7. Harati Y, Niakan E. Hydrazine toxicity, pyridoxine therapy, and peripheral neuropathy. *Ann Intern Med* 1986; **104:** 728–9.
8. Nagappan R, Riddell T. Pyridoxine therapy in a patient with severe hydrazine sulfate toxicity. *Crit Care Med* 2000; **28:** 2116–18.

Anorexia and cachexia. References[1-3] to the use of hydrazine sulfate in patients with anorexia or cachexia associated with cancer.

1. Tayek JA, *et al*. Effect of hydrazine sulphate on whole-body protein breakdown measured by C-lysine metabolism in lung cancer patients. *Lancet* 1987; **ii:** 241–4.
2. Loprinzi CL, *et al*. Cancer-associated anorexia and cachexia: implications for drug therapy. *Drugs* 1992; **43:** 499–506.
3. Kaegi E. Unconventional therapies for cancer: hydrazine sulfate. *Can Med Assoc J* 1998; **158:** 1327–30.

Preparations

Proprietary Preparations (details are given in Part 3)
Rus.: Sehydrin (Сегидрин).

Hydrochloric Acid

Acide chlorhydrique; Acidum Hydrochloricum; Acidum hydrochloridum; Clorhídrico, ácido; E507; Kloorivetyhappo; Kwas solny; Kyselina chlorovodíková; Saltsyra; Salzsäure; Sósav; Suolahappo; Vandenilio chlorido rūgštis; Vetykloridihappo.

HCl = 36.46.
CAS — 7647-01-0.
ATC — A09AB03; B05XA13.
ATC Vet — QA09AB03; QB05XA13.

NOTE. The impure acid of commerce is known as Spirits of Salt and as Muriatic Acid.

Pharmacopoeias. *Chin.*, *Eur.* (see p.vii), *Int.*, *Jpn*, *Swiss*, and *Viet.* include various concentrations. Also in *USNF*.
Ph. Eur. 6.2 (Hydrochloric Acid, Concentrated; Acidum Hydrochloridum Concentratum; Hydrochloric Acid BP 2008). It contains 35.0 to 39.0% w/w of HCl. A clear, colourless, fuming liquid. Miscible with water. Store below 30° in stoppered containers of glass or other inert material.
Ph. Eur. 6.2 (Hydrochloric Acid, Dilute; Acidum Hydrochloridum Dilutum). It contains 9.5 to 10.5% w/w of HCl prepared by mixing hydrochloric acid 274 g with water 726 g.
USNF 26 (Hydrochloric Acid). It contains 36.5 to 38.0% w/w of HCl. A colourless, fuming liquid having a pungent odour. It ceases to fume when it is diluted with 2 volumes of water. Store in airtight containers.
USNF 26 (Diluted Hydrochloric Acid). It contains 9.5 to 10.5% w/v of HCl and may be prepared by mixing hydrochloric acid 226 mL with sufficient water to make 1000 mL. A colourless, odourless liquid. Store in airtight containers.

Adverse Effects

Hydrochloric acid is highly irritant and corrosive and ingestion has proved fatal. The corrosive effect causes chemical burns and severe pain. There may be violent vomiting, haematemesis, and circulatory collapse; acids can also produce intravascular coagulation and haemolysis. Ulceration may lead to perforation and patients can suffer strictures and pyloric stenosis. Asphyxiation may result from laryngeal oedema. Inhalation of acid fumes or aspiration of ingested acids may cause pneumonitis.

◊ References.

1. WHO. Chlorine and hydrogen chloride. *Environmental Health Criteria 21*. Geneva: WHO, 1982. Available at: http://www.inchem.org/documents/ehc/ehc/ehc21.htm (accessed 16/06/04)
2. Munoz Munoz E, *et al*. Massive necrosis of the gastrointestinal tract after ingestion of hydrochloric acid. *Eur J Surg* 2001; **167:** 195–8.

Treatment of Adverse Effects

Treatment of ingestion is mainly symptomatic. Gastric lavage and activated charcoal are not generally appropriate and emetics must *not* be used. Small amounts of water or milk may be given to dilute the acid but larger volumes may increase the risk of emesis and hence of further damage. Neutralising agents are not recommended because of the possibility of heat being produced during exothermic reactions, which may increase the injury further. Opioid analgesia may be required for pain. Endoscopy should be performed and surgical intervention may be necessary. There is little evidence to support the value of corticosteroids in preventing stricture formation.

Acid burns of the skin should be flooded immediately with water and the washing should be copious and prolonged. Any affected clothing should be removed while flooding is being carried out. For burns in the eye, the lids should be kept open and the eye flushed with a steady stream of water at room temperature or sodium chloride 0.9%. A few drops of a local anaesthetic solution will relieve lid spasm and facilitate irrigation.

Uses and Administration

Hydrochloric acid has been used as an escharotic. It has been used in the diluted form for the treatment of achlorhydria and other gastrointestinal disorders. It has also been given intravenously in the management of metabolic alkalosis (p.1667). An acid perfusion test using hydrochloric acid has been used in the diagnosis of oesophageal disorders. When taken orally, it should be sipped through a straw to protect the teeth.

Homoeopathy. Hydrochloric acid has been used in homoeopathic medicines under the following names: Acidum hydrochloricum; Muriaticum acidum; Hydrochloridum acidum; Chlorhydricum acidum; Acidum muriaticum; Ac. mur.

Diagnosis and testing. References and comments on the use of an acid perfusion test in the diagnosis of oesophageal disorders,[1-5] such as gastro-oesophageal reflux disease (p.1696) and oesophageal motility disorders (p.1702). The test involves intra-oesophageal perfusion of 0.1M hydrochloric acid; subsequent development of pain indicates an acid-sensitive oesophagus. This test has also been used in the differential diagnosis of angina.[2]

1. Sladen GE, *et al*. Oesophagoscopy, biopsy, and acid perfusion test in diagnosis of "reflux oesophagitis". *BMJ* 1975; **1:** 71–6.
2. Anonymous. Angina and oesophageal disease. *Lancet* 1986; **i:** 191–2.
3. Hewson EG, *et al.* Acid perfusion test: does it have a role in the assessment of non cardiac chest pain? *Gut* 1989; **30:** 305–10.
4. de Caestecker JS, Heading RC. Acid perfusion in the assessment of non-cardiac chest pain. *Gut* 1989; **30:** 1795–7.
5. Howard PJ, *et al.* Acid perfusion is a good screening test for symptomatic oesophageal reflux. *Gut* 1989; **30:** A1445.

Pregnancy. Heartburn during pregnancy may be due to reflux of alkaline duodenal contents. A dilute solution of hydrochloric acid (pH 2) taken after meals and at bedtime produced improvements in heartburn in pregnant women.[1]

1. Anonymous. Heartburn in pregnancy. *Drug Ther Bull* 1990; **28:** 11–12.

Preparations

Proprietary Preparations (details are given in Part 3)
Pol.: Mixtura Pepsini.
Multi-ingredient: ***Ital.:*** Gastro-Pepsin; ***S.Afr.:*** Sentinel Ulcer Mixture.

Hydrofluoric Acid

Fluohydric Acid; Fluorhídrico, ácido; Fluoric Acid; Kwas fluorowodorowy.

HF = 20.01.
CAS — 7664-39-3.

Description. Hydrofluoric acid is a solution of hydrogen fluoride in water. Various strengths are used. It attacks glass strongly.

Adverse Effects

As for Hydrochloric Acid, above. Although the corrosive effects of hydrofluoric acid tend to predominate, absorption may produce systemic fluoride poisoning as described under Sodium Fluoride, p.1962.

The pain from contact with weak solutions may be delayed, so that the patient is not aware of being burnt until some hours later, when the area begins to smart; intense pain then sets in and this may persist for several days. Destruction of tissue proceeds under the toughened coagulated skin, so that the ulcers extend deeply, heal slowly, and leave a scar.

The fumes of hydrofluoric acid are highly irritant.

Treatment of Adverse Effects

The initial treatment of poisoning after oral exposure to hydrofluoric acid is similar to that described for hydrochloric acid, see above. Calcium gluconate should also be given intravenously to correct known or suspected hypocalcaemia. Burns in the eye are also managed as for hydrochloric acid, although irrigation of the eye may be continued with calcium gluconate solution 2% after initial flood with water or sodium chloride 0.9%.

In the event of skin burns with hydrofluoric acid, contaminated clothing or articles should be removed and the skin washed with copious cold water. A calcium gluconate gel is sometimes used and it may be necessary to infiltrate the affected areas with calcium gluconate intradermally or subcutaneously. Regional intravenous infusion of calcium gluconate may be necessary in severe burns of the forearm, hand, or fingers; if ineffective, intra-arterial infusion for burns of the fingers may be considered. Hydrofluoric acid passes through finger- and toe-nails without causing any apparent damage; nails will therefore have to be removed or perforated to be able to treat the underlying tissues. Other first-aid measures reported to be effective include prolonged soaks in iced solutions of benzalkonium chloride; iced water has sometimes been used as has iced magnesium sulfate solution. Local anaesthesia may be needed. Burn eschars should be excised and necrotic tissue debrided. Absorption may lead to systemic fluoride toxicity and the need for intravenous calcium gluconate to manage hypocalcaemic symptoms.

◊ References to the treatment of hydrofluoric acid burns.

1. Browne TD. The treatment of hydrofluoric acid burns. *J Soc Occup Med* 1974; **24:** 80–9.
2. MacKinnon MA. Hydrofluoric acid burns. *Dermatol Clin* 1988; **6**: 67–74.
3. McIvor ME. Acute fluoride toxicity: pathophysiology and management. *Drug Safety* 1990; **5**; 79–85.
4. Kirkpatrick JJR, *et al.* Hydrofluoric acid burns: a review. *Burns* 1995; **21:** 483–93.
5. Sanz-Gallen P, *et al.* Hypocalcaemia and hypomagnesaemia due to hydrofluoric acid. *Occup Med (Lond)* 2001; **51:** 294–5.
6. Martin HCO, Muller MJ. Hydrofluoric acid burns from a household rust remover. *Med J Aust* 2002; **176:** 296.
7. Foster KN, *et al.* Hydrofluoric acid burn resulting from ignition of gas from a compressed air duster. *J Burn Care Rehabil* 2003; **24:** 234–8.

Uses

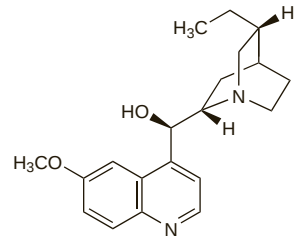
Hydrofluoric acid is used in industry. Its main use has been for the production of fluorocarbons for use as refrigerants and propellants. It has also been used as an ingredient of preparations for glass etching and rust removal.

Homoeopathy. Hydrofluoric acid has been used in homoeopathic medicines under the following names: Fluoricum acidum; Acidum hydrofluoricum; Ac. fluor.

Hydroquinine Hydrobromide

Dihydrochinin Hydrobromide; Dihydroquinine Hydrobromide; Hidroquinina, hidrobromuro de; Hydrochinin Hydrobromide; Methylhydrocupreine Hydrobromide. 8α,9*R*-10,11-Dihydro-6′-methoxycinchonan-9-ol hydrobromide.

$C_{20}H_{26}N_2O_2$,HBr = 407.3.
CAS — 522-66-7 (hydroquinine).
ATC — M09AA01.
ATC Vet — QM09AA01.



(hydroquinine)

NOTE. Do not confuse with Hydroquinone (p.1598).

Profile

Hydroquinine is a derivative of quinine (p.612) used similarly in the treatment of nocturnal muscle cramps. It is given as the hydrobromide in an oral dose of 200 mg with the evening meal and a further 100 mg at bedtime for 14 days.

Muscle spasm. Quinine and its derivatives such as hydroquinine have traditionally been used for the prevention of nocturnal cramps (p.1887) but there has been concern over their efficacy and potential for adverse effects, especially in the elderly.

References.

1. Jansen PHP, *et al.* Randomised controlled trial of hydroquinine in muscle cramps. *Lancet* 1997; **349:** 528–32.
2. van Kan HJM, *et al.* Hydroquinine pharmacokinetics after oral administration in adult patients with muscle cramps. *Eur J Clin Pharmacol* 2000; **56:** 263–7.

Preparations

Proprietary Preparations (details are given in Part 3)
Neth.: Inhibin.

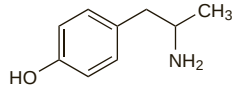
Hydroxyamfetamine Hydrobromide

(BANM, rINNM) ⊗

Bromhidrato de Hidroxianfetamina; Hidrobromuro de hidroxianfetamina; Hydroxyamfétamine, Bromhydrate d'; Hydroxyamfetamini Hydrobromidum; Hydroxyamphetamine Hydrobromide; *p*-Hydroxyamphetamine Hydrobromide; Oxamphetamine Hydrobromide. (±)-4-(2-Aminopropyl)phenol hydrobromide.

Гидроксиамфетамина Гидробромид

$C_9H_{13}NO$,HBr = 232.1.
CAS — 103-86-6 (hydroxyamfetamine); 1518-86-1 ((±)-hydroxyamfetamine); 306-21-8 (hydroxyamfetamine hydrobromide); 140-36-3 ((±)-hydroxyamfetamine hydrobromide).



(hydroxyamfetamine)

Pharmacopoeias. In *US*.
USP 31 (Hydroxyamphetamine Hydrobromide). A white, crystalline powder. Freely soluble in water and in alcohol; slightly soluble in chloroform; practically insoluble in ether. Its solutions in water are slightly acid to litmus, having a pH of about 5. Protect from light.

Profile

Hydroxyamfetamine hydrobromide is a sympathomimetic with an action similar to that of ephedrine (p.1559), but it has little or no stimulant effect on the CNS. It was formerly used as a vasopressor and in the management of some cardiac disorders.

In ophthalmology, hydroxyamfetamine hydrobromide has been used in a 1% solution as a mydriatic and in the diagnosis of Horner's syndrome.

Preparations

USP 31: Hydroxyamphetamine Hydrobromide Ophthalmic Solution.

Proprietary Preparations (details are given in Part 3)
Cz.: Pedrolon†; ***USA:*** Paredrine†.
Multi-ingredient: ***USA:*** Paremyd.

Hydroxyapatite *(BAN)*

542 (edible bone phosphate); Durapatite *(USAN)*; Hidroxiapatito; Hydroxylapatite; Win-40350. Decacalcium dihydroxide hexakis(orthophosphate).

$3Ca_3(PO_4)_2,Ca(OH)_2$ = 1004.6;
$Ca_5(OH)(PO_4)_3$ = 502.3.
CAS — 1306-06-5.

Profile

Hydroxyapatite is a natural mineral with composition similar to that of the mineral in bone. Hydroxyapatite for therapeutic purposes is prepared from bovine bone and contains, in addition to calcium and phosphate, trace elements, fluoride and other ions, proteins, and glycosaminoglycans. It is given orally to patients requiring both calcium and phosphorus supplementation. Hydroxyapatite with tricalcium phosphate has been used in bone grafts.

Hydroxyapatite derived from marine coral has been used in the construction of orbital implants for use after surgical removal of the eye. A synthetic calcium hydroxyapatite (CaHA) is used for the correction of facial lipoatrophy in patients with HIV infection and as a cosmetic filler for moderate to severe facial wrinkles and folds.

Adverse effects. Reference to problems associated with the use of coral-derived orbital implants[1] and synthetic calcium hydroxyapatite.[2]

1. Shields CL, *et al.* Problems with the hydroxyapatite orbital implant: experience with 250 consecutive cases. *Br J Ophthalmol* 1994; **78:** 702–6.
2. Sankar V, McGuff HS. Foreign body reaction to calcium hydroxylapatite after lip augmentation. *J Am Dent Assoc* 2007; **138:** 1093–96.

Uses. A mixture of calcium phosphates with calcium carbonate could be combined to form a paste which could be injected into acute fractures;[1] under physiological conditions the paste hardened within minutes, due to the formation of dahllite, a carbonated apatite, and held the bones in place as it was progressively replaced by living bone.

1. Constantz BR, *et al.* Skeletal repair by in situ formation of the mineral phase of bone. *Science* 1995; **267:** 1796–9.

Preparations

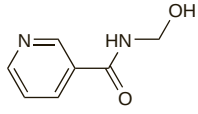
Proprietary Preparations (details are given in Part 3)
Austria: Ossopan; Osteogenon; ***Braz.:*** Ossopan; ***Cz.:*** Osteogenon; ***Fr.:*** Ossopan; ***Ger.:*** Calcibon; Endobon; Ossopan†; ***Hung.:*** Osteogenon; ***India:*** Ossopan; ***Indon.:*** Ossopan; Ossoral; ***Irl.:*** Ossopan; ***Ital.:*** Apagen; ***Mex.:*** Ossopan; ***Pol.:*** Ossopan; Osteogenon; ***Port.:*** Ossopan; ***Rus.:*** Osteogenon (Остеогенон); ***Singapore:*** Ossopan†; ***Spain:*** Ossopan; Osteopor; ***Switz.:*** Ossopan; ***Thai.:*** Ossopan; ***UK:*** Ossopan†; Osteo Support; ***USA:*** Radiesse.

Multi-ingredient: ***Arg.:*** Totalos Plus; ***Ger.:*** Collapat II; ***Malaysia:*** Supa Biocal Vitahealth†.

Hydroxymethylnicotinamide

Hidroximetilnicotinamida; *N*-Hydroxymethylnicotinamide; Nicotinylmethylamide; Nicotinylmethylamidum; Nikotynylometyloamid. *N*-Hydroxymethylpyridine-3-carboxamide.

$C_7H_8N_2O_2$ = 152.2.
CAS — 3569-99-1.
ATC — A05AB01.
ATC Vet — QA05AB01.



Pharmacopoeias. In *Pol.*

Profile

Hydroxymethylnicotinamide is a cholagogue and has been used in the treatment of various disorders of the gallbladder.

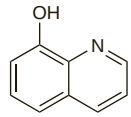
Preparations

Proprietary Preparations (details are given in Part 3)
India: Bilamide.

Hydroxyquinoline Sulfate

Chinosolum; Hidroxiquinolina, sulfato de; Hydroxyquinoline Sulphate; Oksikinoliinisulfaatti; Oxichinolini Sulfas; Oxikinolinsulfat; Oxine Sulphate; Oxyquinol; Oxyquinoline Sulfate *(USAN)*; Sulfate d'Orthoxyquinoléine. Quinolin-8-ol sulphate; 8-Quinolinol sulphate.

$(C_9H_7NO)_2,H_2SO_4$ = 388.4.
CAS — 148-24-3 (hydroxyquinoline); 134-31-6 (hydroxyquinoline sulfate).
ATC — A01AB07; D08AH03; G01AC30; R02AA14.
ATC Vet — QA01AB07; QD08AH03; QG01AC30; QR02AA14.



(hydroxyquinoline)

Pharmacopoeias. In *Fr.* and *Swiss*. Also in *USNF*.
USNF 26 (Oxyquinoline Sulfate). A yellow powder. Very soluble in water; slightly soluble in alcohol; practically insoluble in acetone and in ether; freely soluble in methyl alcohol.

Potassium Hydroxyquinoline Sulfate

Oxiquinol potásico; Oxyquinol Potassium; Potassii Hydroxyquinolini Sulphas; Potassium Hydroxyquinoline Sulphate; Potassium Oxyquinoline Sulphate.

CAS — 14534-95-3.
ATC — A01AB07; D08AH03; G01AC30; R02AA14.
ATC Vet — QA01AB07; QD08AH03; QG01AC30; QR02AA14.

Pharmacopoeias. In *Br.*, *Fr.*, and *Ger.*
BP 2008 (Potassium Hydroxyquinoline Sulphate). An equimolecular mixture of potassium sulfate and quinolin-8-ol sulfate monohydrate. It contains 50.6 to 52.6% of quinolin-8-ol and 29.5 to 32.5% of potassium sulfate, calculated with reference to the anhydrous substance. A pale yellow, odourless or almost odourless, microcrystalline powder. Freely soluble in water; insoluble in ether. On extraction with hot dehydrated alcohol a residue of potassium sulfate and a solution of quinolin-8-ol sulfate are obtained.

Profile

Hydroxyquinoline sulfate and potassium hydroxyquinoline sulfate have antibacterial, antifungal, and deodorant properties, and have been used similarly in the topical treatment of skin, oropharyngeal, and vaginal disorders. Potassium hydroxyquinoline sulfate is often used with benzoyl peroxide.

Derivatives of hydroxyquinoline including the salicylate, benzoate, borate, hydrofluoride, iodochloride, silicofluoride, and sodium hydroxyquinoline sulfate have been used similarly.

Preparations

BP 2008: Potassium Hydroxyquinoline Sulphate and Benzoyl Peroxide Cream.

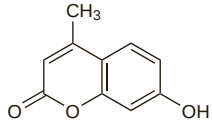
Proprietary Preparations (details are given in Part 3)
Ger.: Leioderm; ***Ital.:*** Aftir Shampoo; ***Neth.:*** Superol.

Multi-ingredient: ***Arg.:*** Curisept†; ***Austral.:*** Aci-Jel†; ***Belg.:*** Aseptosyl†; ***Braz.:*** Andolba; Cerumin; Colpolase; Lacto Vagin†; Leucocida†; Malvatricin Ginecologico; Malvatricin Pastilhas; Malvatricin Pronto; Malvatricin Solucao para diluir; Malvatricin Spray; Pan-Emecort†; Senol†; ***Chile:*** Diproquin; ***Cz.:*** Aviril H†; ***Fr.:*** Chromargon; Dermacide; Nestosyl; ***Ger.:*** Chinosol; Leioderm P; ***Hung.:*** Germicid†; ***Irl.:*** Quinocort†; Quinoderm; Valderma†; ***Ital.:*** Disinfene; Ustiosan; Viderm†; ***NZ:*** Aci-Jel†; ***Philipp.:*** Auralgan; ***Port.:*** Apyrol†; Queimax; ***Rus.:*** Contraceptin T (Контрацептин Т); ***S.Afr.:*** Cuticura†; Oto-Phen Forte; Quinoderm; Universal Earache Drops; ***Switz.:*** Benzocaine PD; Rectoseptal-Neo bismuthe; Rectoseptal-Neo simple; ***UK:*** Quinoderm; Valderma; ***USA:*** Acid Jelly; Auroguard Otic; Fem pH; Medicone Derma†; Oxyzal; Stypto-Caine; Trimo-San; Triv; ***Venez.:*** Borogin; Fluquinol†.

Hymecromone *(BAN, USAN, rINN)*

Himecromona; Himekromon; Himekromonas; Hymechromon; Hyméchromone; Hymecromonum; Hymekromon; Hymekromoni; Imecromone; LM-94. 7-Hydroxy-4-methylcoumarin.

Гимекромон
$C_{10}H_8O_3$ = 176.2.
CAS — 90-33-5.
ATC — A05AX02.
ATC Vet — QA05AX02.



Pharmacopoeias. In *Chin.*, *Eur.* (see p.vii), and *Jpn*.
Ph. Eur. 6.2 (Hymecromone). An almost white crystalline powder. Very slightly soluble in water; slightly soluble in dichloromethane; sparingly soluble in methyl alcohol. It dissolves in dilute solutions of ammonia. Protect from light.

Profile

Hymecromone is a choleretic and biliary antispasmodic. It has been given orally in doses of 400 mg three times daily at mealtimes. It has also been given as the sodium salt by slow intravenous injection as an adjunct to diagnostic procedures. Diarrhoea may occasionally occur.

Preparations

Proprietary Preparations (details are given in Part 3)
Austria: Cholonerton; Unichol; ***Belg.:*** Cantabiline; ***Cz.:*** Cholestil; Isochol; ***Fr.:*** Cantabiline; ***Ger.:*** Chol-Spasmoletten; Cholspasmin; Gallo Merz Spasmo†; ***Gr.:*** Cholirene; ***Ital.:*** Cantabilin; ***Pol.:*** Cholestil; ***Rus.:*** Odeston (Одестон); ***Spain:*** Bilicanta†; ***Turk.:*** Cantabiline.

Hyoscyamus

Banotu; Beleño; Bilsenkraut; Bolmört; Giusquiamo; Henbane; Hullukaali; Hyoscy.; Hyoscyami; Hyoscyami folium (hyoscyamus leaf); Jusquiame; Jusquiame Noire; Jusquiame noire, feuille de (hyoscyamus leaf); Meimendro.

Pharmacopoeias. *Chin.* specifies only the seeds.
Eur. (see p.vii) includes a form for homoeopathic preparations.
Ph. Eur. 6.2 (Hyoscyamus for Homoeopathic Preparations; Hyoscyamus Niger ad Praeparationes Homoeopathicas). The whole, fresh flowering plant of *Hyoscyamus niger*. Protect from light.

Profile

Hyoscyamus contains the alkaloid hyoscyamine with varying amounts of hyoscine and has peripheral and central effects similar to those of atropine (p.1219); its preparations have been used mainly for the relief of visceral spasm. The fresh whole flowering plant (*Hyoscyamus niger*) as well as the dried leaves have been used in herbal and medicine.

Homoeopathy. Hyoscyamus has been used in homoeopathic medicines under the following names: Hyoscyamus leaf; Hyoscyamus niger; Hyos. nig.

Preparations

Proprietary Preparations (details are given in Part 3)
Austria: Kelosoft; ***Switz.:*** Kelosoft; ***Venez.:*** Atroveran.

Multi-ingredient: ***Arg.:*** Hepacur; Trixol†; ***Braz.:*** Dorveran†; Ductoveran; Espasmalgon†; MM Expectorante; Sedatux†; ***Denm.:*** Zink-Calmitol†; ***Fr.:*** Laccoderme a l'huile de cade; ***Ger.:*** Unguentum lymphaticum; ***Switz.:*** Cardiodoron†; Dragees S contre la toux†; Gouttes contre la toux "S"; Kelimed; Sirop pectoral contre la toux S; Sirop S contre la toux et la bronchite; ***UK:*** Onopordon Comp B; ***Venez.:*** Atrobel; Cloverin†; Cratex†; Linfoderm; Neo-Atropan†; Tropifen†.

Hypoglycin A

Hipoglicina A. L-2-Amino-3-(2-methylenecyclopropyl)propionic acid.

$C_7H_{11}NO_2$ = 141.2.
CAS — 156-56-9.

Profile

Hypoglycin A is a toxic substance present in the arillus of unripe ackee (akee), the fruit of *Blighia sapida* (Sapindaceae). It is responsible for Jamaican vomiting sickness, with symptoms of acute and severe vomiting, hypoglycaemia, muscular weakness, CNS depression, convulsions, and coma, frequently fatal. Glycine has been suggested for the management of hypoglycin A toxicity.

Hypophosphorous Acid

Acidum Hypophosphorosum; Hipofosforoso, ácido; Phosphinic Acid.

H_3PO_2 = 66.0.
CAS — 6303-21-5; 14332-09-3.

Pharmacopoeias. In *USNF*.
USNF 26 (Hypophosphorous Acid). It contains 30 to 32% of H_3PO_2. A colourless or slightly yellow, odourless liquid. Store in airtight containers.

Profile

Hypophosphorous acid is used as an antoxidant. Hypophosphates were used in tonics; like the glycerophosphates they are not a suitable source of phosphorus.

Preparations

Proprietary Preparations (details are given in Part 3)
Multi-ingredient: ***UK:*** Dispello.

Hyssop

Herba Hyssopi; Hysope; Hyssop Wort; Ysop.

Pharmacopoeias. In *Fr.*

Profile

Hyssop is the fresh or dried aerial parts of *Hyssopus officinalis* (Lamiaceae). The herb and its preparations are included in herbal preparations mainly for disorders of the gastrointestinal and upper respiratory tracts.

It is the source of hyssop oil which is used in aromatherapy.