

ful that its increased use is a matter of congratulation. However, it is a thriving and growing industry. Old linen rags have been found available for the manufacture of glucose, and have been turned to account in Germany for the purpose. An establishment in that country is said to be making a ton of glucose per day from this kind of material.

Thus chemistry is daily, to a greater extent than ever before, affecting the industries of the world, supplying new articles of food, aiding land to produce larger crops, utilizing waste products, and teaching that, as in the economy of nature there is no waste, there should be none anywhere.

TREATMENT OF CANCER WITH CAUSTICS.

THE JUICE OF OXALIS ACETOSELLA AS A CAUSTIC.

By EDGAR ELTINGE, M.D., Brooklyn, N. Y.

THE *Oxalis acetosella*, familiarly known as wood-sorrel, is indigenous both to the United States and Europe, and is abundantly found in shady, waste places, groves and hedges, neglected or uncultivated grounds and unfrequented highways, and mountainous woody regions. Many other species having similar or like properties may be included under the same general head, containing the same remedial agent—the oxalate of potassa—to which it is believed to owe its acidity. It possesses marked caustic or escharotic properties, heretofore either unnoticed, untried, or unadmitted by the general profession, although it has formed the essential ingredient of the pastes used by some empirics.

The expressed, inspissated juice of this plant, properly formed into a suitable paste, I have successfully used as a local application in the removal of an epithelioma of the lip occurring in my own person. This had gradually and slowly enlarged, with alternate abrasions and partial healings, until it had become an inflamed, burning, painful, and offensively ulcerating tumor, attended with tumefaction of the sublingual, right parotid and right tonsillary glands, with copious salivary flow and an inordinate sebaceous secretion which was almost unendurably offensive. By none except the unfortunate possessor of so unfriendly and loathsome a body-companion can the abhorrence and foreboding with which it is accompanied be realized.

The best surgical advice recommended excision by the knife, but with an unfavorable prognosis.

My next trial was had with the zinc chloride paste of Canquoin, with which I had successfully operated several years before upon one whose ability to endure pain was commendable. But when used in my own case it aborted, on account of the excessive hemorrhage which its use provoked, a small portion only of the tumor being removed.

After a delay of two months, no especial good resulting, I was prompted to make a second trial of *Oxalis acetosella*. This second trial was made with perfect success.

Having some previous knowledge of the caustic effects of the juice of the oxalis, and desiring if possible to avoid the deformity as well as the uncertainty frequently attending excision, I was induced to give the inspissated juice a trial, but failed in the first application to effect the desired result, owing, as I subsequently found, to its too early withdrawal, my courage not being sufficient to cope with the pain self-imposed. Three successive applications were made at intervals of twelve hours each, which were sufficient to entirely destroy the growth; the resulting eschar separated on the eighth day, leaving a healthy granulating surface, which rapidly healed. Not a drop of blood issued throughout, the contrast in this respect with the effect of the zinc paste being marked. The glandular tumefactions rapidly subsided, and now, at the end of two years, I still remain free from any signs of recurrence.

I found the pain produced by the application of this caustic to be intense, demanding all my fortitude to enable me to endure it. The duration, however, did not exceed half an hour after each application—a period during which it would be quite practicable to maintain general anesthesia in patients requiring it.

THE ADVANTAGES OF CAUSTICS FOR THE REMOVAL OF MALIGNANT GROWTHS.

By FRANCIS H. STUART, M.D.

I AM glad the attention of the Anatomical and Surgical Society has been called to this subject, and that this mode of treatment has been so strikingly illustrated by the case of Dr. Eltinge, he himself being the patient. The use of caustics for the removal of morbid growths has been neglected by the profession in general, being looked upon as savoring of quackery. I suppose this is because persons ignorant of anatomy as well as of pathology, except in its dire results, have flourished as quacks—removing such growths with certainty, and often with good result, by means of caustic pastes. Dread of the knife is the universal feeling. We shrink from a mutilation of the body as well as shrink from the pain inflicted by the surgeon's knife. Happily the pain is not now to be endured. An anæsthetic certainly puts the sufferer beyond that, and also the sickening sight of the paraphernalia of the operating-room, so often unnecessarily displayed.

It is for these reasons that patients desert the offices of the studious and learned surgeons and flock to the houses of the "cancer doctor." The latter applies a "paste," which he hardly knows more of than its effects, having previously extorted a princely fee from his unfortunate victim. The diagnosis of the disease and the necessity for its removal has already been determined by the family surgeon(?). Perhaps the day has been fixed for an operation, to which the patient has looked forward with feelings scarcely less harrowed than if it were a day of execution. A friendly acquaintance tells of the bloodless and knifeless method of "Dr." —, and thither the patient resorts.

I would not be understood as advocating the universal rejection of the knife and the adoption of caustics for such purposes. But I think that in caustic pastes we have a therapeutic, or rather surgical remedy that we could employ frequently, with as good or better results than are obtained from the knife. Over three years ago, while acting as adjunct surgeon to the Long Island College Hospital, I was consulted by a patient with cancer of the left mamma. Its removal was advised. The diagnosis and the remedy proposed was indorsed by other surgeons whom she consulted. She went to a "cancer doctor," who removed it with paste. I have since regularly visited the patient to observe the result. A better result, more thorough removal, and more symmetrical scar, I have never seen. About a year ago I was consulted by an elderly gentleman who had what was diagnosed by myself as commencing epithelioma on the right cheek over the zygomatic arch. The diagnosis was confirmed by the highest surgical authority of this city and of New York, and its immediate removal advised. Having in mind the above mentioned case, and also having recently

had my attention called to the sulphate of zinc paste (Zinci sulph. ac. sulphuric. q. s. ut fiat magma), I determined to use it in this case, though the surgeon of New York, who was consulted, flatly denounced such a method. My patient was willing to submit to the treatment proposed. The face was shaved, and the surrounding surface protected by ointment. The paste was then applied, the cuticle having been destroyed by carbolic acid. It occasioned scarcely any pain at all. After three days the scar began to separate, and entirely fell off in seven, leaving a healthy-looking granulating surface, which healed in a surprisingly short time. The patient has since then had no further trouble.

The late Prof. Simpson was an enthusiastic advocate of sulphate of zinc as an escharotic. His statements in regard to its action are summarized by Dr. Stephen Smith, of New York, in an admirable lecture upon the subject, published in the *New York Medical Record*, February 14, 1880. It is as follows: "He states that the part to which it is applied is rapidly destroyed to a depth corresponding to the thickness of the superimposed layer; the slough is of a white color, and separates usually on the fifth or sixth day, leaving behind it, when the morbid tissue is removed, a red, granulating, healthy, and rapidly cicatrizing wound. This slough shows no tendency to chemical or putrefactive decomposition, but is firm in texture, and free from taint or odor; the local inflammatory reaction around a sulphate of zinc eschar is generally light and transient; there is no marked effusion or swelling in the surrounding parts, except where the caustic was used in the neighborhood of loose cellular tissue; the general system is not affected by its absorption, nor are there any constitutional symptoms, however freely and lavishly it is used."

Dr. Smith continues: "We have in the sulphate of zinc a caustic which, in its various forms, is adapted to a great variety of conditions. Prof. Simpson sums up its advantages, as compared with other caustics, as follows: '1. Its powerful escharotic action; 2. The rapidity of its action; 3. Its great simplicity and manageableness; 4. Its facility of application; 5. Its non-tendency to deliquesce or spread; 6. Its perfect safety; 7. Its efficacy.' He speaks hesitatingly as to the seventh statement, but adds that he has seen not only the surface of canceroid and cancerous ulcers speedily and perfectly excavated by its application, but the surrounding characteristic induration become at the same time rapidly absorbed, and the remaining wound speedily cicatrizes. He has also found epithelial or canceroid ulcer of the cervix uteri, under the local application of the powdered sulphate of zinc, exfoliate its ulcerated surface, have its sanguineous and sero-purulent discharges arrested, the parts temporarily, if not permanently, healed, and the patient's health and strength and spirits restored; though, on first using the caustic, he believed the disease to be altogether beyond the reach of any remedial measure."

"My experience in the use of the sulphate of zinc as a caustic has been considerable, and fully coincides with that given above."—*Annals of Anatomy and Surgery*.

THE ANTISEPTIC TREATMENT OF TOOTH ROOTS.

THE attention of the profession having been of late greatly occupied in investigating the merits of antiseptic surgery, it may not be altogether unprofitable to consider how far the antiseptic principles are applicable to the teeth; and, if applicable, what the practical result of their application will be.

With this view, I have for the last year been employing two very powerful antiseptic agents in the treatment of dead roots, eucalyptus oil and iodoform, with very satisfactory results.

Eucalyptus oil and iodoform are both very much more powerful antiseptics than carbolic acid, and their effects are much more permanent.

When a tooth dies, partially or wholly, the slough which remains differs in no respect from a slough in any other part of the body; if it become septic (as in the natural course of events it must), it will cause inflammation and suppuration, and be rejected from the living economy. Furthermore, if these products of inflammation be prevented from discharging themselves through the open cavity, owing to presence of a filling, they will collect inside and force their way up the fang, and end by causing an alveolar abscess. Now, if a local slough in any other part of the body be rendered and kept perfectly aseptic, the behavior of the parts is very different; there is neither irritation nor inflammation; the dead tissue, remaining perfectly white, pure, and sweet smelling, is gradually removed by absorption, not rejected as discharge; the temperature does not rise, there is no pus; the slough is quietly absorbed and replaced by new, living, cicatricial connective tissue. This result may be seen at any time in Professor Lister's hospital practice or anywhere else, where the antiseptic precautions are punctiliously observed.

If then this asepticity be produced in the pulp cavity of a necrosed tooth, that is, if all the bacteria it contains be destroyed, and the entrance of fresh ones prevented, then the slough it contains, whether it be part or all of the pulp, may be sealed up with an impermeable filling, without fear of any of the unpleasant sequelæ above alluded to. The slough will be removed not by inflammation and suppuration, but by absorption and replacement by cicatricial tissue. There will be no abscess, because there will be no inflammation, the dead pulp having been rendered inert.

From theory to turn to practice, the whole gist of the matter lies in the words *perfectly aseptic*; antiseptics to be any use at all must be carefully and thoroughly applied.

The method of procedure I have adopted has been very simple, and hitherto invariably successful. It has simply consisted in clearing the cavity, removing a little of the slough from the pulp cavity, and dressing the tooth with eucalyptus oil and iodoform on a piece of wool every day (the patient can do this for himself, if necessary), until no smell but that of eucalyptus oil can be detected when the dressing is removed. It may then be sealed up with gutta percha, as an experiment (the eucalyptus has a slight solvent action on gutta percha, which renders the stopping very perfect). It is perfectly aseptic; there will be no disturbance; and the tooth, after three weeks or so, may be permanently filled. If the aseptic condition is not perfect, the patient will soon experience unpleasant sensations, in which case the gutta percha must, of course, be taken out and the dressing resumed, and the gutta percha tried again after another interval. Of course, all pus and debris should be removed first with an excavator.

The smell and taste of eucalyptus oil is rather pleasant, and it causes no irritation whatever to gum or lips, and this is no unimportant point to a patient who has to use the dressing for a long time, especially if he has had any previous experience of creosote.

Under these circumstances, if a pulp be partially dead, or

if one root be dead and the other living, it is not necessary to destroy the living part with arsenic.

Lastly, in the case of an alveolar abscess, the effect of eucalyptus oil when injected is more rapid and effectual than that of any other agent with which I am acquainted, because its antiseptic powers are not only greater but more permanent, which latter is a very important point in regions where bacteria teem as they do in the mouth.

The power of iodoform to avert suppuration has been much testified to recently in all the medical papers, and the rapidity with which I myself have seen chronic ulcers and soft chancre disappear under it is almost magical. Eucalyptus oil dissolves iodoform, so that they can be easily used together.—*Underwood, in Monthly Review of Dental Surgery*.

CHARCOAL IN INFANTILE DIARRHEA.

BEFORE the Paris Academy of Medicine Dr. Guerin stated that a teaspoonful of powdered charcoal in a cup of milk with a little coffee added was excellent treatment. In a little while—sometimes the first day—the passages change consistence and odor and the green color becomes natural. This mixture is easily made, and infants drink it as if it were milk alone. At the same time Dr. Guerin adds a little sweetened water to one-third or one-half milk, and infants like it, and often it stays vomiting. He has seen infants sick six or eight days with uncontrollable diarrhea recover in three days.

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TABLE OF CONTENTS.

	PAGE
I. ENGINEERING AND MECHANICS.—Calvert Street Bridge, Baltimore. Full page illustration. Perspective, elevations, sections, details. By J. H. WATSON. 4327	4327
Do Stays Stay? Communication from A. HERBERT CRAWFORD. 4328	4328
Improved Water Gauge for Boilers. 3 figures. 4328	4328
Device for Cleaning Boiler Tubes. 1 figure. 4328	4328
A Newly Discovered Property of the Ellipse, and its Application to the "Oval Chisel." By FRANK M. LEAVITT. 2 figures. 4328	4328
The Lighthouse of Armen. Finisterre. 4 figures. Elevation, vertical section, plan. Elevation and plan of the rocks at Ar-men. Failure of a Dock Wall. By Lieut. H. D. LAFFAN, R.E. 4329	4329
Approximate Rules for the Penetration of Armor. 4330	4330
Short Lessons to Shipbuilders. 4330	4330
Experiments on the Position of Screw Propellers. 3 figures. 4331	4331
United States Ocean Commerce. United States Built Ships. National Convention Paper, by W. H. WILSON. 4331	4331
Plain and Ornamental Borders for Coach Painting. By TRIN. CHILD. 14 figures. 4332	4332
A Librarian's Notion of What a Library Building should be. W. F. Pogue's paper before the Convention of the American Library Association. 4332	4332
House Drainage, Sewerage, and Ventilation. Paper read by Richard Middleton before the Society of Civil and Mechanical Engineers, London. 4333	4333
II. TECHNOLOGY.—Every Man his own Sensitive Plate Maker. By J. A. FORREST. Gelatine Dry Plates.—Substitution. The Emulsion.—To Wash the Emulsion.—Coating and Drying Plates.—Development.—Intensifying.—Supplant Plate Drying Box.—On Rational Seasoning of Wood, with special regard to the "Beerizing" Process. By SIGISMUND BEHR. What wood really is.—A simple experiment.—Explanation.—Creosoting lumber.—The "Beerizing" process.—Its cheapness and quickness. 4334	4334
Sundry Notes: Use of Sirups in Brewing.—The Influence of Oxygen on Different Ferments.—Researches on an Acidifying Ferment.—Beer in Frosty Weather.—A Process for the Manufacture of Ammonia.—The Barff Process of Coating Iron.—Paper from Bagasse.—Glucose Manufacture. 4341	4341
III. MEDICINE AND HYGIENE.—Arsenical Wall Paper and Artificial Flowers. Serious cases of poisoning thereby. 4340	4340
Treatment of Cancer with Caustics. The juice of oxalis acetosella as a caustic. By EDGAR ELTINGE. 4342	4342
The Advantage of Caustics for the Removal of Malignant Growths. By Dr. FRANCIS H. STUART. 4342	4342
Antiseptic Treatment of Teeth Roots. 4342	4342
Charcoal in Infantile Diarrhea. 4342	4342
IV. PHYSICS.—Action of an Intermitting Beam of Radiant Heat upon Gaseous Matter. By JOHN TYNDALL. Two recent and highly important communications to the Royal Society. 4335	4335
On Some Physical Phenomena. By W. J. MILLAR. Force.—Matter.—Motion.—Space.—Time.—Velocity.—Momentum.—Energy.—Sir William Thomson's Harmonic Analyzer. 3 figures. 4337	4337
The Jordan Barometer. 4337	4337
Glass as an Obstructor of Light. 4338	4338
A Simple Transmission Dynamometer. By ELIHU THOMSON. 2 figures. 4338	4338
V. CHEMISTRY.—Chemical Decomposition Incited by a Cold Fluid Stratum Floating on a Warm Liquid. By Dr. HENRY A. MOTT, Jr. Upon the Production of Ozone by Heating Substances Containing Oxygen. By Dr. A. R. BROWN. 4339	4339
Separation of Cobalt and Nickel. By V. REICHEL. 4341	4341
VI. NATURAL HISTORY.—On the Grains of Silica and Micrococci of the Atmosphere. By Dr. T. L. PHIPSON. 4338	4338
VII. ART.—Suggestions in Decorative Art. Panel from the Communion Table in the Cathedral of Verdun. Designed by A. G. Moreau, Paris. 4338	4338

PATENTS.

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