TABLE I.—RESULTS OF THERAPY

Diagnosis	No. Cases	Excellent	Good	Fair	No Change
Primary Skin Infections					
Pyoderma	25	4	12	5	4
Infectious eczematoid dermatitis	20	3	11	4	2
Impetigo	13	8	4	1	...
Folliculitis	9	5	2	2	...
Ecthyema	4	1	1	2	...
Sycosis barbae	4	...	2	1	1
Total	75	21	32	15	7
Secondary Infected Dermatoses					
Herpes simplex	6	4	2	...	...
Contact dermatitis	4	1	2	1	...
Atopic dermatitis	3	...	2	1	...
Stasis dermatitis & ulcer	3	...	1	2	...
Tinea pedis	3	1	1	1	...
Tinea capitis	2	...	1	1	...
Seborrheic dermatitis	1	...	...	1	...
Lichen simplex chronicus	1	...	...	1	...
Pediculosis corporis	1	...	...	1	...
Pustular dermatitis-palm	1	...	...	1	...
Total	25	6	9	10	...

DISCUSSION

A comparison of the results of treatment in those subjects treated for primary skin infections involving the uppermost skin structure such as the epidermis and the upper portion of the dermis for example, impetigo, pyoderma, infectious eczematoid dermatitis and folliculitis, to those involving the deeper portion of the dermis, for example, ecthyema or sycosis barbae, revealed the following interesting results. In the former group 49 patients out of a total of 67 patients, or 73.1%, obtained satisfactory results whereas in the latter group only four patients out of a total of eight, or 50%, obtained satisfactory results. This observation suggests that CETAB cream will be most effective in the treatment of those cutaneous infections involving the more superficial structure of the skin.

In the majority of cases treated for secondary infection of preexisting dermatoses, treatment with CETAB cream for 1 week produced sufficient improvement of this complication to allow proper dermatological therapy for the underlying skin condition This was of particular importance where adequate control of the micro-organism was necessary prior to institution of topical steroid therapy.

SUMMARY

The quaternary ammonium compound cetyltrimethylammonium bromide incorporated in a water soluble aromatic mix base as a cream is an effective antimicrobial agent in the treatment of primary and secondary types of skin infections.

Treatment of patients with primary skin infection produced satisfactory results in 71% of the cases treated. Treatment of patients with secondary type skin infection produced satisfactory results in 60% of the cases treated and permitted indicated therapy of underlying dermatoses, in the majority of cases within one week.

CETAB cream is effective against cutaneous pyogenic infections produced either by hemolytic *Staphylococcus aureus coagulase positive* organisms or in combination with hemolytic *Staphylococcus albus*.

The failure of this preparation to produce allergic or irritant reactions, when used in indicated conditions, indicates a low sensitizing and irritant index.

Isolation of Polyporic Acid from *Lopharia papyracea*

By V. JIRAWONGSE, E. RAMSTAD, and J. WOLINSKY

IN RECENT years a mushroom known as Hed Dchig (hed, mushroom; dchig, tummy wood) or Hed Tin Tŭkgae (Tin, foot; tŭkgae, gecko) has come into use in folk medicine in northeastern Thailand as an anthelmintic and is claimed to be effective, especially in the treatment of tapeworm infestations. The mushroom grows on *Careya arborea* Roxb. (*Mytaceae*) and is used as a food. It may be found in local drugstores in Udorn City.

Hed Dchig has been identified as *Lopharia papyracea* (Jungh.) Reid, belonging to the family of *Hydnaceae*.

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Having available a small supply of the dried mushroom[1] we subjected it to chemical investigation and found it to contain 11.4% of polyporic acid, a compound we found to cause contraction of isolated rabbit ileum suspended in oxygenated Tyrode solution.

EXPERIMENTAL

Isolation.—The leathery tan mushroom was dried over calcium oxide (9.5% moisture), powdered, defatted with petroleum ether by extraction in a

[1] We wish to express our gratitude to Mr. Vichian Bhamarasiri, Bangkok, for providing a sample of the drug, to Mr. Derek A. Reid, Royal Botanical Gardens, Kew, London, for identification of the mushroom, and to Dr. R. L. Frank for making available a sample of polyporic acid.

Soxhlet apparatus, and then extracted exhaustively with chloroform. During the extraction, quantities of permanganate-colored, glittering crystals separated from the brownish-violet solution. Further amounts were obtained by concentration of the solution. Total yield of crystals was 11.4% of the dry weight of the mushroom. The crystals were very sparingly soluble in cold ether, chloroform, xylene, and pyridine, but soluble in alkali. They were iridescent in polarized light and possessed a slight mushroom odor.

Identification.—A sample which crystallized from pyridine as orange needles, turning brown on drying, was sublimed *in vacuo* and then recrystallized from chloroform to give shiny purple plates, m.p. 310.5–312°[2] (sealed capillary), $\lambda_{max.}^{EtOH}$ 205, 256, 262, infl. 330 and 465 mμ (ε, 48,000, 43,000, 43,000, 11,600, and 400, respectively), $\lambda_{max.}^{EtOH-NaOH}$ 530 mμ, (ε 200). Literature: m.p. 303–305° (1), $\lambda_{max.}^{dioxane}$ 261, 332 (4.45 and 3.86) (2), $\lambda_{max.}^{pyridine-H_2O}$ 530 mμ (3). The infrared spectrum of this compound was identical with that of an authentic sample of polyporic acid.

Anal.—Calcd. for $C_{18}H_{12}O_4$: C, 73.95; H, 4.14. Found: C, 74.02; H, 4.37.

The diacetate derivative of polyporic acid was prepared using acetic anhydride and pyridine and showed m.p. 212–214° after recrystallization from methylene chloride-ether, $\lambda_{max.}^{EtOH}$ 236, 240 mμ (ε 1,100, 2,350). Literature: m.p. 215° (4); $\lambda_{max.}^{dioxane}$ 240 and 336 mμ (4.33 and 3.78).

The dimethyl ether of polyporic acid was prepared by adding an excess of diazomethane in ether to a suspension of the acid in methylene chloride. The solvents were removed immediately and the residue recrystallized from benzene-petroleum ether to give an orange solid, m.p. 192–194° [reported (5) m.p. 192°].

[2] All melting points are uncorrected.

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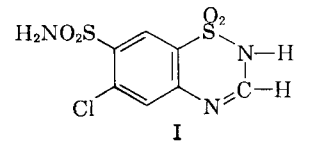
Saccharin Derivatives VI. Synthesis and Diuretic Activity of 2-Methyl-6-sulfamoylsaccharin

By GLENN H. HAMOR

THE APPEARANCE in the literature in 1957 of a report describing the diuretic activity of 6-chloro-7-sulfamoyl-1,2,4-benzothiadiazine-1,1-dioxide (I) (1) led to the preparation of a series of structurally related saccharins. This paper relates the synthesis and result of pharmacological testing of 2-methyl-6-sulfamoylsaccharin (II). Novello, in a recent paper (2), describes the preparation of certain 5-chloro-6-sulfamoylsaccharins (III).



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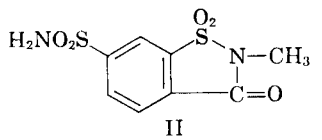
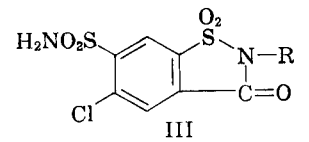


II



III

The 2-methyl-6-sulfamoylsaccharin was synthesized by chlorosulfonation of toluene, followed by treatment with 28% ammonia, which gave toluene-2,4-disulfonamide. Oxidation of this compound, succeeded by a Williamson reaction of the resulting 6-sulfamoylsaccharin with methyl iodide, gave the desired 2-methyl-6-sulfamoylsaccharin.

Pharmacological screening in rats has indicated that 2-methyl-6-sulfamoylsaccharin possesses marked diuretic activity (Table I). Testing in the dog for effect on renal clearance of electrolytes and water shows primarily an increase in urine volume accompanied by a slight increase in the excretion of sodium and an increased excretion of potassium.[1]

TABLE I.—DIURETIC EFFECT IN RATS[a]

Dose, mg./Kg. p.o.	Excreted, %	Effect Excreted, %[b]
Control	60[c]	...
5	84	24
15	111	51
30	154	94
60	171	111

[a] Eight rats per group; each group hydrated with 25 ml./Kg. of 0.9% sodium chloride p.o.; length of test was 5 hours. [b] Test minus control. [c] Experience has fixed the control per cent excretion value at 60% for rats. An effect of 22% or greater (82% or more excreted) shows a significant diuretic response.

EXPERIMENTAL[2]

6-Sulfamoylsaccharin.—This compound was prepared by alkaline potassium permanganate oxidation of toluene-2,4-disulfonamide by the method used by Noyes (3) to synthesize 6-nitrosaccharin. The toluene-2,4-disulfonamide was synthesized according to Wynne and Bruce, m.p. 173–174.5° [reported

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[1] The author is indebted to Drs. Alfred Maass and Virgil Wiebelhaus, Smith Kline and French Laboratories, Philadelphia, Pa., for pharmacological testing.
[2] Melting points are uncorrected and were determined by the open capillary tube method.