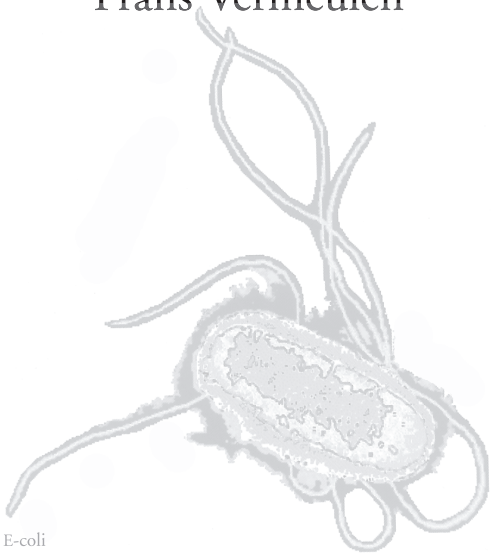
Monera

Kingdom Bacteria & Viruses

Spectrum Materia Medica
Volume 1

Frans Vermeulen



E-coli

It is like that one bit of evidence.
It's there, it might be the key to the whole case.
You just have to think a little differently to find it.
Jeffery Deaver, The Vanished Man

Emryss Publishers

Dedication

This book is dedicated to
Julian Winston
in honour of his
research, and the work and joy
he has given to the homeopathic world.
Haarlem, 1st August 2005

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Contents

NAMING OF PARTS

Orderly systems

Aristotle made in the 4th century BC one of the first attempts to classify living things according to a scientific and orderly system. He made a division into two groups: plants and animals. Depending on their way of locomotion, the animals were placed in three subgroups: flyers, swimmers, and walkers. Fish, sea snake and dolphin consequently fell in the category of swimmers, whilst butterfly, bee, bat and bird were included in the group that flew.

For almost 2000 years Aristotle's division satisfied biologists, until by the 17th century systems were introduced that classified living organisms according to similarities in form and structure, including internal anatomy and external appearance.

Although organisms were now placed in more meaningful groups, the division as either plants or animals was maintained. The 18th-century Swedish scientist Carl von Linné devoted his life to improving the two-tier system taxonomically. He introduced the binominal or Linnaean nomenclature, in which all known living organisms are given a formal scientific *double* name in Latin. First comes the generic and then the specific name.

Flowering plant families vary widely in their contents, as do fungal and other families. Some contain only a single genus and species [monotypic], whereas others contain hundreds of genera and thousands of species [polytypic].

Only recently, around the middle of the 20th century, more consequent divisions of living organisms were proposed and accepted, so that now five kingdoms exist, although some taxonomists have come up with no less than 22 kingdoms.

Homeopathy appears to carry on in the Aristotelean tradition. By and large two groups of living organisms are recognized - plants and animals. Fungi are looked upon as plants without chlorophyl while the Monera kingdom is placed somewhere on the sideline; a few are semi-synthetic antibiotic drugs, the others are disease products called 'nosodes'.

Also regarding drug names and abbreviations homeopathy lives in pre-Linnaean times. It may be argued that homeopathy has its own systematics, namely a classification according to similarities between drug pictures. True, but for this to work, drug pictures must be absolutely reliable and more or less complete. Such an argument moreover tends to ignore or trivialize the connection between the nature [disposition] of [living] organisms and the signs and symptoms associated with them.

Cross-connections between drugs of different origins, eg a plant and an ani-

mal, are a good thing, yet become even better when they are supported by more than symptoms only. Substances, animate or inanimate, are the alpha and omega of the homeopathic materia medica and their interconnections therefore define the relationships between symptom pictures. In my opinion, there is no better way to arrange the materia medica than including the nature of the substances/organisms that serve as its sources.

Classification in homeopathy

Homeopathy has adopted some sort of classification system in order to recognize the similarities between the different remedies and to categorize their common characteristics into larger units. With his *Clinical Materia Medica,* Ernest A. Farrington [1847-1885] was the first to arrange drug pictures according to taxonomic groups. Farrington's basic units are what he calls "orders," which actually are families. Currently many homeopaths favour the use of groupings on the level of so-called *families.* Classifications such as "snake family", "spider family", "crustaceans family", etc., are formally inaccurate since these groupings concern a suborder [snakes], an order [spiders] and a class [crustaceans], respectively.

We have to deal with considerable problems, not in the last place because we rely on a materia medica, parts of which are clearly past their expiry dates. Another problem is the frequently obsolete nomenclature and taxonomy. How can we connect with other fields of science when we don't even speak the same language? And what if we want to extend our search for information and use an invalid name?

The kingdoms

Attempts have been made in homeopathy to simplify matters by using three kingdoms: animals, plants, minerals. This system needs revision for the simple reason that today the generally accepted classification system comprises five kingdoms, or six if we regard minerals as living organisms: Monera, Protista, Fungi, Plantae, Animalia, and Mineralia.

Bacteria are placed in the Monera kingdom: unicellular organisms whose hereditary material is not enclosed in a nucleus. The kingdom Protista contains a large group of unicellular nucleated organisms. These organisms are on the borderline between plants and animals, and include unicellular algae, downy moulds, dinoflagellates, amoebae, trichomonads and sporozoans [eg, Plasmodium, which causes malaria]. While some are capable of animal-like movement [protozoans], others have distinctly plant-like characteristics [protophyta or chromista].

Fungi in homeopathy are placed in the kingdom Plantae, a division that not only is outdated but also prevents our perceiving them in their own right, with their specific characteristics, which are fundamentally different from those of other kingdoms.
Systems are artificial and for none of the kingdoms a consistent system of classification exists. Although currently the five kingdom classification stands, revisions are underway to better reflect diversity and evolutionary relationships. The proposed revisions split the Monera into two kingdoms [Archaebacteria and Eubacteria] and the Protista into three distinct kingdoms.

The necessity of classification and categorisation
Species can be defined as a group of individuals having common characteristics, while a genus consists of a collection of similar and/or closely related species. The basic units of classification, the species, are grouped into higher or more-inclusive units: above the genus comes the family, then the order, then the class and finally the phylum [also called division].
There are many subdivisions: species are subdivided in subspecies or varieties; families in subfamilies, subfamilies in tribes, tribes in subtribes; classes in subclasses; and phylla in subphylla [or subdivisions]. Cultivated [plant] varieties are known as cultivars. The category "superorder" is placed between the taxonomic categories order and subclass or class.
The higher the rank, the larger the number of species contained and consequently the more general and less specific the distinctive features. This can be employed in a similar fashion in case analysis. Starting at the top we first try to decide for the larger unit - snake, spider, fungus, mineral, metal, etc. - and then work our way downward, fine-tuning our choice. Or we begin at the level of the species - a certain remedy - and refine our selection by differentiating *within* the larger unit of which the species is part.

Homeopathic remedy abbreviations
The current abbreviation system in homeopathy doesn't follow clear rules. Its ambiguity lies in the fact that remedy names, and thus their abbreviations, sometimes refer to a genus, eg Hyoscyamus or Conium, and at other times to a species, eg Dulcamara or Abrotanum. A more consistent approach would be to use the Latin binominals of *organisms* instead of drug names. This always gives first the generic and then the specific name, thereby revealing relationships between remedies on the generic level. If the abbreviation for, say, Stramonium would be in line with the binominal system, it would show right away its alliance with other Datura species. It would be good

practice to extend abbreviations now solely indicating the genus, eg Lycopodium or Arnica, with the specific name, thus: Lyc-c. [Lycopodium clavatum] and Arn-m. [Arnica montana], in order to allow future inclusion of other members of such genera. Single names referring to a species, such as Absin. or Bell., can be placed as an extension behind the generic name, preserving the traditional abbreviation: Art-absin.[Artemisia absinthium] and Atro-bell. [Atropa belladonna]. In certain instances the link between a plant and its main alkaloid can then be observed as well: Atropa belladonna and Atropinum. The additional plus-point of such a system, namely the possibilty of recognizing themes and patterns of naturally related remedies within repertory rubrics, may serve as a compensation for the trouble of getting accustomed to new names and abbreviations.

Why more remedies?

According to some there is no need for more homeopathic remedies. The polychrests are supposedly good for a 70-80 percentage of cured cases, with a handful of small remedies to fill the gaps. As much self-confirming as self-assuring, this philosophy is in contradiction with the major asset of homeopathy: individualisation. Individualisation works both ways: it is required in each case and it is the cornerstone for self-development of the homeopath. To keep on enlarging established drug pictures works as a self-fulfilling prophesy: the more symptoms are added to a remedy the more often it will be encountered in the repertories, resulting in its being prescribed more frequently, leading to more repertory additions, and so on.

Aside from the concept of polychrests as conflicting with the essence of homeopathy, polychrests derive much of their apparent identity from containing symptoms and indications common to the *larger unit* of which they are a member. For example, a large portion of the Lachesis symptoms are *snake symptoms* rather than individual symptoms typical for the particular species Lachesis muta. The species with the longest use as a homeopathic remedy, or when it is the sole representative of a group, therefore automatically will have most symptoms, due to additions from clinical cases, resulting in its being elevated to polychrest status. Only a proportionally small part of a given number of symptoms will be, by definition, species-related, while the rest is common to the genus, family or an even larger unit.

More remedies, provided their introduction follows some logic, will allow homeopathy to further develop its main contribution to health care: treatment of individuals.

Without going outside, you may know the whole world...

Bacterial benefits

Monera are bacteria. They play a minor role in homeopathy. They have no place as a group and their symptom pictures are often obscure. The current trend of facilitating the selection of remedies on the basis of their place in the natural kingdoms, not only ignores the fungi as a distinct unit, but also the micro-organisms. There are some 80 bacteria listed in the remedy abbreviation list. Some of them are symptomless, whereas a few others have thousands of symptoms.

Bacterial remedies fall into three categories:

allopathic drugs synthesized from bacterial metabolites;
normal commensals of the microbial flora;
species associated with bacterial diseases.

The latter category contains the major nosodes: Medorrhinum, Syphilinum, and Tuberculinum. Psorinum can be included or excluded, depending on one's view. [*See* Penicillium, Spectrum Vol. 2].

A step forward in realising the importance of micro-organisms might be the recent introduction of new "miasms" in addition to the traditional quartet. However, these new miasms mainly serve as categorisation models and hardly pay attention to the micro-organisms associated with them.

The better we learn to know a person, the better we understand him or her. So it is with any other living organism. Learning to know a bacterium, or a virus for that matter, seems less appealing than getting acquainted with animals, plants, or stones. We may feel attracted to flowers, trees, animals, gemstones, metals, but we quickly develop a disliking, or even fear or repulsion for micro-organisms. Bugs bug us; we have bad names for them: germs, creeps, parasites, pathogens, in short: disposable creatures. Flowers have powers, animals have spirits, stones are healers, but bacteria and viruses are "killers." Animals we domesticate, plants we cultivate, bacteria we exterminate. What we cannot see with the naked eye, we tend to discount. With a generous dash of humour, Robert Buckman, a Canadian professor of medicine, succeeds in putting words to what there is to see:

"If the numbers of species on Planet Earth are staggering, the numbers on or in Planet Human are hardly less so. For example, the body space of an average adult human being comprises approximately 100 trillion cells - that is one hundred million separate units of living matter. This is a fairly impressive number. Even more impressive, however, is the fact that of those 100 trillion cells inside the average human frame, only 10 trillion are human

cells. The other 90 trillion cells are bacteria [with a few other parasites, fungi, and miscellaneous riff-raff thrown in for good measure]. Inside our own bodies we are outnumbered by other species nine to one. Fortunately, the human body is not a democracy, so even though our bodily bacteria do influence our workings in many ways, they don't have a vote. They therefore cannot decide - on their own - to throw us out entirely [although on occasions they can cause a variety of expulsions and upsets and ultimately, if one cares to think of it that way, they can cause revolution, dissolution, and redistribution]. Yet, even accepting that some species have the potential for doing us considerable harm, we can perhaps afford to be a little fairer to many of the other less threatening species with whom we share our body [and, in some cases, our planet].

Not everything that is non-human is necessarily bad for us. The mood of recent times has been to regard every non-human species in or on our bodies as untrustworthy and threatening. This is undoubtedly true of some species: there is no such thing as a friendly smallpox virus, and you cannot domesticate a malarial parasite and have it come when you call it."

Hubris versus humus

Bacteria are of major importance to Mother Earth. "An uncharted world of bacteria and other micro-organisms exists in and on the bodies of larger organisms," Edward Wilson has written. Some of the species are neutral guests, neither harming nor helping their hosts; others assist their hosts in digestion, excretion, and even the production of light. Although the vast majority of bacterial types remain unknown, bacteria are perceived as relatively well known because they are so important in medicine and ecology. When in the 1920s the idea was proposed that cell components, eg, mitochondria, originated as symbiotic bacteria, it was roundly rejected and ridiculed. Bacteria were agents of disease, dangerous pests, troublemakers, lying in wait to inflict harm on us. Spirochetes were transmitters of venereal disease, not the originators of motility and as such of the sperm tails of men. Bacteria had no place in the context of life's evolution.

In his Foreword to *Microcosmos*, an intriguing tale of microbial evolution by Lynn Margulis and Dorion Sagan, Lewis Thomas brings the entire affair into the open. He writes: "The biosphere is all of a piece, an immense, integrated living system, an organism. … We used to believe that we arrived *de novo*, set in place by the Management, maybe not yet dressed but ready anyway to name all the animals. … Most of us would prefer, given the choice, to track our species back to pure lines of kings and queens, stopping there and look-

ing no further. But now look at our dilemma. The first of us, the very first of our line, appeared sometime around 3.5 billion years ago, a single bacterial cell, the Ur-ancestor of all the life to come. We go back to *it*, of all things. Moreover, for all our elegance and eloquence as a species, for all our massive frontal lobes, for all our music, we have not progressed all that far from our microbial forebears. They are still with us, part of us. Or, put it another way, we are part of them. … [Over a] 2.5 billion year stretch of time... our microbial ancestors, all by themselves, laid out most of the rules and regulations for interliving, habits we humans should be studying now for clues to our own survival. … Perhaps we have had a shared hunch about our real origin longer than we think. It is there like a linguistic fossil, buried in the ancient root from which we take our species' name. The word for earth, at the beginning of the Indoeuropean language thousands of years ago was *dhghem*. From this word, meaning simply *earth* came our word *humus*, the handiwork of soil bacteria. Also, to teach us the lesson, *humble, human*, and *humane*. There is the outline of a philological parable here. …"

Nosodes and vaccines

Regarding nosodes and vaccines, invaluable work was done by the late French homeopathic physician O.A. Julian. Why French homeopathy in general appears to be favourably disposed towards the use of nosodes is an interesting question. To a lesser extent the same holds true for German homeopathy. Here is a little history.

The French, with Louis Pasteur as their champion, have done much to promote the germ theory of disease. [A role played in Germany by Koch, amongst others.] Convinced that micro-organisms are responsible for disease, Pasteur succeeded in persuading the medical community that only particular organisms can produce specific conditions and that once those organisms were known, prevention would be possible by developing vaccines. To understand how influential the French have been, we only have to look at the number of micro-organisms or vaccines named after French researchers working at one time at the Pasteur Institute in Paris, eg, Bordet, Yersin, Calmette, Borrel, and Pasteur himself. It should therefore not come as a surprise that French homeopaths, eg, Cartier, Vannier, Fortier-Bernoville, Sevaux, and particularly Julian, have introduced into homeopathy a fair amount of remedies derived from either micro-organisms or vaccines. Contrary to Pasteur's coming through in scientific circles with flying colours, the homeopathic community has barely taken notice of the French contributions.

Germs as the cause of trouble might not agree with Hahnemann's concept of an invisible spiritual [dynamic] force capable of affecting and being affected by similar forces, making microbes the result instead of the cause. It nevertheless doesn't take away practical considerations as to the employment of such remedies. Disregarding such established ones as Psorinum, Medorrhinum and Syphilinum, the use of any other nosode in homeopathy is more or less tantamount to being a last resort. If used at all, their use seems to be confined to desperate cases, blocked cases, relapsing cases; no or insufficient activity of apparently well-selected remedies, or malignancies. Might this not just be a reflection of the difficulties in giving "microbial" remedies a place? Accepting remedies from the microbial kingdom would seem to amount to accepting the germ theory as the cause of disease. Yet, irrespective of whether we believe microbes to be cause or result, homeopathy is based on similarity of phenomena.

Over time the established nosodes have grown into recognisable drug pictures for the simple reason that they have been used. Successful cases have been passed on and have helped to flesh out a better picture. Creativity and courage constitute homeopathy's essential requisites. To be able to prescribe we need something on which to base the prescription. Some of the presented microbial remedies are, admittedly, still in their infancy, perhaps never to mature, whilst others have enough individual elements to enable recognition, provided we study them closely. As with photographs, drug pictures also may be enlarged and refined. The sharpness or completeness of a picture depends as much on our focus as on the object.

The dose makes the poison

Paracelsus argued that the right dose differentiates a poison and a remedy, which is now known as the dose-response relationship, the Arndt-Schulz Law, a major concept of toxicology. To this Paracelsian axiom homeopathy has added its two main concepts: susceptibility and analogy. Assuming that the difference between a virulent poison and a great remedy also lies in the combination of dose, susceptibility and similarity, it would seem unfortunate that certain biological agents have such a minor place in homeopathy. For example, the deep impact of the Black Death, with Yersinia pestis as its biological agent, has "thrust this dread disease into the collective memory of western civilisation," as one author aptly put it. Terror-stricken societies sought to diffuse the threat by either trying to appease the God who perceivedly had brought the plague upon them or by attempting to create a common bond of union among human beings. It would be a mistake to dis-

regard plague because it occurred in medieval times and evoked what we now would consider superstitious reactions, if not mass hysteria. On the basis of analogy, plague represents as much as it causes. Being derived from 'plaga', Latin for 'strike' or 'blow,' plague stands for being stricken, terror-stricken, panic-stricken, stricken by a wrathful God, by war, by famine, by terrorists. It has played a role in many military campaigns: it befell armies of antiquity [Frederick the Great's as well as Napoleon's troops] and military traffic through Asia brought plague in its trail. The possible use of biological agents as vehicles for terrorism has recently induced considerable fear and alertness in western societies. Amongst such agents are plague, anthrax, brucellosis, smallpox and botulism. Aside from bringing up traumatic memories, and while not suggesting that terror is unique to plague, plague lives in the human collective subconsciousness as a miasmatic stain, which in remedy form, it might help to allay.

Many questions, different answers

Harry van der Zee wrote in the Editorial to Homoeopathic Links 4/01: "Let us suppose that our appreciation of what we and our patients experience in life is indeed, most of the time, determined by a limited perception. Suppose that all those influences that we label as bad are indeed part of a perfect harmony. What then should our attitude be towards them? In general as a method of healing, homeopathy already provides an answer to this question. We are not out there killing the microbes, but rather helping our patients to live in better harmony, both with themselves and also with their surroundings, including the world of micro-organisms. …

In daily homeopathic practice, there are nevertheless still a lot of issues concerning infectious disease that deserve thought, experiment and discussion. … How to deal with vaccinations, and with their effects? Do we have an alternative to them? What is the role of nosodes in homeopathic practice? What is there to know about lesser-known nosodes? Is there room for isopathy in classical homeopathy? How to understand and deal with the miasms? … Considering the rich diversity of our profession I'm sure many have come to different answers. Let's share them, put them together, and see whether there is music in the totality of all these individual notes."

Building blocks

Will there ever come a time that we speak of a Staphylococcus-type, a Pestinum-personality, Salmonella-cravings, or Dysentery-characteristics? Realising our attitude towards micro-organisms helps us to understand our

vision of them as potential remedies.
By a great deal of collecting, some connecting and a little bit of correcting I have attempted to bring together building blocks in order to start constructing a materia medica worthwhile focussing upon. I have followed H.C. Allen's advice that "to a proving of Anthracinum must be added all the symptoms of uncomplicated splenic fever; to those of Hydrophobinum [Lyssinum], the symptoms of every case of pure hydrophobia [rabies]; to those of Syphilinum all those of pure syphilis, etc., etc."
If, as Hering says, "the symptoms of the snake-bite and from the bee-sting have been proved to be useful in numerous cases," why not also the symptoms induced by Streptococcus, Clostridium, Brucella, Leptospira, etc.?
And if, as Wills has it, "cholera [is] an involuntary experiment on a very large scale," would then the numerous other "involuntary experiments" not at least furnish outlines of symptom pictures, in a similar fashion, albeit more crude, as provings do?
The first to manufacture and prove Medorrhinum and Syphilinum, Swan was of the same opinion as Wills: "Morbillinum, Scarlatinum, Variolinum" [and the rest] "are the fullest proved poisons in existence; they have been proven for hundreds of years by tens of thousands of persons, old and young, male and female. Here we have the provings ready made by nature for us on healthy persons. Collate the symptoms … and you have the pathogenetic effect of that poison, and when you have such in the sick, administer the potentized and you will cure the effects of that poison."
In the Preface to his book *Rats, Lice and History*, Zinsser makes the striking observation that, "In following infectious diseases about the world, one ends by regarding them as biological individuals which have lived through centuries, … having existences which, in their developments and wanderings, can be treated biographically."
Humans have their personal histories, so have biological individuals. Hopefully both educative and entertaining, the following is an attempt to unravel parts of such biographies.

Bacterial nomenclature
The naming of bacteria is controlled by the International Code of Nomenclature of Bacteria. Since 1 January 1980, priority of bacterial names is based upon the *Approved Lists of Bacterial Names* [Skerman et al., 1980]. The names of the bacteria in Spectrum are in accordance with the Approved List, with the exception of the species without author citations. The latter names, often old synonyms, are without valid publications and therefore have no official standing in bacterial nomenclature.

Acknowledgements

I have included clinical cases, old and new, from homeopathic literature, for which Reference Works and Encyclopaedia Homeopathica have beenindispensable and for which I am indebted to colleagues granting me permission to use their cases.
The reasons for including cases are manifold: they are illustrative, show vaious approaches in case analysis and remedy selection, demonstrate the value of locals and disease history, reveal that everyone struggles, prove that dedication and determination go a long way, clarify that polychrests are no panaceas, and above all, highlight the wonders of homeopathy.

Many thanks to everyone for helping collecting data, for proof-reading, correcting and translating, for being patient, for making difficult subjects lighter to digest and easy ones more complicated, for offering opinions, for explaining national or local customs, for reading the introduction, to Maud and Claire for being Maud and Claire.
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Frans Vermeulen, Molkom, Sweden, 24 April, 2005.

CLASSIFICATION KINGDOM: MONERA
[BACTERIA]

SUBKINGDOM EUBACTERIA

DIVISION GRACILICUTES
[Gram-negative bacteria]

PHYLUM PROTEOBACTERIA

Group Alpha Proteobacteria

ORDER Rhizobiales
FAMILY Brucellaceae
GENUS *Brucella*
SPECIES: *B. melitensis*

ORDER Rhodospirillales
FAMILY Acetobacteriaceae
GENUS *Acetobacter*
SPECIES: *A. xylinus* [Kombucha]

ORDER Rickettsiales
FAMILY Rickettsiaceae
GENUS *Rickettsia*
SPECIES: *R. prowazekii* [Typhus nosode]

Group Beta Proteobacteria

ORDER Burkholderiales
FAMILY Alcaligenaceae
GENUS *Alcaligenes*
SPECIES: *A. faecalis* [bowel nosode Faecalis]

GENUS *Bordetella*
SPECIES: *B. pertussis* [Pertussinum]

FAMILY Burkholderiaceae
GENUS *Burkholderia*
SPECIES: *B. mallei* [Hippozaeninum]

ORDER Neisseriales
FAMILY Neisseriaceae
GENUS *Neisseria*
SPECIES: *N. gonorrhoeae* [Medorrhinum]
N. meningitidis [Meningococcinum]
N. subflava [Flavus]
N. mucosa [bowel nosode Sycotic Co.]

Group Gamma Proteobacteria

ORDER Enterobacteriales
FAMILY Enterobacteriaceae
GENUS *Citrobacter*
SPECIES: *C. freundii* [bowel nosode Bacillus No. 7]

GENUS *Enterobacter*
SPECIES: *E. cloacae.* [bowel nosode Bacillus No. 7]

GENUS *Escherichia*
SPECIES: *E. coli* [Colibacillinum]
E. coli mutabile [bowel nosode Mutabile]

GENUS *Hafnia*
SPECIES: *H. alvei*. [bowel nosode Bacillus No. 7]

GENUS *Klebsiella*
SPECIES: *K. pneumoniae*

GENUS *Morganella*
SPECIES: *M. morganii* [bowel nosode Morgan pure]

GENUS *Proteus*
SPECIES: *P. mirabilis* [bowel nosode Proteus]
P. vulgaris [bowel nosode Proteus]

GENUS *Salmonella*
SPECIES: *S. paratyphi* [Paratyphoidinum]
S. typhi [Eberthinum; Typhoidinum]
S. enteritidis [bowel nosode Gaertner]

GENUS *Shigella*
SPECIES: *S. dysenteriae* [bowel nosode Dysenteriae Co.]

GENUS *Yersinia*
SPECIES: *Y. pestis* [Pestinum]

ORDER Pasteurellales
FAMILY Pasteurellaceae
GENUS *Haemophilus*
SPECIES: *H. influenzae* [Hib vaccine]

ORDER Pseudomonadales
FAMILY Pseudomonadaceae
GENUS *Pseudomonas*
SPECIES: *P. aeruginosa*

ORDER Vibrionales
FAMILY Vibrionaceae
GENUS *Vibrio*
SPECIES: *V. cholerae* [Cholera nosode]

Group Epsilon Proteobacteria

ORDER Campylobacterales
FAMILY Campylobacteraceae
GENUS *Campylobacter*
SPECIES: *C. jejuni*.

FAMILY Helicobacteraceae
GENUS *Helicobacter*
SPECIES: *H. pylori*.

PHYLUM SPIROCHAETAE

ORDER Spirochaetales
FAMILY Leptospiraceae
GENUS *Leptospira*
SPECIES: *L. interrogans* [Weil's disease]

FAMILY Spirochaetaceae
GENUS *Borrelia*
SPECIES: *B. burgdorferi* [Lyme nosode]

GENUS Treponema
SPECIES *T. pallidum* [Syphilinum]
T. pallidum pertenue [Framboesinum]

PHYLUM CYANOBACTERIA

ORDER Chroococcales
FAMILY Chroococcaceae
GENUS *Microcystis*
SPECIES: *M. aeruginosa*

ORDER Nostocales
FAMILY Nostocaceae
GENUS *Anabaena*
SPECIES: *A. flos-aqua* [Saxitoxinum]

ORDER Oscillatoriales
FAMILY Phormidiaceae
GENUS *Arthrospira*
SPECIES: *A. maxima* [Spirulina]

FAMILY Pseudanabaenaceae
GENUS *Spirulina*
SPECIES: *S. maxima* [Spirulina]

PHYLUM SAPROSPIRAE (no representives in homeopathy)

PHYLUM CHLOROFLEXA (no representives in homeopathy)

DIVISION TENERICUTES
[wall-less eubacteria]
PHYLUM MYCOPLASMA (no representives in homeopathy)

DIVISION FIRMICUTES
[Gram-positive and protein-walled bacteria]

PHYLUM ENDOSPORA

Class Bacilli
ORDER Bacillales
- FAMILY Bacillaceae
  - GENUS *Bacillus*
    - SPECIES: *B. anthracis* [Anthracinum]
      B. brevis [Tyrothricinum]
- FAMILY Listeriaceae
  - GENUS *Listeria*
    - SPECIES: *L. monocytogenes* [Listeriosis nosode]
- FAMILY Staphylococcaceae
  - GENUS *Staphylococcus*
    - SPECIES: *S. aureus* [Staphylococcinum]

ORDER Lactobacillales
- FAMILY Enterococcaceae
  - GENUS *Enterococcus*
    - SPECIES: *E. faecalis* [Enterococcinum]
      Enterococcus spp. [Strepto-enterococcinum]
- FAMILY Lactobacillaceae
  - GENUS *Lactobacillus*
    - SPECIES: *L. acidophilus* [Lactobacillus]
- FAMILY Streptococcaceae
  - GENUS *Streptococcus*
    - SPECIES: *S. pneumoniae* [Pneumococcinum]
      S. pyogenes [Scarlatinum. Streptococcinum]

Class Clostridia

ORDER Clostridiales
  FAMILY Clostridiaceae
    GENUS *Clostridium*
      SPECIES: *C. botulinum* [Botulinum]
               C. difficile
               C. perfringens
               C. tetani [Tetanotoxinum]

PHYLUM PIRELLULAE

ORDER Chlamydiales
  FAMILY Chlamydiaceae
    GENUS *Chlamydia*
      SPECIES: *C. trachomatis* [Chlamydinum]

PHYLUM ACTINOBACTERIA

ORDER Actinomycetales
  FAMILY Actinomycetaceae
    GENUS *Actinomyces*
      SPECIES: *A. albus* [Streptomyces albus]
               A. citreus [Streptomyces citreus]
               A. griseus [Streptomyces griseus]
               A. israelii
               A. luteus [Nocardia lutea]??
  FAMILY Corynebacteriaceae
    GENUS *Corynebacterium diphtheriae*
      SPECIES: *C. diphtheriae* [Diphtherinum]
  FAMILY Micromonosporaceae
    GENUS *Micromonospora*
      SPECIES: *M. purpurea* [Gentamicinum]

  FAMILY Mycobacteriaceae
    GENUS *Mycobacterium*
      SPECIES: *M. avium* [Aviaire]??
               M. avium subsp. paratuberculosis [Johneinum]
               M. bovis [Tuberculinum bovinum Kent]

M. leprae [Leprominium]
M. tuberculosis [Tuberculinum]

FAMILY Nocardiaceae
GENUS *Nocardia*
SPECIES: *N. asteroides*
?? nocardia lutea??
FAMILY Streptomycetaceae
GENUS *Streptomyces*
SPECIES: *S. albus* [Salinomycin]
S. ambofaciens [Spiramycin]
S. aureofaciens [Chlortetracycline; Aureomycin]
S. caespitosus [Mitomycin]
S. erythreus [Erythromycin]
S. *fradiae* [Neomycin]
S. garyphalus [Cycloserine]
S. griseus [Streptomycin]
S. nodosus [Amphotericin B]
S. noursei [Nystatin]
S. peucetius var. caesius [Doxorubicin]
S. rimosus [Oxytetracycline]
S. venezuelae [Chloramphenicol]

Books like this - materia medicae - depend on the availability of pertinent material. Homeopaths who are willing to share the results and details of their cured cases are generously adding to our database all the time. I was disappointed not to receive more "bacteria" cases, having asked about four hundred homeopaths to share their work. I am sure this does not mean that nobody uses nosodes! I should like to encourage homeopaths to write up, publish, teach, share their cases.

A plea for bacterial behaviour!
Well-documented cases increase our understanding of remedies. I should like to encourage ALL homeopaths to take the time to share their work, [write, publish, teach, talk about, question] and thereby increase our general knowledge.
When we work communally, like the bacteria, our work becomes more than the sum of its parts. To be human is to battle between selfishness and altruism. Strive for the latter, and serve humanity with homeopathy!
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