELLERIELLA RANAXENA. From Rana aurora draytoni--U. S. A.
- ZELLERIELLA SCAPHIOPODOS. From Scaphiopus holbrookii--U. S. A.
- ZELLERIELLA TELMATOBII. From Telmatobius jelskii (? = gebiskii)--S. Amer.
- ZELLERIELLA TRINITATIS. From Phyllobates trinitatis--Trinidad; ? from Elosia lateristrigata--S. Amer.
- ZELLERIELLA TRUNCATA. From Leptodactylus ocellatus, L. pentadactylus, L. sibilatrix--S. Amer.
- ZELLERIELLA URUGUAYENSIS. From Bufo arenarum--Uruguay.
- ZELLERIELLA URUGUAYENSIS QUADRATA. From Bufo crucifer, B. d'orbignyi--Uruguay.
- ZELLERIELLA VENEQUELAE. From Hyla venulosa--Venezuela.
- ZELLERIELLA WOODHOUSII. From Bufo woodhousii--U. S. A.
- ZELLERIELLA (africana "A"), Sandon, 1938. From Rana delalandii--Africa. (not used as a scientific name).
- ZELLERIELLA (africana "B"), Sandon, 1938. From Rana fuscigula--Africa. (not used as a scientific name).
- ZELLERIELLA sp?, Brumpt & Lavie, 1936. From Physalaemus signiferus S. Amer. (probably Z. paludicola, Metcalf, 1923).
- ZELLERIELLA spp?, Cheever & Stabler, 1936. From Bufo woodhousii--U. S. A.; Bufo marinus, Hyla nana, Pleurodema bibroni--S. Amer. (a general reference to already described species from these hosts).
- ZELLERIELLA spp?, Metcalf, 1923. From Bufo punctatus, B. woodhousii--U. S. A.; Bufo sternosignatus--Mexico; Bufo peltocephalus, Hyla septentrionalis, Bufo spinulosus--S. Amer. (probably these species are named by Metcalf, 1940, as he names species

from these hosts as new and undescribed).

ZELLERIELLA sp?, Wenrich, 1935. From
Hyla cinerea--U.S.A.

FORMS OF DOUBTFUL CLASSIFICATION

BORRELIA BUFONIS (= Spirochaeta b.; =
Spiroschaudinia b.). From Bufo bufo,
"Frogs"--Europe.

BORRELIA CUBENSIS (= Spirochaeta c.).
From Hyla septentrionalis--Cuba.

BORRELIA MANITOU (= Spirochaeta m.).
From Rana catesbiana--Canada.

BORRELIA OMELIANSKYI (= Spirochaeta o.).
From Rana temporaria--Europe.

BORRELIA sp? (= Spirochaeta sp?, Fantham,
1924). From Bufo regularis, Xenopus
laevis--Africa.

BORRELIA spp? (= Spirochaeta spp?, Galli-
Valerio, 1930). From Rana temporaria,
Salamandra atra, S. salamandra--Europe.

The above forms have all been transferred to
the genus Borrelia on the basis of their des-
criptions as being larger and with fewer spi-
rals than pertains to members of the genus
Spirochaeta s.s.

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