

Current text	Proposed new text	Comments
APPENDIX 5. OPINIONS RELATING TO THE NOMENCLATURE OF PROKARYOTES	APPENDIX 5. OPINIONS RELATING TO THE NOMENCLATURE OF PROKARYOTES	Updated to Opinion 102 issued in 2020. Minor corrections to citation details.

List of Opinions			
<i>Opinions issued by the International Committee on Bacteriological Nomenclature at the Second International Congress for Microbiology, London, 1936</i>			
Opinion	Title	Reference and notes	Result
A	Conservation of the generic name <i>Bacillus</i> Cohn 1872, designation of the type species, and of the type strain of the species	<i>J Bacteriol</i> 1937;33:445–447; and <i>International Code of Nomenclature of Bacteria and Viruses</i> (1958), p. 148	(a) It was agreed that <i>Bacillus</i> Cohn 1872 should be designated as a <i>genus conservandum</i> . (b) It was agreed that the type species of <i>Bacillus</i> should be designated as <i>Bacillus subtilis</i> Cohn 1872 <i>emendavit</i> Prazmowski 1880. (c) It was agreed that the type (or standard) strain should be the Marburg strain. (d) It was agreed that cultures of the type (or standard) strain of <i>Bacillus subtilis</i> together with complete description should be maintained at each of the recognized Type Culture Collections. (e) It was agreed that the genus <i>Bacillus</i> should be so defined as to exclude bacterial species which do not produce endospores. (f) It was agreed that the term <i>Bacillus</i> should be used as a generic name and that it should be differentiated from the terms “bacillus,” “bacille,” and “Bazillus” used as morphological designations.
B	Generic homonyms in the group <i>Protista</i>	<i>J Bacteriol</i> 1937;33:445–447; <i>International Code of Nomenclature of Bacteria and Viruses</i> (1958), p. 148	(a) It was agreed that generic homonyms are not permitted in the group <i>Protista</i> . (b) It was agreed that it is advisable to avoid homonyms amongst <i>Protista</i> on the one hand, and a plant or animal on the other.

C	Capitalization of specific epithets derived from names of persons	<i>J Bacteriol</i> 1937;33:445–447; <i>International Code of Nomenclature of Bacteria and Viruses</i> (1958), p. 148	It was agreed that while specific substantive names derived from names of persons may be written with a capital initial letter, all other specific names are to be written with a small initial letter. Note. This Opinion is revoked by Rule 59 of this Code, and Recommendation 27h of the 1958 and 1966 editions of the <i>International Code of Nomenclature of Bacteria (and Viruses)</i> stated: “A specific epithet, even one derived from the name of a person, should not be written with an initial capital letter.”
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List of Opinions			
<i>Opinions issued by the Judicial Commission</i>			
Opinion	Title	Reference and notes	Result
1	The correct spelling of the specific epithet in the species name <i>Bacillus megaterium</i> de Bary 1884	<i>Int Bull Bacteriol Nomencl Taxon</i> 1951;1:35–36	The spelling <i>megaterium</i> of the specific epithet in <i>Bacillus megaterium</i> de Bary is to be preferred to the spelling <i>megatherium</i> .
2	The combining forms (stems) of compound bacterial generic names ending in <i>-bacterium</i> , <i>-bacter</i> , or <i>-bactrum</i> (<i>-bactron</i>)	<i>Int Bull Bacteriol Nomencl Taxon</i> 1951;1:37–38	The combining form or stem of the last component of names ending in <i>-bacterium</i> is <i>-bacteri</i> , of those ending in <i>-bactrum</i> or <i>bactron</i> is <i>-bactr</i> , and of those ending in <i>-bacter</i> is <i>-bacter</i> . Family names derived from such generic names have, respectively, the endings <i>-bacteriaceae</i> , <i>-bactraceae</i> , and <i>-bacteraceae</i> .
3	Gender of bacterial names ending in <i>-bacter</i>	<i>Int Bull Bacteriol Nomencl Taxon</i> 1951;1 (part 2):36–37, and 1952;1:84–85 in re-issue of volume (1951)	The names of bacterial genera which end in <i>-bacter</i> should be regarded as having the masculine gender.
4 (revised)	Rejection of generic name <i>Bacterium</i> Ehrenberg	<i>Int Bull Bacteriol Nomencl Taxon</i> 1954;4:142) see also 1651;1:145–146 and 1953;3:141–154 Minute 9	(1) The bacterial generic name <i>Bacterium</i> Ehrenberg 1828 is to be recognized as a <i>nomen generum rejiciendum</i> (rejected generic name). (2) The bacterial family name <i>Bacteriaceae</i> is to be recognized as a <i>nomen familiae rejiciendum</i> (rejected family name).

5	Conservation of the generic name <i>Pseudomonas</i> Migula 1894 and designation of <i>Pseudomonas aeruginosa</i> (Schroeter) Migula 1900 as type species	<i>Int Bull Bacteriol Nomencl Taxon</i> 1952;2:121–122	(1) The generic name <i>Pseudomonas</i> Migula 1894 is to be conserved and placed in the list of <i>nomina generum conservanda</i> . (2) The generic name <i>Pseudomonas</i> Migula 1894 is to be associated with the species designated and described by Migula 1895. (3) The type species of the genus <i>Pseudomonas</i> Migula 1894 is <i>Pseudomonas aeruginosa</i> (Schroeter) Migula 1900 (<i>Bacterium aeruginosum</i> Schroeter 1872, <i>Bacillus pyocyaneus</i> Gessard 1882, <i>Pseudomonas pyocyanea</i> Migula 1895).
6	Conservation of the generic name <i>Chlorobacterium</i> Lauterborn 1916 against <i>Chlorobacterium</i> Guillebeau 1890	<i>Int Bull Bacteriol Nomencl Taxon</i> 1954;4:143	The bacterial generic name <i>Chlorobacterium</i> Lauterborn 1916 is conserved against the earlier homonym <i>Chlorobacterium</i> Guillebeau 1890. The generic name <i>Chlorobacterium</i> Guillebeau 1890 is placed in the list of <i>nomina generum rejicienda</i> .
7	Nomenclature of the organism associated with granuloma venereum	<i>Int Bull Bacteriol Nomencl Taxon</i> 1954;4:144, synonymy of <i>Calymmatobacterium granulomatis</i> Aragão and Vianna 1913	The bacterial species names <i>Encapsulatus inguinalis</i> Bergey <i>et al.</i> 1923, <i>Klebsiella granulomatis</i> Bergey <i>et al.</i> 1925, <i>Donovania granulomatis</i> Anderson, de Monbreun, and Goodpasture 1944 are later synonyms of <i>Calymmatobacterium granulomatis</i> Aragão and Vianna 1913.
8	The correct species name of the streptococcus of bovine mastitis	<i>Int Bull Bacteriol Nomencl Taxon</i> 1954;4:145–146, conservation of the specific epithet <i>agalactiae</i> in the combination <i>Streptococcus agalactiae</i> Lehmann and Neumann 1896	The species name <i>Streptococcus agalactiae</i> Lehmann and Neumann 1896 is conserved against all synonyms having priority.
9	Conservation of the bacterial generic name <i>Gallionella</i>	<i>Int Bull Bacteriol Nomencl Taxon</i> 1954;4:146–147, conservation of <i>Gallionella Ehrenberg</i> 1838, with type	<i>Gallionella</i> Ehrenberg is placed in the list of conserved names of bacterial genera (<i>nomina generum conservanda</i>) with the type species <i>Gallionella ferruginea</i> Ehrenberg.

		species <i>Gallionella ferruginea</i> Ehrenberg	
10	Invalidity of the bacterial generic name <i>Müllerina</i> de Petschenko 1910 and of the species name <i>Müllerina paramecia</i>	<i>Int Bull Bacteriol Nomencl Taxon</i> 1954;4:147–148, and status of <i>Drepanospira</i> de Petschenko 1911 and <i>Drepanospira muelleri</i> de Petschenko 1911	The generic name <i>Müllerina</i> de Petschenko 1910 and the species name <i>Müllerina paramecii</i> de Petschenko 1910 were not accepted by the author, hence were not validly published and are without standing in nomenclature. The later names <i>Drepanospira</i> de Petschenko 1911 and <i>Drepanospira muelleri</i> de Petschenko 1911 were validly published and are not later synonyms.
11	Nomenclature of species in the bacterial genus <i>Shigella</i>	<i>Int Bull Bacteriol Nomencl Taxon</i> 1954;4:148–150, validity of publication of the names <i>Shigella dysenteriae</i> (Shiga) Castellani and Chalmers 1919, and conservation of the specific epithets <i>flexneri</i> , <i>boydii</i> , and <i>sonnei</i> in, respectively, the species names <i>Shigella flexneri</i> Castellani and Chalmers 1919, <i>Shigella boydii</i> Ewing 1949, and <i>Shigella sonnei</i> (Levine) Weldin 1927, and emendation, <i>Int Bull Bacteriol Nomencl Taxon</i> 1960;10:85 and 1963;13:31	(1) <i>Shigella dysenteriae</i> (Shiga) Castellani and Chalmers 1919 was validly published and is legitimate as the name of the bacterium described by Shiga (1898). (2) The specific epithet <i>flexneri</i> in the species name <i>Shigella flexneri</i> Castellani and Chalmers 1919 is designated as a conserved specific epithet (<i>epitheton specificum conservandum</i>) for the species first described as <i>Bacillus dysenteriae</i> Flexner 1900. (3) The species name <i>Shigella boydii</i> Ewing 1949 was validly published and is legitimate. The specific epithet <i>boydii</i> in the species name <i>Shigella boydii</i> is to be conserved (<i>epitheton specificum conservandum</i>). (4) The species name <i>Shigella sonnei</i> (Levine) Weldin 1927 was validly published and is legitimate. The specific epithet <i>sonnei</i> in the species name <i>Shigella sonnei</i> is to be conserved (<i>epitheton specificum conservandum</i>). (5) A type or standard culture is to be designated by the <i>Enterobacteriaceae</i> Subcommittee on Bacteriological Nomenclature for each of the four species. Such cultures as far as possible shall be maintained in each of the national Type Culture Collections and in the International Shigella Center, Chamblee, Georgia, U.S.A. (<i>now in the Centers for Disease Control, Atlanta, Georgia</i>). (6) A culture belonging to the species <i>Shigella dysenteriae</i> , <i>Shigella flexneri</i> , <i>Shigella boydii</i> , or <i>Shigella sonnei</i> may be completely identified by appending the appropriate serotype number (arabic) to the name.

12	Conservation of <i>Listeria</i> Pirie 1940 as a generic name in bacteriology	<i>Int Bull Bacteriol Nomencl Taxon</i> 1954;4:150–151, type species <i>Listeria monocytogenes</i> (Murray, Webb, and Swann) Pirie 1940	<i>Listeria</i> Pirie 1940 (type species <i>Listeria monocytogenes</i> (Murray, Webb, and Swann) Pirie 1940) shall be placed in the list of conserved names of bacterial genera (<i>nomina generum conservanda</i>).
13	Conservation and rejection of names of genera of bacteria proposed by Trevisan 1842–1890	<i>Int Bull Bacteriol Nomencl Taxon</i> 1954;4:151–156, conservation of generic names <i>Beggiatoa</i> , <i>Klebsiella</i> , <i>Kurthia</i> , <i>Leptotrichia</i> , <i>Neisseria</i> , <i>Nocardia</i> , <i>Pasteurella</i> ; rejection of generic names <i>Babesia</i> , <i>Bacteriopsis</i> , <i>Billetia</i> , <i>Cenomesia</i> , <i>Cornilia</i> , <i>Dicoccia</i> , <i>Eucornilia</i> , <i>Eumantegazzaea</i> , <i>Eupacinia</i> , <i>Euspirillum</i> , <i>Leptotrichiella</i> , <i>Mantegazzaea</i> , <i>Octopsis</i> , <i>Perroncitoa</i> , <i>Pleurospora</i> , <i>Pseudospira</i> , <i>Pseudospirillum</i> ; illegitimate generic names <i>Bollingeria</i> , <i>Rasmussenia</i> , <i>Schuetzia</i> , <i>Winogradskya</i> ; of indeterminate status, <i>Gaffkya</i> , <i>Pacinia</i>	<p>1. Generic names proposed by Trevisan placed in the list of conserved generic names (<i>nomina generum conservanda</i>).</p> <p>Names of genera and subgenera Type species [SEE HERE THE LAYOUT OF THE TABLE IN THE 2008 VERSION]</p> <p><i>Beggiatoa</i> Trevisan 1842 (p. 56) <i>Beggiatoa alba</i> (Vaucher) Trevisan 1845 (<i>Oscillatoria alba</i> Vaucher 1803)</p> <p><i>Klebsiella</i> Trevisan 1885 (p. 105) <i>Klebsiella pneumoniae</i> (Schroeter) Trevisan 1887 (<i>Bacterium pneumoniae crouposae</i> Zopf 1885)</p> <p><i>Kurthia</i> Trevisan 1885 (p. 92) <i>Kurthia zopfii</i> (Kurth) Trevisan 1885 (<i>Bacterium zopfii</i> Kurth 1883)</p> <p><i>Leptotrichia</i> Trevisan 1879 (p. 138) <i>Leptotrichia buccalis</i> (Robin) Trevisan 1879 (<i>Leptothrix buccalis</i> Robin 1853)</p> <p><i>Neisseria</i> Trevisan 1885 (p. 105) <i>Neisseria gonorrhoeae</i> Trevisan 1885</p> <p>This generic name was omitted in error in the published Opinion and authority is <i>Int Bull Bacteriol Nomencl Taxon</i> 1953;3:141–154 (1953, Minute 7, File 56) and <i>Int Bull Bacteriol Nomencl Taxon</i> 1953;3:87–100.</p> <p><i>Pasteurella</i> Trevisan 1887 (p. 94)</p>

			<p><i>Pasteurella choleraegallinarum</i> Trevisan 1887 (but see Opinion 58)</p> <p>2. Generic names proposed by Trevisan placed in the list of rejected generic names (<i>nomina generum rejicienda</i>).</p> <p>Names of genera and subgenera Type species</p> <p><i>Babesia</i> Trevisan 1889 (p. 29) <i>Babesia xanthopyrethica</i> (sic) Trevisan 1889 (<i>Streptococcus xanthopyreticus</i> Trevisan 1887)</p> <p><i>Bacteriopsis</i> Trevisan 1885 (p. 103) <i>Bacteriopsis rasmussenii</i> Trevisan 1885 (<i>Leptothrix</i> I Rasmussen 1883)</p> <p><i>Billetia</i> Trevisan 1889 (p. 11) <i>Billetia laminariae</i> (Billet) Trevisan 1889 (<i>Bacterium laminariae</i> Billet 1888)</p> <p><i>Cenomesia</i> Trevisan 1889 (p. 1039) <i>Cenomesia albida</i> Trevisan 1889</p> <p><i>Cornilia</i> Trevisan 1889 (p. 21) <i>Cornilia alvei</i> (Flügge) Trevisan 1889 (<i>Bacillus alvei</i> Flügge 1886)</p> <p><i>Dicoccia</i> Trevisan 1889 (p. 26) <i>Dicoccia glossophila</i> Trevisan 1889</p> <p><i>Eucornilia</i> Trevisan 1889 (p. 21) (Subgenus) <i>Cornilia (Eucornilia) alvei</i> Trevisan 1889 (<i>Bacillus alvei</i> Cheshire and Cheyne 1885)</p> <p><i>Eumantegazzaea</i> Trevisan 1889 (p. 942) (Subgenus) <i>Mantegazzaea (Eumantegazzaea) I cienkowskii</i> Trevisan 1879</p>
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			<p><i>Eupacinia</i> Trevisan 1889 (p. 23) (Subgenus) <i>Pacinia (Eupacinia) putrifica</i> Trevisan 1889 (<i>Bacillus putrificus coli</i> Flügge 1886)</p> <p><i>Euspirillum</i> Trevisan 1889 (p. 24) Subgenus <i>Spirillum (Euspirillum) undula</i> (Mueller) Ehrenberg 1830 (<i>Vibrio undula</i> Mueller 1773)</p> <p><i>Leptotrichiella</i> Trevisan 1889 (p. 935) (Subgenus) <i>Leptotrichia (Leptotrichiella) amphibola</i> Trevisan 1889</p> <p><i>Mantegazzaea</i> Trevisan 1879 (p. 137) <i>Mantagazzaea cienkowskii</i> Trevisan 1879</p> <p><i>Octopsis</i> Trevisan 1885 (p. 102) <i>Octopsis choleraegallinarum</i> Trevisan 1885 (<i>Micrococcus cholerae-gallinarum</i> Zopf 1885)</p> <p><i>Perroncitoa</i> Trevisan 1889 (p. 29) <i>Perroncitoa scarlatinosa</i> (Trevisan) Trevisan 1889 (<i>Micrococcus scarlatinus</i> Trevisan 1879)</p> <p><i>Pleurospora</i> Trevisan 1889 (p. 22) (Subgenus) <i>Cornilia (Pleurospora) tremula</i> (Koch) Trevisan 1889 (<i>Bacillus tremulus</i> Koch 1877)</p> <p><i>Pseudospira</i> Trevisan 1889 (p. 23) (Subgenus) <i>Pacinia (Pseudospira) cholerae-asiaticae</i> Trevisan 1885 (<i>Vibrio cholera</i> Pacini 1854)</p> <p><i>Pseudospirillum</i> Trevisan 1889 (p. 25) (Subgenus)</p>
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			<p><i>Spirillum (Pseudospirillum) amphibolum</i> Trevisan 1889</p> <p>3. Trevisan's generic names which, as later homonyms or synonyms, are regarded as illegitimate. Names of genera and subgenera Type species</p> <p><i>Bollingera</i> Trevisan 1889 (p. 26) <i>Bollingera equi</i> (Rivolta) Trevisan (1889) (<i>Zoogloea pulmonis equi</i> Bollinger 1870)</p> <p><i>Rasmussenia</i> Trevisan 1889 (p. 930) <i>Rasmussenia buccalis</i> (Robin) Trevisan 1889 (<i>Leptothrix buccalis</i> Robin 1853)</p> <p><i>Schuetzia</i> Trevisan 1889 (p. 29) <i>Schuetzia poelsii</i> Trevisan 1889 (<i>Streptococcus equi</i> Sand and Jensen 1888)</p> <p><i>Winogradskya</i> Trevisan 1889 (p. 12) <i>Winogradskya ramigera</i> (Itzigsohn) Trevisan 1889 (<i>Zoogloea ramigera</i> Itzigsohn 1867)</p> <p>4. Trevisan's generic names whose status is indeterminate. Names of genera and subgenera Type species</p> <p><i>Gaffkya</i> Trevisan 1885 (p. 105); but see Opinion 39 <i>Gaffkya tetragena</i> (Gaffky) Trevisan 1885 (<i>Micrococcus tetragenus</i> Gaffky 1883)</p> <p><i>Pacinia</i> Trevisan 1885 (p. 83); but see Opinion 31 <i>Pacinia choleraeasiaticae</i> Trevisan 1885</p>
14	Names of bacterial genera to be rejected as	<i>Int Bull Bacteriol Nomencl Taxon</i> 1954;4:156–158,	The following names proposed for bacterial genera are found to be later homonyms of names applied to genera of protozoa. Rule 24 of the

	<p>later synonyms of names of genera of protozoa</p>	<p>rejection of <i>Astasia</i> Meyer 1897, <i>Astasia</i> Pribram 1929, <i>Castellanella</i> Pacheco and Rodrigues 1930, <i>Charon</i> Holmes 1948, <i>Coccomonas</i> Orla-Jensen 1921, <i>Listerella</i> Pirie, 1927, <i>Palmula</i> Prévot 1938, <i>Pfeifferella</i> Buchanan 1918, <i>Phytomonas</i> Bergey <i>et al.</i> 1923, <i>Rhizomonas</i> Orla-Jensen 1909, <i>Rhodosphaera</i> Buchanan 1918</p>	<p><i>International Code of Nomenclature of Bacteria and Viruses</i> (new Rule 51b) states that such later homonyms are illegitimate in bacteriology. These names are to be placed in the list of names of bacterial genera to be rejected (<i>nomina generum bacteriorum rejicienda</i>).</p> <p>Rejected names of bacterial genera [COLUMN SUBHEADING] Names of protozoan genera having priority [COLUMN SUBHEADING]</p> <p><i>Astasia</i> Meyer 1897 <i>Astasia</i> Ehrenberg 1830</p> <p><i>Astasia</i> Pribram 1929</p> <p><i>Castellanella</i> Pacheco and Rodrigues 1930 <i>Castellanella</i> Chalmers 1918</p> <p><i>Charon</i> Holmes 1948 (a genus of viruses) <i>Charon</i> Karsch 1879</p> <p><i>Coccomonas</i> Orla-Jensen 1921 <i>Coccomonas</i> Stein 1878</p> <p><i>Listerella</i> Pirie 1927 <i>Listerella</i> Jahn 1906</p> <p><i>Palmula</i> Prévot <i>Palmula</i> Lea 1833</p> <p><i>Pfeifferella</i> Buchanan 1918 <i>Pfeifferella</i> Labbé 1899</p> <p><i>Phytomonas</i> Bergey <i>et al.</i> 1923</p>
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			<p><i>Phytomonas</i> Donovan 1909</p> <p><i>Rhizomonas</i> Orla-Jensen 1909 <i>Rhizomonas</i> Kent 1880</p> <p><i>Rhodosphaera</i> Buchanan 1918 <i>Rhodosphaera</i> Haeckel 1881</p>
15	Conservation of the family name <i>Enterobacteriaceae</i> , of the name of the type genus, and designation of the type species	<i>Int Bull Bacteriol Nomencl Taxon</i> 1958;8:73–74, with type genus <i>Escherichia</i> Castellani and Chalmers 1919 as conserved generic name and type species <i>Escherichia coli</i> (Migula) Castellani and Chalmers 1919	<p>(1) The family name <i>Enterobacteriaceae</i> Rahn 1937 (p. 280) is placed in the list of family names (<i>nomina conservanda familiarum</i>).</p> <p>(2) The genus <i>Escherichia</i> Castellani and Chalmers 1919 (p. 941) is designated as the type genus of the family <i>Enterobacteriaceae</i> Rahn 1937.</p> <p>(3) The generic name <i>Escherichia</i> Castellani and Chalmers 1919 (p. 941) is placed in the list of conserved generic names (<i>nomina generum conservanda</i>).</p> <p>(4) The type species of the genus <i>Escherichia</i> Castellani and Chalmers 1919 [p. 941 is <i>Escherichia coli</i> (Migula) Castellani and Chalmers 1919 p. 941], basonym <i>Bacillus coli</i> Migula 1895 (p. 27); hyponym <i>Bacterium coli commune</i> Escherich 1885 (p. 518).</p>
16	Conservation of the generic name <i>Chromobacterium</i> Bergonzini 1880 and designation of the type species and the neotype culture of the type species	<i>Int Bull Bacteriol Nomencl Taxon</i> 1958;8:151–152	<p>(1) The generic name <i>Chromobacterium</i> Bergonzini 1879 is rejected and placed in the list of <i>nomina generum rejicienda</i>.</p> <p>(2) The generic name <i>Chromobacterium</i> Bergonzini 1880 is conserved and placed in the list of <i>nomina generum conservanda</i>.</p> <p>(3) The type species of the genus <i>Chromobacterium</i> Bergonzini 1880 is <i>Chromobacterium violaceum</i> Bergonzini 1880.</p> <p>(4) A neotype strain of <i>Chromobacterium violaceum</i> Bergonzini 1880 is designated and has been deposited in the American Type Culture Collection, Washington, D.C. (ATCC 12472) and in the National Collection of Type Cultures, London (NCTC 9757).</p>
17	Conservation of the generic name <i>Staphylococcus</i>	<i>Int Bull Bacteriol Nomencl Taxon</i> 1958;8:153–154	<p>(1) The generic name <i>Staphylococcus</i> Rosenbach 1884 is conserved and placed in the list of <i>nomina generum conservanda</i>.</p>

	Rosenbach, designation of <i>Staphylococcus aureus</i> as the nomenclatural type of the genus <i>Staphylococcus</i> Rosenbach, and designation of a neotype culture of <i>Staphylococcus aureus</i> Rosenbach		(2) <i>Staphylococcus aureus</i> Rosenbach 1884 is recognized as the nomenclatural type species of the genus <i>Staphylococcus</i> Rosenbach 1884. (3) The strain labeled NCTC 8532 in the National Collection of Type Cultures, London, is designated as the neotype strain of the species <i>Staphylococcus aureus</i> Rosenbach 1884.
18	Conservation of <i>typhi</i> in the binary combination <i>Salmonella typhi</i>	<i>Int Bull Bacteriol Nomencl Taxon</i> 1958;8:31–33, see also 1958;8:158–159	The specific epithet <i>typhi</i> in the name of the species <i>Salmonella typhi</i> (Schroeter) Warren and Scott is conserved over the specific epithet <i>typhosa</i> in the name of the species <i>Salmonella typhosa</i> (Zopf) White 1930, with the recognition of <i>Bacillus typhi</i> Schroeter 1886 as the basonym.
19	Conservation of the generic name <i>Rickettsia</i> da Rocha-Lima and of the species name <i>Rickettsia prowazekii</i> da Rocha-Lima	<i>Int Bull Bacteriol Nomencl Taxon</i> 1958;8:158–159	The generic name <i>Rickettsia</i> da Rocha-Lima is conserved against <i>Stricheria</i> Stempell, and the specific epithet <i>prowazekii</i> in the species name <i>Rickettsia prowazekii</i> da Rocha-Lima is conserved against the specific epithet <i>jurgensi</i> first used in the species name <i>Stricheria jurgensi</i> Stempell.
20	Status of new generic names of bacteria published without names of included species	<i>Int Bull Bacteriol Nomencl Taxon</i> 1958;8:160–162	(1) <i>Name of a hypothetical genus</i> . A hypothetical genus is one in which no species is described, named, or cited; the existence of the genus is predicated upon the future discovery and description of species as yet unknown. A name applied to a hypothetical genus is not validly published and is to be placed in the list of <i>nomina rejicienda</i> . (2) <i>Name of a “temporary” genus</i> . A generic name proposed for a genus whose sole function is stated to be to serve as the temporary generic haven for insufficiently described species, which species may be allocated later to

			<p>an appropriate genus or genera, is to be regarded as not validly published. Such a name may be placed in the list of <i>nomina rejicienda</i>.</p> <p>(3) <i>Name of a new genus with a described species which is neither named nor identified with a previously named species.</i> A new generic name published in a combined description of a genus and species, without the species being named, without citation of a previously and effectively published description of the species, and without subsequent acceptance of the generic name and naming of the species by a later author, should be regarded as not validly published. Such a generic name may be placed in the list of <i>nomina rejicienda</i>.</p> <p>However, if a later author has recognized the generic name and has used it with a specific epithet in naming the species described by the first author, particularly if there has been later general acceptance of the name, there may be validation of the generic name as proposed by its author, with the name of the species ascribed to the later author who gave it. Proposals for such validations of names should be made to the Judicial Commission for appropriate action.</p> <p>(4) <i>Name of a new genus proposed to include one or more previously described and named species, but without simultaneous publication of the new binary combination of generic name and specific epithet.</i> A published generic name applied to a new genus in which the generic name is not used in a binary combination in naming any species, but in which there is citation of a previously and effectively published description of a species under another name, is to be regarded as validly published and the consequent <i>combinationes novae</i> ascribed likewise to the author of the generic name.</p>
21	Conservation of the generic name <i>Selemonas</i> von Prowazek	<i>Int Bull Bacteriol Nomencl Taxon</i> 1958;8:163–165, with type species <i>Selenomonas sputigena</i> (Flügge) Boskamp 1922	<p>(1) The generic name <i>Selenomonas</i> von Prowazek 1913 was validly published with an accompanying description of the genus.</p> <p>(2) The species <i>Spirillum sputigenum</i> Flügge 1886 was characterized and adequate references to description given. The species was assigned to the genus <i>Selenomonas</i>.</p>

			<p>(3) <i>Selenomonas sputigena</i> (Flügge) Boskamp 1922 (basonym <i>Spirillum sputigenum</i> Flügge) is designated as the type species of <i>Selenomonas</i> von Prowazek.</p> <p>(4) The generic name <i>Selenomonas</i> von Prowazek 1913 is placed in the list of <i>nomina generum conservanda</i>.</p>
22	Status of the generic name <i>Asterococcus</i> and conservation of the generic name <i>Mycoplasma</i>	<i>Int Bull Bacteriol Nomencl Taxon</i> 1958;8:166–168, illegitimacy of <i>Asterococcus</i> Borrel <i>et al.</i> 1910, conservation of <i>Mycoplasma</i> Nowak 1929 with type species <i>Mycoplasma mycoides</i> (Borrel <i>et al.</i>) Freundt 1955	<p>(1) The generic name <i>Asterococcus</i> Borrel, Dujardin-Beaumetz, Jeantet, and Jouan 1910 is a later homonym of <i>Asterococcus</i> Scherffel 1908 and hence illegitimate.</p> <p>(2) The generic name <i>Mycoplasma</i> Nowak 1929 is placed in the list of bacterial <i>nomina generum conservanda</i> as the first legitimate generic name proposed to replace <i>Asterococcus</i> Borrel <i>et al.</i> The type species is <i>Mycoplasma mycoides</i> (Borrel <i>et al.</i>) Freundt 1955 (basonym <i>Asterococcus mycoides</i> Borrel <i>et al.</i>).</p>
23	Rejection of the generic names <i>Nitromonas</i> Winogradsky 1890 and <i>Nitromonas</i> Orla-Jensen 1909, conservation of the generic names <i>Nitrosomonas</i> Winogradsky 1892, <i>Nitrosococcus</i> Winogradsky 1892, and <i>Nitrobacter</i> Winogradsky 1892, and the designation of the type species of these genera	<i>Int Bull Bacteriol Nomencl Taxon</i> 1958;8:169–170, type species are respectively <i>Nitrosomonas europaea</i> Winogradsky 1892, <i>Nitrosococcus nitrosus</i> (Migula) Buchanan 1925, and <i>Nitrobacter winogradskyi</i> Winslow <i>et al.</i> 1917	<p>(1) The generic name <i>Nitromonas</i> Winogradsky 1890 is placed in the list of <i>nomina generum rejicienda</i>.</p> <p>(2) The generic name <i>Nitromonas</i> Orla-Jensen 1909 is a later homonym of <i>Nitromonas</i> Winogradsky 1890 and a later synonym of <i>Nitrobacter</i> Winogradsky (1892). It is placed in the list of <i>nomina generum rejicienda</i>.</p> <p>(3) The generic name <i>Nitrosomonas</i> Winogradsky 1892 is placed in the list of <i>nomina generum conservanda</i> with <i>Nitrosomonas europaea</i> Winogradsky 1892 as the nomenclatural type species.</p> <p>(4) The generic name <i>Nitrosococcus</i> Winogradsky 1892 is placed in the list of <i>nomina generum conservanda</i>, with the species described by Winogradsky and later named <i>Nitrosococcus nitrosus</i> (Migula) Buchanan 1925 as the nomenclatural type species.</p> <p>(5) The generic name <i>Nitrobacter</i> Winogradsky 1892 is placed in the list of <i>nomina generum conservanda</i>, with the species described by Winogradsky and later named <i>Nitrobacter winogradskyi</i> Winslow <i>et al.</i> 1917 as the nomenclatural type species.</p>

24	Rejection of the generic name <i>Arthrobacter</i> Fischer 1895 and conservation of the generic name <i>Arthrobacter</i> Conn and Dimmick 1947	<i>Int Bull Bacteriol Nomencl Taxon</i> 1958;8:171–172, conservation was effected though its mention was omitted in the Opinion itself. The title of the Opinion explicitly states that <i>Arthrobacter</i> Conn and Dimmick is conserved.	(1) The name <i>Arthrobacter</i> proposed by Fischer in 1895 as the name of a hypothetical genus of bacteria was not validly published and has no standing in nomenclature. (2) The generic name <i>Arthrobacter</i> Conn and Dimmick 1947 was validly published as a nomen novum. It is not an emendation of <i>Arthrobacter</i> Fischer 1895 nor a later homonym.
25	Rejection of names of bacteria in certain publications of Trécul, Hallier, Billroth, and Ogston	<i>Int Bull Bacteriol Nomencl Taxon</i> 1963;13:33–35	(1) The specific, subgeneric, generic or other names proposed in the several publications listed below were not validly published as names of taxa of bacteria and have no standing in bacteriological nomenclature. These publications are included in the list of Rejected Publications as authorized in Paragraph 8 under “Functions of the Judicial Commission,” in Section IV of the <i>International Code of Nomenclature of Bacteria and Viruses</i> : (a) Trécul A. Production de plantules amylières dans les cellules végétales pendant la putréfaction. Chlorophylle cristallisée. C. R. Acad. Sci. Paris 1865;61:432–436. (b ₁) Hallier, Ernst. Die pflanzlichen Parasiten des menschlichen Körpers für Aerzte, Botaniker und Studierende zugleich als Einleitung in das Stadium der niederen Organismen. Leipzig; 1866. (b ₂) Hallier, Ernst. Mikroskopische Untersuchungen. Zwei neue Untersuchungen über den <i>Micrococcus</i> . Flora N.S. 1868;26:654–657. (b ₃) Hallier E. Mykologische Untersuchungen. III. Untersuchungen der Parasiten beim Tripper, beim weichen Schanker, bei der Syphilis und bei der Rotzkrankheit der Pferde. Flora N.S. 1868;26:289–301. (b ₄) Hallier, Ernst. Die Parasiten der Infektionskrankheiten. <i>Z Parasitenkd</i> 1870;2:113–132. (c) Billroth CAT. Untersuchungen über die Vegetationsformen von <i>Coccobacteria septica</i> . Berlin; 1874 (d ₁) Ogston, Alex. Micrococcus poisoning. <i>J Anat Physiol</i> 1882;16:526–567.

			<p>(d2) Ogston, Alex. <i>Micrococcus poisoning</i> (cont.). <i>J Anat Physiol</i> 1883;17:24–58.</p> <p>(2) Names proposed in the above-listed publications of Trécul, Hallier, Billroth, and Ogston have in some cases been adopted by later authors as the names of bacterial taxa and one or other of the four authors named cited as author. In such cases the name of the taxon is to be ascribed to the first subsequent authors whose publication meets the requirements of valid publication as prescribed in the <i>International Code of Nomenclature of Bacteria and Viruses</i> (Rule 11 [now Rule 27]).</p>
26	Designation of neotype strains (cultures) of type species of the bacterial genera <i>Salmonella</i> , <i>Shigella</i> , <i>Arizona</i> , <i>Escherichia</i> , <i>Citrobacter</i> , and <i>Proteus</i> of the family <i>Enterobacteriaceae</i>	<i>Int Bull Bacteriol Nomencl Taxon</i> 1963;13:35–36, and 1864;14:57	<p>Neotype cultures of <i>Salmonella cholerae-suis</i>, <i>S. typhi-murium</i>, <i>Shigella dysenteriae</i>, <i>Arizona arizonae</i>, <i>Escherichia coli</i>, <i>Citrobacter freundii</i>, and <i>Proteus vulgaris</i> were approved.</p> <p>Name of species Catalogue no. NCTC London ATCC Washington FOR THE CORRECT LAYOUT OF THE TABLE HERE SEE THE 2008 CODE</p> <p><i>Salmonella cholerae-suis</i> (sic) (Smith) Weldin 1927. Type species of genus <i>Salmonella</i> Lignières 1900. 5735 13312 <i>Salmonella typhi-murium</i> (sic) Loeffler) Castellani and Chalmers 1919 74 13311 <i>Shigella dysenteriae</i> (Shiga) Castellani and Chalmers 1919. Type species of genus <i>Shigella</i> Castellani and Chalmers 1919. 4837 13313 <i>Arizona arizonae</i> Kauffmann and Edwards 1952. Type species of genus <i>Arizona</i> Kauffmann and Edwards 1952. 8297 13314 <i>Escherichia coli</i> (Migula) Castellani and Chalmers 1919. Type species of genus <i>Escherichia</i> Castellani and Chalmers 1919. 9001 11775 <i>Citrobacter freundii</i> (Braak) Werkman and Gillen 1932. Type species of genus <i>Citrobacter</i> Werkman and Gillen 1932. 9750 8090 <i>Proteus vulgaris</i> Hauser 1885. Type species of genus <i>Proteus</i> Hauser 1885. 4175 13315</p>

27	Designation of the neotype strain of <i>Streptococcus agalactiae</i> Lehmann and Neumann	<i>Int Bull Bacteriol Nomencl Taxon</i> 1963;13:37	The strain Stableforth G19 is designated as the neotype strain of <i>Streptococcus agalactiae</i> Lehmann and Neumann. This neotype strain is catalogued in the National Collection of Type Cultures as NCTC 8181 and in the American Type Culture Collection as ATCC 13813.
28	Rejection of the bacterial generic name <i>Cloaca</i> Castellani and Chalmers and acceptance of <i>Enterobacter</i> Hormaeche and Edwards as a bacterial generic name with type species <i>Enterobacter cloacae</i> (Jordan) Hormaeche and Edwards	<i>Int Bull Bacteriol Nomencl Taxon</i> 1963;13:38, conservation was effected by statement in the Summary though omitted in the title and in the Opinion itself.	The generic name <i>Cloaca</i> Castellani and Chalmers is rejected and replaced by the generic name <i>Enterobacter</i> Hormaeche and Edwards with the type species <i>Enterobacter cloacae</i> (Jordan) Hormaeche and Edwards: the basonym is <i>Bacillus cloacae</i> Jordan.
29	Designation of strain ATCC 3004 (IMRU 3004) as the neotype strain of <i>Streptomyces albus</i> (Rossi Doria) Waksman and Henrici	<i>Int Bull Bacteriol Nomencl Taxon</i> 1963;13:123–124	The strain labeled ATCC 3004 in the American Type Culture Collection, Washington, D.C., and also known as IMRU 3004 (Institute of Microbiology, Rutgers University) is designated as the neotype strain of <i>Streptomyces albus</i> (Rossi Doria) Waksman and Henrici 1943.
30	Conservation of the specific epithet <i>faecalis</i> in the species name <i>Streptococcus faecalis</i> Andrewes and Horder 1906	<i>Int Bull Bacteriol Nomencl Taxon</i> 1963;13:167	The specific epithet <i>faecalis</i> in the species name <i>Streptococcus faecalis</i> Andrewes and Horder 1906 is conserved against the specific epithets in <i>Streptococcus liquefaciens</i> Sternberg 1892, <i>S. zymogenes</i> McCallum and Hastings 1899, and all other earlier synonymous specific epithets in the genus <i>Streptococcus</i> .
31	Conservation of <i>Vibrio</i> Pacini 1854 as a bacterial generic name, conservation of <i>Vibrio</i>	<i>Int Bull Bacteriol Nomencl Taxon</i> 1965;15:185–186	<i>Vibrio cholerae</i> Pacini 1854 is conserved as the name of the type species of the bacterial genus <i>Vibrio</i> Pacini 1854, the bacterial generic name <i>Vibrio</i> Pacini 1854 is placed in the list of conserved bacterial generic names (<i>nomina generum conservanda</i>), and National Collection of Type Cultures

	<i>cholerae</i> Pacini 1854 as the nomenclatural type species of the bacterial genus <i>Vibrio</i> , and designation of neotype strain of <i>Vibrio cholerae</i> Pacini		NCTC 8021 (American Type Culture Collection, ATCC 14035) is designated as the neotype of the species <i>Vibrio cholerae</i> Pacini 1854.
32	Conservation of the specific epithet <i>rhusiopathiae</i> in the scientific name of the organism known as <i>Erysipelothrix rhusiopathiae</i> (Migula 1900) Buchanan 1918	<i>Int J Syst Bacteriol</i> 1970;20:9	The specific epithet <i>rhusiopathiae</i> in the scientific name of the organism known as <i>Erysipelothrix rhusiopathiae</i> (Migula 1900) Buchanan 1918 is conserved against the specific epithet <i>insidiosa</i> (basonym <i>Bacillus insidiosus</i> Trevisan 1885) and against all other specific epithets applied to this organism.
33	Conservation of the generic name <i>Agrobacterium</i> Conn 1942	<i>Int J Syst Bacteriol</i> 1970;20:10, type species <i>Agrobacterium tumefaciens</i> (Smith and Townsend) Conn 1942	The generic name <i>Agrobacterium</i> Conn 1942 is conserved against the name <i>Polymonas</i> Lieske 1928, which is placed in the list of <i>nomina generum rejicienda</i> . The type species, by original designation, is <i>Agrobacterium tumefaciens</i> (Smith and Townsend 1907) Conn 1942: the basonym is <i>Bacterium tumefaciens</i> Smith and Townsend 1907.
34	Conservation of the generic name <i>Rhizobium</i> Frank 1889	<i>Int J Syst Bacteriol</i> 1970;20:11–12, type species <i>Rhizobium leguminosarum</i> Frank 1889	The generic name <i>Rhizobium</i> Frank 1889 is conserved against <i>Phytomyxa</i> Schroeter 1886 and all earlier synonyms. The type species is <i>Rhizobium leguminosarum</i> (Frank 1879) Frank 1889; the basonym is <i>Schinzia leguminosarum</i> Frank 1879.
35	Conservation of the specific epithet <i>meningitidis</i> in the scientific name of the meningococcus	<i>Int J Syst Bacteriol</i> 1970;20:13–14, and designation of neotype strain (genus is now <i>Neisseria</i>)	The specific epithet “ <i>meningitidis</i> ” is conserved in the scientific name of the meningococcus (<i>Diplococcus intracellularis meningitidis</i> Weichselbaum) against all earlier specific epithets. The neotype strain of this organism is ATCC 13077 (=Sara E. Branham M1027=NCTC 10025).
36	Designation of strain ATCC 10145 as the	<i>Int J Syst Bacteriol</i> 1970;20:15–16	The neotype strain of <i>Pseudomonas aeruginosa</i> (Schroeter) Migula is ATCC 10145=CCEB 481=IBCS 277=NCIB 8295=NCTC 10332=NRRL B-771=RH 815.

	neotype strain of <i>Pseudomonas aeruginosa</i> (Schroeter) Migula		
37	Designation of strain ATCC 13525 as the neotype strain of <i>Pseudomonas fluorescens</i> Migula	<i>Int J Syst Bacteriol</i> 1970;20:17–18	The neotype strain of <i>Pseudomonas fluorescens</i> Migula is ATCC 13525=CCEB 546=NCIB 9046=NCTC 10038=RH 818=M. Rhodes 28/5.
38	Conservation of the generic name <i>Lactobacillus</i> Beijerinck	<i>Int J Syst Bacteriol</i> 1971;21:104, with new type species <i>Lactobacillus delbrueckii</i> Beijerinck 1901 and neotype strain	The generic name <i>Lactobacillus</i> Beijerinck 1901 is conserved over <i>Saccharobacillus</i> van Laer 1892 and all earlier objective synonyms. The type species of this genus is <i>Lactobacillus delbrueckii</i> Beijerinck 1901, the neotype strain of which is ATCC 9649=NCDO213. The name <i>Lactobacillus delbrueckii</i> Beijerinck 1901, although used by Beijerinck as a simplified version of the subspecific name " <i>Lactobacillus fermentum</i> var. <i>delbrucki</i> ," shall be held to be validly published by Beijerinck as a species name. The name <i>Lactobacillus caucasicus</i> Beijerinck 1901 is placed in the list of rejected names, and <i>L. caucasicus</i> ceases to be the type species of <i>Lactobacillus</i> Beijerinck.
39	Rejection of the generic name <i>Gaffkya</i> Trevisan	<i>Int J Syst Bacteriol</i> 1971;21:104–105	The generic name <i>Gaffkya</i> Trevisan 1885 is placed on the list of rejected names.
40	Rejection of the names <i>Mima</i> De Bord and <i>Herellea</i> De Bord and of the specific epithets <i>polymorpha</i> and <i>vaginicola</i> in <i>Mima polymorpha</i> De Bord and <i>Herellea vaginicola</i> De Bord, respectively	<i>Int J Syst Bacteriol</i> 1971;21:105–107, and loss of standing in nomenclature of the tribal name <i>Mimeae</i> De Bord 1939	The generic names <i>Mima</i> De Bord 1939, 1942 and <i>Herellea</i> De Bord 1942 are placed on the list of rejected names. The specific epithets <i>polymorpha</i> and <i>vaginicola</i> in <i>Mima polymorpha</i> De Bord 1939, 1942 and <i>Herellea vaginicola</i> De Bord 1942 respectively are placed on the list of rejected epithets. The tribal name <i>Mimeae</i> De Bord 1939, 1942 therefore loses its standing in nomenclature.

41	Conservation of the generic name <i>Moraxella</i> Lwoff	<i>Int J Syst Bacteriol</i> 1971;21:106, type species <i>Moraxella lacunata</i> (Eyre) Lwoff 1939, and neotype strain	The generic name <i>Moraxella</i> Lwoff 1939 is conserved over <i>Diplobacillus</i> McNab 1904 and over all earlier objective synonyms. The type species is <i>Moraxella lacunata</i> (Eyre) Lwoff 1939, and the neotype strain of this species is Morax =ATCC 17967.
42	Conservation of the specific epithet " <i>phenylpyruvica</i> " in the name <i>Moraxella phenylpyruvica</i> Bøvre and Henriksen	<i>Int J Syst Bacteriol</i> 1971;21:107, conservation over epithet <i>polymorpha</i> in the name <i>Moraxella polymorpha</i> Flamm 1957, and neotype strain	The specific epithet " <i>phenylpyruvica</i> " in the name <i>Moraxella phenylpyruvica</i> Bøvre and Henriksen 1967 is conserved against the specific epithet " <i>polymorpha</i> " in the name of the earlier objective synonym <i>Moraxella polymorpha</i> Flamm 1957 and against the specific epithets in all other earlier objective synonyms. The neotype strain of <i>Moraxella phenylpyruvica</i> is 2863 (=ATCC 23333 = NCTC 10526).
43	Conservation of the specific epithet " <i>sphaeroides</i> " in the name <i>Rhodopseudomonas sphaeroides</i> van Niel	<i>Int J Syst Bacteriol</i> 1971;21:108, and neotype strain	The specific epithet " <i>sphaeroides</i> " in the name <i>Rhodopseudomonas sphaeroides</i> van Niel 1944 is conserved against the specific epithet " <i>minor</i> " in the name of the earlier subjective synonym <i>Rhodococcus minor</i> and against the specific epithets in the names of all earlier objective synonyms of <i>Rhodopseudomonas sphaeroides</i> . The neotype strain is van Niel's ATH 2.4.1 (=ATCC 17023).
44	Validation of the generic name <i>Chloropseudomonas</i> Czurda and Maresch 1937 and designation of the type species	<i>Int J Syst Bacteriol</i> 1971;21:109, type species <i>Chloropseudomonas ethylica</i> Shaposhnikov <i>et al.</i> 1960	The generic name <i>Chloropseudomonas</i> is held to be validly published by Czurda and Maresch 1937. The type species is <i>Chloropseudomonas ethylica</i> Shaposhnikov, Kondratieva, and Fedorov 1960.
45	Rejection of the name <i>Leuconostoc citrovorum</i> (Hammer) Hucker and Pederson	<i>Int J Syst Bacteriol</i> 1971;21:109–110	The name <i>Leuconostoc citrovorum</i> (Hammer 1920) Hucker and Pederson 1931, together with its objective synonyms, is regarded as a <i>nomen dubium</i> and is placed on the list of rejected names.
46	Rejection of the generic name <i>Aerobacter</i> Beijerinck	<i>Int J Syst Bacteriol</i> 1971;21:110	The generic name <i>Aerobacter</i> Beijerinck 1900 is regarded as a <i>nomen ambiguum</i> and is placed on the list of rejected generic names.
47	Conservation of the specific epithet <i>avium</i> in	<i>Int J Syst Bacteriol</i> 1973;23:472	The specific epithet <i>avium</i> is conserved against the specific epithet <i>tuberculosis-gallinarum</i> and all earlier objective synonyms in the scientific

	the scientific name of the agent of avian tuberculosis		name of the agent of avian tuberculosis. The name <i>Mycobacterium avium</i> shall be held to be validly published by Chester in 1901. The neotype strain of <i>M. avium</i> Chester is ATCC 25291.
48	Rejection of the name <i>Aerobacter liquefaciens</i> Beijerinck and conservation of the name <i>Aeromonas</i> Stanier with <i>Aeromonas hydrophila</i> as the type species	<i>Int J Syst Bacteriol</i> 1973;23:473–474	The name <i>Aerobacter liquefaciens</i> Beijerinck 1900 is a <i>nomen dubium</i> and, together with all objective synonyms of this name, is placed on the list of rejected names. The generic name <i>Aeromonas</i> Stanier 1943, with type species <i>Aeromonas hydrophila</i> (Chester 1901) Stanier 1943, is conserved. The name <i>Aeromonas</i> is not to be attributed to Kluver and van Niel. The neotype strain of <i>A. hydrophila</i> is ATCC 7966.
49	Conservation of the generic name <i>Rhodopseudomonas</i> Czurda and Maresch emend. van Niel	<i>Int J Syst Bacteriol</i> 1974;24:551	The generic name <i>Rhodopseudomonas</i> Czurda and Maresch 1937 emend. van Niel 1944 is conserved over all earlier objective synonyms; the type species is <i>Rhodopseudomonas palustris</i> (Molisch 1907) van Niel 1944 (basonym <i>Rhodobacillus palustris</i> Molisch 1907).
50	Conservation of the epithet <i>fermentum</i> in the combination <i>Lactobacillus fermentum</i> Beijerinck	<i>Int J Syst Bacteriol</i> 1974;24:551–552	The species name <i>Lactobacillus fermentum</i> Beijerinck 1901 shall be held to be validly published by Beijerinck 1901 as the name of a bacterial species, and the epithet <i>fermentum</i> in the combination <i>Lactobacillus fermentum</i> Beijerinck 1901 is conserved over the epithets in all other objective synonyms. The neotype strain of <i>Lactobacillus fermentum</i> is ATCC 4931.
51	Conservation of the epithet <i>fortuitum</i> in the combination <i>Mycobacterium fortuitum</i> da Costa Cruz	<i>Int J Syst Bacteriol</i> 1974;25:552	The specific epithet fortuitum in the name <i>Mycobacterium fortuitum</i> da Costa Cruz 1938 is conserved against the epithet <i>ranae</i> in the subjective synonym <i>Mycobacterium ranae</i> Bergey <i>et al.</i> 1923 and against the specific epithets in the names of all objective synonyms of <i>Mycobacterium fortuitum</i> and <i>Mycobacterium ranae</i> . The type strain of <i>Mycobacterium fortuitum</i> is ATCC 6841.
52	Conservation of the generic name <i>Pediococcus</i> Claussen with the type species	<i>Int J Syst Bacteriol</i> 1976;26:292, replacement of type species <i>P. cerevisiae</i> by <i>P. damnosus</i>	The generic name <i>Pediococcus</i> Claussen 1903 is conserved over <i>Pediococcus</i> Balcke 1884 and all earlier objective synonyms. The type species is <i>Pediococcus damnosus</i> Claussen 1903, and the neotype strain is Be.I

	<i>Pediococcus damnosus</i> Claussen		(=NCDO 1832). <i>Pediococcus</i> Balcke 1884 and the species name <i>Pediococcus cerevisiae</i> Balcke 1884 are not validly published.
53	Rejection of the species name <i>Mycobacterium marianum</i> Penso 1953	<i>Int J Syst Bacteriol</i> 1978;28:334, confusion between the epithets <i>marianum</i> and <i>marinum</i>	The species name <i>Mycobacterium marianum</i> Penso 1953 is placed on the list of <i>nomina rejicienda</i> as a <i>nomen perplexum</i> because it is a source of confusion.
54	Rejection of the species name <i>Pseudomonas denitrificans</i> (Christensen) Bergey et al. 1923	<i>Int J Syst Bacteriol</i> 1982;32:466	The species name <i>Pseudomonas denitrificans</i> (Christensen) Bergey et al. 1923 is placed on the list of <i>nomina rejicienda</i> as a <i>nomen ambiguum</i> because it is a source of confusion.
55	Rejection of the species name <i>Mycobacterium aquae</i> Jenkins et al. 1972	<i>Int J Syst Bacteriol</i> 1982;32:467	The species name <i>Mycobacterium aquae</i> Jenkins et al. 1972 is placed on the list of <i>nomina rejicienda</i> as a <i>nomen ambiguum</i> because it is a source of confusion.
56	Rejection of the species name <i>Peptococcus anaerobius</i> (Hamm) Douglas 1957	<i>Int J Syst Bacteriol</i> 1982;32:468	The species name <i>Peptococcus anaerobius</i> (Hamm) Douglas 1957 is placed on the list of <i>nomina rejicienda</i> as a <i>nomen dubium</i> and a <i>nomen perplexum</i> because it is a source of confusion.
57	Designation of <i>Eubacterium limosum</i> (Eggerth) Prévot 1938 as the type species of <i>Eubacterium</i>	<i>Int J Syst Bacteriol</i> 1983;33:434, replacement of type species <i>E. foedans</i> by <i>E. limosum</i>	The type species of the genus <i>Eubacterium</i> Prévot 1938 is designated <i>E. limosum</i> (Eggerth) Prévot 1938 (type strain, ATCC 8486).
58	Confirmation of the type species in the Approved Lists as nomenclatural types including recognition of <i>Nocardia asteroides</i> (Eppinger 1891) Blanchard 1896	<i>Int J Syst Bacteriol</i> 1985;35:538, confirmation of new type species for <i>Nocardia</i> and <i>Pasteurella</i> (see Opinion 13) and rejection of <i>P. gallicida</i> as an objective synonym of <i>P. multocida</i> (Editorial Note. As	The names (<i>Editorial Note</i> . This should read "The types.") of the bacterial taxa cited in the Approved Lists of Bacterial Names are formally and explicitly confirmed as correct and supersede any others in use before the appearance of the lists but without prejudice to the powers of the Judicial Commission to amend them. The species names <i>Nocardia asteroides</i> (Eppinger 1891) Blanchard 1896 and <i>Pasteurella multocida</i> (Lehmann and Neumann 1899) Rosenbusch and Marchant 1939 are the valid type species

	and <i>Pasteurella multocida</i> (Lehmann and Neumann 1899) Rosenbusch and Marchant 1939 as the respective type species of the genera <i>Nocardia</i> and <i>Pasteurella</i> and rejection of the type species name <i>Pasteurella gallicida</i> (Burrill 1883) Buchanan 1925	stated in the title and summary, the Opinion also confirms the nomenclatural types in the Approved Lists, but without prejudice to the powers of the Judicial Commission to amend them.)	of their respective genera, thus reversing those elements of Opinion 13 that apply to these two genera. The species name <i>Pasteurella gallicida</i> (Burrill 1883) Buchanan 1925 is placed on the list of <i>nomina rejicienda</i> .
59	Designation of NCIB 11664 in place of ATCC 23767 (NCIB 4112) as the type strain of <i>Acetobacter aceti</i> subsp. <i>xylinum</i> (sic) (Brown 1886) De Ley and Frateur 1974	<i>Int J Syst Bacteriol</i> 1985;35:539. The epithet <i>xylinum</i> should be spelled <i>xylinus</i> (see Opinion 3).	The type strain of <i>Acetobacter aceti</i> subsp. <i>xylinus</i> is NCIB 11664 (=NCIB 4112B) not ATCC 23767 (=NCIB 4112=NCIB 11301=CIP 57.14).
60	Rejection of the name <i>Yersinia pseudotuberculosis</i> subsp. <i>pestis</i> (van Loghem) Bercovier <i>et al.</i> 1981 and conservation of the name <i>Yersinia pestis</i> (Lehmann and Neumann) van Loghem 1944 for the plague bacillus	<i>Int J Syst Bacteriol</i> 1985;35:540, see also Rule 56a(5)	The name <i>Yersinia pseudotuberculosis</i> subsp. <i>pestis</i> (van Loghem) Bercovier <i>et al.</i> 1981 is placed on the list of <i>nomina rejicienda</i> because the use of the name could have serious consequences for human welfare and health. The name <i>Yersinia pestis</i> is conserved for the plague bacillus. The opinion does not challenge the scientific evidence, which indicates the taxonomic relatedness of bacteria named <i>Yersinia pestis</i> and <i>Yersinia pseudotuberculosis</i> .

61	Rejection of the type strain of <i>Pasteuria ramosa</i> (ATCC 27377) and conservation of the species <i>Pasteuria ramosa</i> Metchnikoff 1888 on the basis of the type descriptive material	<i>Int J Syst Bacteriol</i> 1986;36:119	Strain ATCC 27377 is rejected as the type strain of the species <i>Pasteuria ramosa</i> Metchnikoff 1888 because it is quite different from the bacteria observed and described by Metchnikoff and to which he gave the name <i>Pasteuria ramosa</i> : <i>Pasteuria ramosa</i> is conserved with the description of Metchnikoff, as amended by Starr <i>et al.</i> 1983, serving as the type species. (Editorial Note. This should read “serving as the type.”) In issuing this opinion the Judicial Commission declines to comment on the assignment of strain ATCC 27377 to another genus because this is a taxonomic matter and not one of nomenclature.
62	Transfer of the type species of the genus <i>Methanococcus</i> to the genus <i>Methanosarcina</i> as <i>Methanosarcina mazei</i> (Barker 1936) comb. nov. et emend. Mah and Kuhn 1984 and conservation of the genus <i>Methanococcus</i> (Approved Lists 1980) emend. Mah and Kuhn 1984 with <i>Methanococcus vannielii</i> (Approved Lists 1980) as the type species	<i>Int J Syst Bacteriol</i> 1986;36:491	<i>Methanococcus mazei</i> , the type species of the genus <i>Methanococcus</i> , is transferred to the genus <i>Methanosarcina</i> as <i>Methanosarcina mazei</i> (Barker 1936) comb. nov. et emend. Mah and Kuhn 1984. The genus <i>Methanococcus</i> (Approved Lists 1980) emend. Mah and Kuhn 1984 is conserved with <i>Methanococcus vannielii</i> Stadtman and Barker 1951 (Approved Lists 1980) as the type species.
63	Rejection of the type species <i>Methanosarcina methanica</i> (Approved Lists 1980) and conservation of the genus <i>Methanosarcina</i> (Approved Lists 1980)	<i>Int J Syst Bacteriol</i> 1986;36:492	<i>Methanosarcina methanica</i> (Approved Lists 1980), the nomenclatural type species of the genus <i>Methanosarcina</i> (Approved Lists 1980), is placed on the list of <i>nomina rejicienda</i> as a <i>nomen dubium et confusum</i> because it is a source of doubt and confusion. The genus <i>Methanosarcina</i> (Approved Lists 1980) emend. Mah and Kuhn 1984 is conserved with <i>Methanosarcina barkeri</i> (Approved Lists 1980) as the type species.

	emend. Mah and Kuhn 1984 with <i>Methanosarcina barkeri</i> (Approved Lists 1980) as the type species		
64	Designation of strain MF (DSM 1535) in place of strain M.o.H. (DSM 863) as the type strain of <i>Methanobacterium formicum</i> Schnellen 1947, and designation of strain M.o.H. (DSM 863) as the type strain of <i>Methanobacterium bryantii</i> (Balch and Wolfe in Balch, Fox, Magrum, Woese, and Wolfe 1979, 284) Boone 1987, 173	<i>Int J Syst Bacteriol</i> 1992;42:654; doi:10.1099/00207713-42-4-654	The type strain of <i>Methanobacterium formicum</i> is strain MF (DSM 1535), replacing strain M.o.H. (DSM 863). <i>Methanobacterium bryantii</i> is reinstated with its type strain M.o.H. (DSM 863).
65	Designation of strain VPI D 19B-28 (ATCC 35185) in place of strain VPI 10068 (ATCC 33150) as the type strain of <i>Selenomonas sputigena</i> (Flügge 1886) Boskamp 1922	<i>Int J Syst Bacteriol</i> 1992;42:655; doi:10.1099/00207713-42-4-655	The type strain of <i>Selenomonas sputigena</i> is VPI D 19B-2 (ATCC 35185), replacing VPI 10068 (ATCC 33150). (NB VPI D 19B-28 is the correct number, not VPI D 19B-29, which is given in the ATCC catalog, 17th ed.).
66	Designation of strain NS 51 (NCTC 12261) in place of strain NCTC 3165 as	<i>Int J Syst Bacteriol</i> 1993;43:391;	The type strain of <i>Streptococcus mitis</i> is NS 51 (NCTC 12261), replacing NCTC 3165.

	the type strain of <i>Streptococcus mitis</i> Andrewes and Horder 1906	doi:10.1099/00207713-43-2-391	
67	Rejection of the name <i>Citrobacter diversus</i> Werkman and Gillen 1932	<i>Int J Syst Bacteriol</i> 1993;43:392; doi:10.1099/00207713-43-2-392	The name <i>Citrobacter diversus</i> Werkman and Gillen 1932 is placed on the list of <i>nomina rejicienda</i> because it was incorrectly used by Ewing and Davis in 1972 as the name for a new species that cannot be considered identical to the organism described by Werkman and Gillen and thus is a <i>nomen dubium</i> .
68	Designation of strain B213c (DSM 20284) in place of Strain NCDO 1859 as the type strain of <i>Pediococcus acidilactici</i> Lindner 1887	<i>Int J Syst Bacteriol</i> 1996;46:835; doi:10.1099/00207713-46-3-835	<i>Pediococcus acidilactici</i> is conserved with neotype strain B213c (=DSM 20284), which replaces NCDO 1859.
69	Rejection of <i>Clostridium putrificum</i> and conservation of <i>Clostridium botulinum</i> and <i>Clostridium sporogenes</i>	<i>Int J Syst Bacteriol</i> 1999;49:339; doi:10.1099/00207713-49-1-339	The name <i>Clostridium putrificum</i> is rejected while <i>Clostridium botulinum</i> is conserved for toxigenic strains and <i>Clostridium sporogenes</i> is conserved for nontoxigenic strains.
70	Replacement of strain NCTC 4175, since 1963 the neotype strain of <i>Proteus vulgaris</i> , with strain ATCC 29905	<i>Int J Syst Bacteriol</i> 1999;49:1949; doi:10.1099/00207713-49-4-1949	The Judicial Commission decided that strain NCTC 4175, used as the neotype strain of <i>Proteus vulgaris</i> since 1963, be replaced by strain ATCC 29905.
71	Valid publication of the genus name <i>Thermodesulfobacterium</i> and the species names <i>Thermodesulfobacterium</i>	<i>Int J Syst Evol Microbiol</i> 2003;53:927; doi:10.1099/ijms.0.02494-0	The Judicial Commission of the International Committee on Systematics of Prokaryotes decided that the date of valid publication of the genus name <i>Thermodesulfobacterium</i> and of the species names <i>Thermodesulfobacterium commune</i> and <i>Thermodesulfobacterium thermophilum</i> is 1995. <i>Thermodesulfobacterium mobile</i> Rozanova and

	<i>commune</i> Zeikus <i>et al.</i> 1983 and <i>Thermodesulfobacterium thermophilum</i> (ex <i>Desulfovibrio thermophilus</i> Rozanova and Khudyakova 1974)		Pivovarova 1988 is an illegitimate, later synonym of <i>Thermodesulfobacterium thermophilum</i> .
72	Strain DSM 6035 is the type strain of <i>Lactobacillus panis</i> Wiese <i>et al.</i> 1996	<i>Int J Syst Evol Microbiol</i> 2003;53:920; doi:10.1099/ijs.0.02495-0	The Judicial Commission of the International Committee on Systematics of Prokaryotes decided that strain DSM 6035 is the type strain of <i>Lactobacillus panis</i> with the consequence that the name <i>Lactobacillus panis</i> has been validly published.
73	<i>Paenibacillus durus</i> (Collins <i>et al.</i> 1994, formerly <i>Clostridium durum</i> Smith and Cato 1974) has priority over <i>Paenibacillus azotofixans</i> (Seldin <i>et al.</i> 1984)	<i>Int J Syst Evol Microbiol</i> 2003;53:931; doi:10.1099/ijs.0.02496-0	The Judicial Commission adjusted the gender of the specific epithet to <i>durus</i> (masculine) and decided that the name <i>Paenibacillus durus</i> has priority over <i>Paenibacillus azotofixans</i> ; furthermore, it was decided that the type strain of <i>Paenibacillus durus</i> is VPI 6563 (=ATCC 27763=DSM 1735), not P3L5 (=ATCC 35681). The name <i>Paenibacillus azotofixans</i> is a later synonym of <i>Paenibacillus durus</i> .
74	Strain NCIMB 13488 may serve as the type strain of <i>Halorubrum trapanicum</i>	<i>Int J Syst Evol Microbiol</i> 2003;53:933; doi:10.1099/ijs.0.02497-0	The Judicial Commission decided that <i>Halorubrum trapanicum</i> strain NCIMB 13488 will not be the neotype, but since it is derived from strain NRC 34021, which in turn is derived from Petter's original isolate, it is 'a strain on which the original description was based' [Rule 18c of the Bacteriological Code (1990 Revision); Lapage <i>et al.</i> , 1992], and may therefore also serve as the type strain of the species.
75	Rejection of the genus name <i>Methanothrix</i> with the species <i>Methanothrix soehngenii</i> Huser <i>et al.</i> 1983 and transfer of <i>Methanothrix</i>	<i>Int J Syst Evol Microbiol</i> 2008;58:1753–1754; doi:10.1099/ijs.0.2008/005355-0	The Judicial Commission of the International Committee on Systematics of Prokaryotes has decided to place the genus <i>Methanothrix</i> with the species <i>Methanothrix soehngenii</i> Huser <i>et al.</i> 1983 on the list of <i>nomina rejicienda</i> , based on the fact that it is not represented by an axenic culture and contravenes Rule 31a of the International Code of Nomenclature of Bacteria. The species <i>Methanothrix thermophila</i> is transferred to the genus

	<i>thermophila</i> Kamagata <i>et al.</i> 1992 to the genus <i>Methanosaeta</i> as <i>Methanosaeta thermophila</i> comb. nov.		<i>Methanosaeta</i> as <i>Methanosaeta thermophila</i> (Kamagata <i>et al.</i> 1992) Boone and Kamagata 1998 comb. nov.
75 (suppl.)	The genus name <i>Methanotherix</i> Huser <i>et al.</i> 1983 and the species combination <i>Methanotherix soehngenii</i> Huser <i>et al.</i> 1983 do not contravene Rule 31a and are not to be considered as rejected names, the genus name <i>Methanosaeta</i> Patel and Sprott 1990 refers to the same taxon as <i>Methanotherix soehngenii</i> Huser <i>et al.</i> 1983 and the species combination <i>Methanotherix thermophila</i> Kamagata <i>et al.</i> 1992 is rejected	<i>Int J Syst Evol Microbiol</i> 2014;64:3597–3598; doi:10.1099/ijms.0.069252-0	The Judicial Commission affirms that the genus name <i>Methanotherix</i> Huser <i>et al.</i> 1983 and the species combination <i>Methanotherix soehngenii</i> Huser <i>et al.</i> 1983 do not contravene Rule 31a and are not to be considered as rejected names. The genus name <i>Methanosaeta</i> Patel and Sprott 1990 applies to the same taxon as <i>Methanotherix</i> Huser <i>et al.</i> 1983 and is therefore a later heterotypic synonym. The combinations <i>Methanotherix thermoacetophila</i> corrig. Nozhevnikova and Chudina 1988 and <i>Methanotherix thermophila</i> Kamagata <i>et al.</i> 1992 are considered to refer to the same taxon, a consequence of which is that <i>Methanotherix thermophila</i> Kamagata <i>et al.</i> 1992 contravenes Rule 51b and is placed on the List of Rejected Names.
76	Strain NBRC (formerly IFO) 3782 is the type strain of <i>Streptomyces rameus</i> Shibata 1959	<i>Int J Syst Evol Microbiol</i> 2005;55:511; doi:10.1099/ijms.0.63545-0	The Judicial Commission of the International Committee for Systematics of Prokaryotes decided that strain NBRC (formerly IFO) 3782 (=No. 43797), which was the originally designated type strain, has to replace ATCC 21273 as the type strain of <i>Streptomyces rameus</i> . ATCC 21273 was given as the type strain in the Approved Lists 1980.

77	The type species of the genus <i>Paenibacillus</i> Ash <i>et al.</i> 1994 is <i>Paenibacillus polymyxa</i>	<i>Int J Syst Evol Microbiol</i> 2005;55:513; doi:10.1099/ijms.0.63546-0	The Judicial Commission of the International Committee for Systematics of Prokaryotes decided that the type species of the genus <i>Paenibacillus</i> is <i>Paenibacillus polymyxa</i> .
78	Rejection of the genus name <i>Pelczaria</i> with the species <i>Pelczaria aurantia</i> Poston 1994	<i>Int J Syst Evol Microbiol</i> 2005;55:515; doi:10.1099/ijms.0.63547-0	The Judicial Commission of the International Committee for Systematics of Prokaryotes has decided to place the genus <i>Pelczaria</i> with the species <i>Pelczaria aurantia</i> on the list of <i>nomina rejicienda</i> , due to the lack of an authentic type or neotype strain.
79	The nomenclatural types of the orders <i>Acholeplasmatales</i> , <i>Halanaerobiales</i> , <i>Halobacteriales</i> , <i>Methanobacteriales</i> , <i>Methanococcales</i> , <i>Methanomicrobiales</i> , <i>Planctomycetales</i> , <i>Prochlorales</i> , <i>Sulfolobales</i> , <i>Thermococcales</i> , <i>Thermoproteales</i> and <i>Verrucomicrobiales</i> are the genera <i>Acholeplasma</i> , <i>Halanaerobium</i> , <i>Halobacterium</i> , <i>Methanobacterium</i> , <i>Methanococcus</i> , <i>Methanomicrobium</i> , <i>Planctomyces</i> , <i>Prochloron</i> , <i>Sulfolobus</i> , <i>Thermococcus</i> ,	<i>Int J Syst Evol Microbiol</i> 2005;55:517–518; doi:10.1099/ijms.0.63548-0	The Judicial Commission corrected the nomenclatural types of twelve orders, for which, in violation of Rules 15 and 21a of the Bacteriological Code (1990 Revision), families instead of genera had been proposed as nomenclatural types. The following orders have the following genera as nomenclatural types: order <i>Acholeplasmatales</i> Freundt <i>et al.</i> 1984, genus <i>Acholeplasma</i> Edward and Freundt 1970 (Approved Lists 1980); <i>Halanaerobiales</i> Rainey and Zhilina 1995, <i>Halanaerobium</i> Zeikus <i>et al.</i> 1984; <i>Halobacteriales</i> Grant and Larsen 1989, <i>Halobacterium</i> Elazari-Volcani 1957 (Approved Lists 1980); <i>Methanobacteriales</i> Balch and Wolfe 1981, <i>Methanobacterium</i> Kluver and van Niel 1936 (Approved Lists 1980); <i>Methanococcales</i> Balch and Wolfe 1981, <i>Methanococcus</i> Kluver and van Niel 1936 emend. Barker 1936 (Approved Lists 1980); <i>Methanomicrobiales</i> Balch and Wolfe 1981, <i>Methanomicrobium</i> Balch and Wolfe 1981; <i>Planctomycetales</i> Schlesner and Stackebrandt 1987, <i>Planctomyces</i> Gimesi 1924 (Approved Lists 1980); <i>Prochlorales</i> (ex Lewin 1977) Florenzano <i>et al.</i> 1986, <i>Prochloron</i> (ex Lewin 1977) Florenzano <i>et al.</i> 1986; <i>Sulfolobales</i> Stetter 1989, <i>Sulfolobus</i> Brock <i>et al.</i> 1972 (Approved Lists 1980); <i>Thermococcales</i> Zillig <i>et al.</i> 1988, <i>Thermococcus</i> Zillig 1983; <i>Thermoproteales</i> Zillig and Stetter 1982, <i>Thermoproteus</i> Zillig and Stetter 1982; <i>Verrucomicrobiales</i> Ward-Rainey <i>et al.</i> 1996, <i>Verrucomicrobium</i> Schlesner 1988.

	<i>Thermoproteus</i> and <i>Verrucomicrobium</i> , respectively		
79 (suppl.)	Names at the rank of class, subclass and order, their typification and current status	<i>Int J Syst Evol Microbiol</i> 2014;64:3599–3602; doi:10.1099/ijs.0.069310-0	The attention of the Judicial Commission was drawn to issues relating to the use of names at the rank of class, subclass and order and the nomenclatural type of names at the rank of class and subclass that were not covered by Opinion 79. The Judicial Commission ruled that names at the rank of class and order proposed by Cavalier-Smith (<i>Int J Syst Evol Microbiol</i> 2002;52:7–76) are to be placed on the List of Rejected Names (<i>nomina rejicienda</i>) and the use of names proposed in that publication above the rank of class is to be actively discouraged. In addition a list of names at the rank of class, subclass and order is given where the nomenclatural type, description or circumscription is unclear or where they otherwise appear to be not in accordance with the Rules of the International Code of Nomenclature of Bacteria.
80	The type species of the genus <i>Salmonella</i> Lignieres 1900 is <i>Salmonella enterica</i> (ex Kauffmann and Edwards 1952) Le Minor and Popoff 1987, with the type strain LT2T, and conservation of the epithet enterica in <i>Salmonella enterica</i> over all earlier epithets that may be applied to this species	<i>Int J Syst Evol Microbiol</i> 2005;55:519–520; doi:10.1099/ijs.0.63579-0	The Judicial Commission of the International Committee for Systematics of Prokaryotes has decided that the type species of the genus <i>Salmonella</i> Lignieres 1900 is <i>Salmonella enterica</i> (ex Kauffmann and Edwards 1952) Le Minor and Popoff 1987 and that the type strain of this species is strain LT2 ^T . In addition, the epithet enterica in <i>Salmonella enterica</i> is conserved over all earlier epithets that may be applied to this species. The Judicial Commission is aware that this Opinion has consequences for the nomenclature and taxonomy of this group of organisms. Refer to accompanying commentary and references in the Opinion.
81	Status of strains that contravene Rules 27 (3)	<i>Int J Syst Evol Microbiol</i> 2008;58:1755–1763;	Based on a list of 205 names proposed in original articles in the <i>International Journal of Systematic and Evolutionary Microbiology</i> or cited

	and 30 of the International Code of Nomenclature of Bacteria	doi:10.1099/ij.s.0.2008/005264-0	in Validation Lists from January 2001 that are not in accordance with Rules 27(3) and 30 of the International Code of Nomenclature of Bacteria (the Code), the Judicial Commission rules that names contained in lists 2–4 are to be considered to be validly published and that deposit in more than one collection in different countries is documented. Names included in list 1 are only to be considered validly published if evidence is presented that the strains have been deposited in additional collections, as laid down by Rules 27(3) and 30 of the Code.
82	The type strain of <i>Lactobacillus casei</i> is ATCC 393, ATCC 334 cannot serve as the type because it represents a different taxon, the name <i>Lactobacillus paracasei</i> and its subspecies names are not rejected and the revival of the name ' <i>Lactobacillus zeae</i> ' contravenes Rules 51b (1) and (2) of the International Code of Nomenclature of Bacteria	<i>Int J Syst Evol Microbiol</i> 2008;58:1764–1765; doi:10.1099/ij.s.0.2008/005330-0	The Judicial Commission affirms that typification of <i>Lactobacillus casei</i> is based on ATCC 393, that ATCC 334 is a member of a different taxon and that the publication rejecting the name <i>Lactobacillus paracasei</i> (and its included subspecies) together with the revival of the name ' <i>Lactobacillus zeae</i> ' contravenes Rules 51b (1) and (2) of the International Code of Nomenclature of Bacteria.
83	The subgenus names <i>Moraxella</i> subgen. <i>Moraxella</i> and <i>Moraxella</i> subgen. <i>Branhamella</i> and the species names included within these taxa should have been	<i>Int J Syst Evol Microbiol</i> 2008;58:1766–1767; doi:10.1099/ij.s.0.2008/005272-0	The Judicial Commission of the International Committee for Systematics of Prokaryotes rules that the following names should have been included on the Approved Lists of Bacterial Names, <i>Moraxella</i> (subgen. <i>Branhamella</i> Bøvre 1979), <i>Moraxella</i> (subgen. <i>Moraxella</i> Lwoff 1939), <i>Moraxella</i> (subgen. <i>Branhamella</i> Bøvre 1979) <i>catarrhalis</i> , <i>Moraxella</i> (subgen. <i>Branhamella</i> Bøvre 1979) <i>caviae</i> , <i>Moraxella</i> (subgen. <i>Branhamella</i> Bøvre 1979) <i>ovis</i> , <i>Moraxella</i> (subgen. <i>Moraxella</i> Lwoff 1939) <i>atlantae</i> , <i>Moraxella</i> (subgen.

	included on the Approved Lists of Bacterial Names and a ruling on the proposal to make changes to Rule 34a		<i>Moraxella</i> Lwoff 1939) <i>bovis</i> , <i>Moraxella</i> (subgen. <i>Moraxella</i> Lwoff 1939) <i>lacunata</i> , <i>Moraxella</i> (subgen. <i>Moraxella</i> Lwoff 1939) <i>nonliquefaciens</i> , <i>Moraxella</i> (subgen. <i>Moraxella</i> Lwoff 1939) <i>osloensis</i> , <i>Moraxella</i> (subgen. <i>Moraxella</i> Lwoff 1939) <i>phenylpyruvica</i> . Proposals to alter Rule 34a were rejected.
83 (suppl.)	The subgenus names <i>Moraxella</i> and <i>Branhamella</i> (in the genus <i>Moraxella</i>) are not in accordance with the International Code of Nomenclature of Bacteria and are therefore not validly published	<i>Int J Syst Evol Microbiol</i> 2014;64:3595–3596; doi:10.1099/ij.s.0.069245-0	The publication of Opinion 83, which dealt with the valid publication of the subgenus names <i>Moraxella</i> and <i>Branhamella</i> (in the genus <i>Moraxella</i>), has highlighted a problem relating to the absence of descriptions associated with these names at the time they were effectively published. This calls into question whether the ruling outlined in Opinion 83, that these names should have qualified for inclusion on the Approved Lists of Bacterial Names, and their inclusion on Validation List 15 are not in accordance with Rule 27 of the International Code of Nomenclature of Bacteria governing the valid publication of a name. The subgenus names <i>Moraxella</i> and <i>Branhamella</i> (in the genus <i>Moraxella</i>) are not to be considered to be included on the Approved Lists of Bacterial Names, nor are they to be considered to be validly published by inclusion on Validation List 15.
84	The genus name <i>Sinorhizobium</i> Chen <i>et al.</i> 1988 is a later synonym of <i>Ensifer</i> Casida 1982 and is not conserved over the latter genus name, and the species name ' <i>Sinorhizobium adhaerens</i> ' is not validly published	<i>Int J Syst Evol Microbiol</i> 2008;58:1973; doi:10.1099/ij.s.0.2008/005991-0	The Judicial Commission affirms that the genus name <i>Sinorhizobium</i> Chen <i>et al.</i> 1988 is a later synonym of <i>Ensifer</i> Casida 1982, and that the former genus name is not conserved over the latter genus name. The species name ' <i>Sinorhizobium adhaerens</i> ' is not validly published.
85	The adjectival form of the epithet in <i>Tannerella</i>	<i>Int J Syst Evol Microbiol</i> 2008;58:1974;	The Judicial Commission rules that the adjectival form is to be conserved in the specific epithet <i>forsythia</i> in <i>Tannerella forsythia</i> .

	<i>forsythensis</i> Sakamoto et al. 2002 is to be retained and the name is to be corrected to <i>Tannerella forsythia</i> Sakamoto et al. 2002	doi:10.1099/ij.s.0.2008/006007-0	
86	Necessary corrections to the Approved Lists of Bacterial Names according to Rule 40d (formerly Rule 46)	<i>Int J Syst Evol Microbiol</i> 2008;58:1975; doi:10.1099/ij.s.0.2008/006015-0	The Judicial Commission affirms that, according to Rule 40d, formerly Rule 46, of the Bacteriological Code, the authorship of a number of subspecies names included on the Approved Lists of Bacterial Names must be corrected. These names are <i>Acetobacter aceti</i> subsp. <i>aceti</i> , <i>Acetobacter pasteurianus</i> subsp. <i>pasteurianus</i> , <i>Bacteroides melaninogenicus</i> subsp. <i>melaninogenicus</i> , <i>Campylobacter fetus</i> subsp. <i>fetus</i> , <i>Mycobacterium chelonae</i> subsp. <i>chelonae</i> , <i>Propionibacterium freudenreichii</i> subsp. <i>freudenreichii</i> , <i>Selenomonas ruminantium</i> subsp. <i>ruminantium</i> , <i>Streptovercillium fervens</i> subsp. <i>fervens</i> , <i>Veillonella parvula</i> subsp. <i>parvula</i> and <i>Zymomonas mobilis</i> subsp. <i>mobilis</i> .
87	<i>Corynebacterium ilicis</i> is typified by ICMP 2608 =ICPB C1144, <i>Arthrobacter ilicis</i> is typified by DSM 20138 =ATCC 14264 =NCPPB 1228 and the two are not homotypic synonyms, and clarification of the authorship of these two species	<i>Int J Syst Evol Microbiol</i> 2008;58: 1976–1978; doi:10.1099/ij.s.0.2008/006221-0	The Judicial Commission rules that the name <i>Corynebacterium ilicis</i> Mandel et al. 1961 is represented by the type strain ICMP 2608 =ICPB C1144 and is reported to be a plantpathogenic species. <i>Arthrobacter ilicis</i> is represented by the type strain DSM 20138 =ATCC 14264 =NCPPB 1228 and is not a homotypic synonym of <i>Corynebacterium ilicis</i> Mandel et al. 1961, and is reported not to be a plant pathogen. The authorship is to be cited as <i>Arthrobacter ilicis</i> Collins et al. 1982 and typification and the description of this species are to be found in Collins et al. (1981) [Collins MD, Jones D, Kroppenstedt RM. <i>Zentralbl Bakteriol Parasitenkd Infektionskr Hyg Abt I Orig C</i> 1981;2:318–323].
88	The status of the name <i>Lactobacillus rogosae</i>	<i>Int J Syst Evol Microbiol</i> 2014;64:3578–3579; doi:10.1099/ij.s.0.069146-0	The Judicial Commission affirms that the combination <i>Lactobacillus rogosae</i> Holdeman and Moore 1974 represented by the type strain ATCC 27753 listed on the Approved Lists of Bacterial Names does not appear to be

	Holdeman and Moore 1974		currently represented by an extant type strain. Further work is needed to determine whether a derivative of the original type can be found or whether a neotype can be designated.
89	The epithet <i>aurantiaca</i> in <i>Micromonospora aurantiaca</i> Sveshnikova <i>et al.</i> 1969 (Approved Lists 1980) is illegitimate and requires a replacement epithet	<i>Int J Syst Evol Microbiol</i> 2014;64:3580–3581; doi:10.1099/ijms.0.069153-0	The Judicial Commission affirms that the combination <i>Micromonospora aurantiaca</i> Sveshnikova <i>et al.</i> 1969 (Approved Lists 1980) may not serve as the correct name of the taxon because Rule 12b states that no specific or subspecific epithets within the same genus may be the same if based on different types and the specific epithet <i>aurantiaca</i> in <i>Micromonospora aurantiaca</i> Sveshnikova <i>et al.</i> 1969 (Approved Lists 1980) is the same as the subspecific epithet <i>aurantiaca</i> in <i>Micromonospora carbonacea</i> subsp. <i>aurantiaca</i> Luedemann and Brodsky 1964 (Approved Lists 1980) and the latter has priority. According to Rule 53, the duplication of the same specific or subspecific epithet based on different types creates an illegitimate epithet with the principle of priority determining which is to be replaced as specified in Rule 54. The replacement of the specific epithet <i>aurantiaca</i> in <i>Micromonospora aurantiaca</i> Sveshnikova <i>et al.</i> 1969 (Approved Lists 1980) also requires that the authorship of the original authors is retained. However, action of this nature requires that the original epithet is maintained in the original combination. There currently appears to be no mechanisms where such action can be taken.
90	The combination <i>Enterobacter agglomerans</i> is to be cited as <i>Enterobacter agglomerans</i> (Beijerinck 1888) Ewing and Fife 1972 and the combination <i>Pantoea agglomerans</i> is to be cited as <i>Pantoea agglomerans</i> (Beijerinck 1888) Gavini <i>et al.</i> 1989	<i>Int J Syst Evol Microbiol</i> 2014;64:3582–3583; doi:10.1099/ijms.0.069161-0	The Judicial Commission affirms that, according to information presented to it, the combination <i>Enterobacter agglomerans</i> is to be cited as <i>Enterobacter agglomerans</i> (Beijerinck 1888) Ewing and Fife 1972 and the combination <i>Pantoea agglomerans</i> is to be cited as <i>Pantoea agglomerans</i> (Beijerinck 1888) Gavini <i>et al.</i> 1989.

91	ATCC 43642 replaces ATCC 23581 as the type strain of <i>Leptospira interrogans</i> (Stimson 1907) Wenyon 1926	<i>Int J Syst Evol Microbiol</i> 2014;64:3584–3585; doi:10.1099/ ijs.0.069179-0	The Judicial Commission affirms that, according to information presented to it, the type strain of <i>Leptospira interrogans</i> (Stimson 1907) Wenyon 1926 designated on the Approved Lists of Bacterial Names (ATCC 23581) has been shown not to represent an authentic culture of strain RGA (a member of the serovar Icterohaemorrhagiae) and ATCC 43642, derived from an authentic strain of strain RGA, a member of the serovar Icterohaemorrhagiae, is designated the type strain of <i>Leptospira interrogans</i> (Stimson 1907) Wenyon 1926.
92	The Request for an Opinion that the current use of the genus name <i>Mycoplasma</i> be maintained and <i>Mycoplasma coccoides</i> be considered a legitimate name is denied	<i>Int J Syst Evol Microbiol</i> 2014;64:3586–3587; doi:10.1099/ ijs.0.069187-0	The Judicial Commission affirms that the request that the current use of the genus name <i>Mycoplasma</i> be maintained and <i>Mycoplasma coccoides</i> be considered a legitimate name is denied.
93	The designated type strain of <i>Pseudomonas halophila</i> Fendrich 1989 is DSM 3051, the designated type strain of <i>Halovibrio variabilis</i> Fendrich 1989 is DSM 3050, a new name <i>Halomonas utahensis</i> (Fendrich 1989) Sorokin and Tindall 2006 is created for DSM 3051 when treated as a member of the genus <i>Halomonas</i> , the	<i>Int J Syst Evol Microbiol</i> 2014;64:3588–3589; doi:10.1099/ ijs.0.069195-0	The Judicial Commission affirms that, according to information presented to it, the designated type strain of <i>Pseudomonas halophila</i> Fendrich 1989 is DSM 3051 (replacing DSM 3050) and the designated type strain of <i>Halovibrio variabilis</i> Fendrich 1989 is DSM 3050 (replacing DSM 3051). A new name, “ <i>Halomonas utahensis</i> ” (Fendrich 1989) Sorokin and Tindall 2006 nom. nov., is created for the species represented by DSM 3051 when treated as a member of the genus <i>Halomonas</i> , because the combination <i>Halomonas halophila</i> (Quesada et al. 1984) Dobson and Franzmann 1996 has priority based on the fact that the epithet <i>halophila</i> in the combination <i>Halomonas halophila</i> (Quesada et al. 1984) Dobson and Franzmann 1996 (basonym <i>Deleya halophila</i> Quesada et al. 1984) has priority over the epithet <i>halophila</i> should the taxon <i>Pseudomonas halophila</i> Fendrich 1989 be treated as a member of the genus <i>Halomonas</i> . The combination <i>Halomonas variabilis</i> (Fendrich 1989) Dobson and Franzmann 1996 is rejected. The combination <i>Halovibrio denitrificans</i> Sorokin et al. 2006 is

	<p>combination <i>Halomonas variabilis</i> (Fendrich 1989) Dobson and Franzmann 1996 is rejected, the combination <i>Halovibrio denitrificans</i> Sorokin et al. 2006 is validly published with an emendation of the description of the genus <i>Halovibrio</i> Fendrich 1989 emend. Sorokin et al. 2006</p>		<p>validly published with an emendation of the description of the genus <i>Halovibrio</i> Fendrich 1989 emend. Sorokin et al. 2006.</p>
94	<p><i>Agrobacterium radiobacter</i> (Beijerinck and van Delden 1902) Conn 1942 has priority over <i>Agrobacterium tumefaciens</i> (Smith & Townsend 1907) Conn 1942 when the two are treated as members of the same species based on the principle of priority and Rule 23a Note 1 as applied to the corresponding specific epithets</p>	<p><i>Int J Syst Evol Microbiol</i> 2014;64:3590–3592; doi:10.1099/ijms.0.069203-0</p>	<p>The Judicial Commission affirms that, according to the Rules of the International Code of Nomenclature of Bacteria (including changes made to the wording), the combination <i>Agrobacterium radiobacter</i> (Beijerinck and van Delden 1902) Conn 1942 has priority over the combination <i>Agrobacterium tumefaciens</i> (Smith and Townsend 1907) Conn 1942 when the two are treated as members of the same species based on the principle of priority as applied to the corresponding specific epithets. The type species of the genus is <i>Agrobacterium tumefaciens</i> (Smith and Townsend 1907) Conn 1942, even if treated as a later heterotypic synonym of <i>Agrobacterium radiobacter</i> (Beijerinck and van Delden 1902) Conn 1942. <i>Agrobacterium tumefaciens</i> (Smith and Townsend 1907) Conn 1942 is typified by the strain defined on the Approved Lists of Bacterial Names and by strains known to be derived from the nomenclatural type.</p>
95	<p>The combinations <i>Lysobacter enzymogenes</i> subsp. <i>enzymogenes</i></p>	<p><i>Int J Syst Evol Microbiol</i> 2014;64:3920-3921; doi:10.1099/ijms.0.069211-0</p>	<p>The Judicial Commission affirms that, according to information presented to it, the combination <i>Lysobacter enzymogenes</i> subsp. <i>enzymogenes</i> Christensen and Cook 1978, the combination <i>Lysobacter enzymogenes</i></p>

	<p>Christensen and Cook 1978, <i>L. enzymogenes</i> subsp. <i>cookii</i> Christensen 1978 and <i>Streptococcus casseliflavus</i> (Mundt and Graham 1968) Vaughan <i>et al.</i> 1979 were in accordance with the International Code of Nomenclature of Bacteria at the time of publication in the <i>International Journal of Systematic Bacteriology</i>, but are not to be considered to be included on the Approved Lists of Bacterial Names</p>		<p>subsp. <i>cookii</i> Christensen 1978 and the combination <i>Streptococcus casseliflavus</i> (Mundt and Graham 1968) Vaughan <i>et al.</i> 1979 were in accordance with the wording of the 1975 and 1990 revisions of the International Code of Nomenclature of Bacteria but they are not to be considered to be included on the Approved Lists of Bacterial Names.</p>
96	<p>The properties given at the time of publication for the designated type strain of <i>Leifsonia rubra</i> Reddy <i>et al.</i> 2003, CMS 76r does not correspond with those of MTCC 4210, DSM 15304, CIP 107783 and JCM 12471 that are deposited as representing the type strain</p>	<p><i>Int J Syst Evol Microbiol</i> 2014;64:3593–3594; doi:10.1099/ij.s.0.069229-0</p>	<p>The Judicial Commission affirms that, according to information presented to it, the type strain of <i>Leifsonia rubra</i> Reddy <i>et al.</i> 2003 designated in the original publication as strain CMS 76r and deposited as MTCC 4210, DSM 15304, CIP 107783 and JCM 12471 does not have properties corresponding with those of the strains held in those collections under those accession numbers. The species <i>Leifsonia rubra</i> Reddy <i>et al.</i> 2003 was not represented by an authentic deposit of a type strain at the time of effective publication in the pages of the <i>International Journal of Systematic and Evolutionary Microbiology</i>.</p>

97	Recommendation for the conservation of the name <i>Streptomyces scabies</i>	<i>Int J Syst Evol Microbiol</i> 2020;70:1439–1440; doi:10.1099/ijsem.0.003921	The Judicial Commission denied the request for the conservation of the name <i>Streptomyces scabies</i> , ruling that the continued use of the correction <i>Streptomyces scabiei</i> is allowed.
98	<i>Bacillus aeolius</i> DSM 15084 ^T (=CIP 107628 ^T) is a strain of <i>Bacillus licheniformis</i>	<i>Int J Syst Evol Microbiol</i> 2020;70:1439–1440; doi:10.1099/ijsem.0.003921	The Judicial Commission denied the request to place the name <i>Bacillus aeolius</i> on the list of rejected names. In the absence of authentic type material, the name <i>Bacillus aeolius</i> is not validly published, based on the wording of Rules 18a, 27(3) and 30(3b).
99	The status of the species <i>Pectinatus portalensis</i> Gonzalez <i>et al.</i> 2005	<i>Int J Syst Evol Microbiol</i> 2020;70:1439–1440; doi:10.1099/ijsem.0.003921	The Judicial Commission denied the request to place the name <i>Pectinatus portalensis</i> on the list of rejected names. In the absence of authentic type material, the name <i>Pectinatus portalensis</i> is not validly published, based on the wording of Rules 18a, 27(3) and 30(3b).
100	Proposal of strain A1-86 (=DSM 17629=NCIMB 14373) as the neotype strain of <i>Eubacterium rectale</i> (Hauduroy <i>et al.</i> 1937) Prévot 1938 (Approved Lists 1980)	<i>Int J Syst Evol Microbiol</i> 2020;70:5177–5181; doi:10.1099/ijsem.0.004390	Based on the wording of Rule 18c, the Judicial Commission denied the request for the recognition of strain A1-86 as the neotype strain of <i>Eubacterium rectale</i> , ruling that strain VPI 0990 (=ATCC 33656=CIP 105953=DSM 3377=JCM 17463=KCTC 5835=LMG 30912) is considered to be a duplicate isolate of the same strain as VPI 0989 (=ATCC 25578) and may serve as the nomenclatural type.
101	The type strain of <i>Melittangium lichenicola</i> (Thaxter 1892) McCurdy 1971 is ATCC 25946=DSM 14877, originally designated as a reference strain, and not ATCC 25944 (=DSM 2275) as given in the Approved Lists of Bacterial Names	<i>Int J Syst Evol Microbiol</i> 2020;70:5177–5181; doi:10.1099/ijsem.0.004390	The Judicial Commission approved the request, ruling: (i) that the strain deposited as ATCC 25944 (=M155=DSM 2275) does not conform with the published morphological description of <i>M. lichenicola</i> , and that this strain should not serve as the type strain because it is not an authentic representative of the designated type strain; (ii) that the reference strain Windsor M201 (=ATCC 25946=DSM 14877=NBRC 100091) should serve as the type strain of <i>M. lichenicola</i> ; and (iii) that the Approved Lists of Bacterial Names must be corrected accordingly.

102	<p>Strain Cc m8 (=DSM 14697=CIP 109128=JCM 12621) is proposed as a neotype strain for the species <i>Myxococcus macrosporus</i>, replacing the designated type strain Windsor M271, and strain Mx s8 (=DSM 14675=JCM 12634) is proposed as a neotype strain for the species <i>Myxococcus stipitatus</i>, replacing the designated type strain Windsor M78</p>	<p><i>Int J Syst Evol Microbiol</i> 2020;70:5177–5181; doi: 10.1099/ijsem.0.004390</p>	<p>Windsor M271 and Windsor M78 are not herbarium material and hence cannot be considered preserved specimens under Rule 18a(1); <i>Corallococcus macrosporus</i> (ex Krzemieniewska and Krzemieniewski 1926) Reichenbach 2007 and <i>Myxococcus macrosporus</i> (Krzemieniewska and Krzemieniewski 1926) Zahler and McCurdy 1974 (Approved Lists 1980) should share the same nomenclatural type; strain Cc m8 (=DSM 14697=CIP 109128=JCM 12621) is an established neotype strain for the species <i>Myxococcus macrosporus</i>, replacing the designated type strain Windsor M271; strain Mx s8 (=DSM 14675=JCM 12634) is an established neotype strain for the species <i>Myxococcus stipitatus</i>, replacing the designated type strain Windsor M78.</p>
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