Antiseptics, Germicides, Disinfectants, Deodorizers Their Preparation and Uses.

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To enumerate the long list of simples and compounds under the captions enumerated in the query would require much labor and time. But a few of the more important ones will claim attention. First I will endeavor to elucidate the difference between, and the meaning of, the four terms, as applied in their general acceptance:

First—ANTISEPTICS.—Substances which resist or correct putrefaction, or remedies which counteract putrescent tendency in the system.

Second—GERMICIDES.—Chemicals, substances or compounds which tend to, or entirely, annihilate embyrotic growth or nucleus of germ life, origin or first principle (excepting physical forces, such as fire, heat, water, drouth, etc.).

Third—DISINFECTANTS.—Substances or compounds which cleanse from infection or destroy parasitical formations; a congener of the term germicide.

Fourth—DEODORIZERS.—Substances which destroy noxious odors from various sources.

I will deal with these subjects under their respective titles, and in the order given.

Mr. S. A. Walton says: "If we trace back the list of antiseptics and disinfectants to an early date, we find that those mostly in use were sulphur, the halogen compounds, mercury, coal tar products and some essential oils." If we again follow up the development of antiseptics, we find that these materials form the bases of most of our new antiseptics, in a more defined and definite composition. Thus, in place of the old method of burning sulphur, sulphurous acid in many cases replaces it, and compounds of sulphur, as sulphonates, are used in combination, as in the case of ichthyol (ammonium-ichthyol sulphonate), soziodol (di-iodo-paraphenol sulphonic acid), and many others. The same may be said of the halogens—iodoform, iodo and di-iodo salicylic acids and iodol being iodine derivatives, while the other elements forming this group have corresponding compounds in a greater or less variety.

"The mercurial preparations and coal tar products as antiseptics are both numerous and varied, and many varieties of new combinations are continually being found that promise to be of use as antiseptics. Essential oils have been combined with other elements to form valuable antiseptics, aristol (dithymoliodide) being one of these, while oxidized pine oil with camphoric acid, forms one of the most popular disinfectants of the present day.

"Among new antiseptics from coal tar derivatives may be mentioned pyoktanin (methyl-violet), the most antiseptic of the aniline colors. A solution of 1 in 1000 is used in various eye diseases, phthsis, ulcers, etc.

"Lysol is a saponified phenol derived from cresols, and contains the higher homologues of carbolic acid. It is said to possess higher antimycotic power than carbolic acid, and to be less poisonous. This preparation is much used in Germany at the present time.

"Retinol, a distillation product of pine resin, is a viscid fluid hydrocarbon. It is a non-irritating and stable antiseptic.

"Europhen (iso-butyl-ortho cresyl-iodid) contains 23 per cent. of iodine, and is non-poisonous.

"Dermatol, a basic gallate of bismuth, forms a powerful antiseptic and dessicant.

"Sulphaminol (thiooxydiphenylamine) the antiseptic action of which is due to its decomposition, in contact with the fluids of the body, into sulphur and phenol.

"Monochlorphenol is prepared by the action of chlorine on cooled phenol. It is a powerful antiseptic, and less irritating than trichlorphenol.

"Camphoid, though only a mild antiseptic in itself, is a valuable adjunct to this class of bodies, as it forms a ready method of applying antiseptics to the surface of the skin, and owing to its composition (of spirit, camphor and pyroxylin) it forms a valuable solvent for substances such as salicylic acid, resorcin, hydronaphthol and many others."

Having had considerable experience with the hydrocarbon compounds of petroleum, and their multitudinous applications and various uses in the mechanical and medicinal fields, I take the opportunity of presenting a few of these very valuable agents to the pharmaceutical and medical profession.

First in the series of those applicable as antiseptics, disinfectants and germacides, I will name Benzin—a hydrocarbon of variable constitution, not to be confounded with benzole or benzene. The former (benzin or benzine) is a product distilled from petroleum, a mixture of hydro-carbons of the so-called "marsh gas series" (sp. gr. 0.670 to 0.675) a general solvent for oils and fixed fats, composition from C_5H_{12} to C_6H_{16}; while the latter (benzole or benz*ene*) is a fixed product of the distillation of coal tar, a hydrocarbon of the "aromatic series" (sp. gr. 0.850), used as a solvent for gutta-percha, sulphur, phosphorus, iodine, resinous balsams and alkaloids. The former (benzin) is the one claiming our attention as a destroyer of low forms of animal and vegetable life; also having been used recently as a safe remedy in trichinosis, internally administered in doses of from one half to one dram (in emulsion with acacia). It is especially valuable as a parasiticide and antimycotic, as it possesses a solvent power over oily secretions.

For household and general antiseptics, I could enumerate a great number that have been submitted from various sources during the past twenty years of research in this direction. I, however, give only a few of the more popular formulæ up to date. Before submitting these, however, I would like to quote a few distinguishing facts most tersely expressed by Mr. Thos. J. Keenan, recently. He says: "The confusion which results from the failure to distinguish with sufficient clearness between the words Antiseptic and Disinfectant has been quite recently emphasized by the publication of a work on Materia Medica, several chapters of which are devoted to a survey and classification of the principal drugs known to possess properties of an antiseptic or disinfectant nature, but including both under the one general heading, "Disinfectants." Now an antiseptic, strictly so-called, will not perform the function of a disinfectant, the range of action of the former being different, and limited to the prevention of infection or sepsis, while the latter, a disinfectant, acts by directly killing the infectious organisms and their spores. Yet in the work alluded to we find such drugs as salicin, naphthalin, benzoin and camphor, along with others of a similarly antiseptic character, classed as 'special disinfectants.'"

One of the popular preparations of the day is Listerine, introduced by Lambert, possessing, as it is claimed, antiseptic properties, "preventing the development of micro-organisms and restraining their multiplication." The scope and uses of this preparation are too well known by the profession for me to dwell at length upon them. My substitute for or in lieu of this valuable proprietary preparation appeared in the August number of *The Rocky Mountain Druggist* (1891), under the name of Spiritus Thymolini Compositus. This paper was read before the Denver Pharmaceutical Association in August, 1891. For the benefit of those who have not read it, I append the formula:

SPIRITS THYMOL COMPOUND.

Acid benzoic	
Borate of sodium, of each	1 oz. 32 grs.
Boric acid	2 oz. 64 grs.

Dissolve with the aid of heat in distilled water 48 ounces. Then add:

Thymol	160 grs.
Eucalyptol	
Oil of wintergreen, of each	40 drops.
Oil of peppermint.....	24 drops.
Oil of white thyme	8 drops.

Previously dissolved in alcohol (94 per cent.) Mix the two solutions, add caramel, drops 10. Distilled water q. s. to make one gallon. Let the mixture stand twenty-four hours, and finally pass through a wetted double filter.

Its uses extend to the field of the dental profession, destroying all odors emanating from diseased gums, and in many diseased conditions of the oral cavity. This preparation insures perfect antisepsis, being non-poisonous, non-irritant and non-escharotic.

The well known "Dobell's Solution" is among our best antiseptics, under the title "Liquor Sodii Boratis Compositus," or Compound Solution Borate of Sodium!