tissues around were also softer and more pliable. On Aug. 1st it was noted that the local improvement continued and that the measurements of the largest area of disease were—length, $2\frac{3}{4}$ in.; breadth, $1\frac{1}{4}$ in.; while the depth was hardly appreciable. The colour was a dull yellowish-white and the vascularity slight. There were five small nodules in the axillary region, which were also diminishing in size and vascularity, though perhaps not so much as the larger growth. The patient's general health and nourishment were satisfactory; and as she was an intelligent and reliable woman, and interested in her own case, I allowed her to go to Bridge of Allan for a change, and asked her to report herself from time to time. This she did, and without going into a detailed account of her condition on each visit that she made I may say that the local improvement continued, and my note on Oct. 12th, just four months after the operation of oöphorectomy, was as follows: "On examination of the left breast the condition of the tissues is favourable. The most remarkable feature of the case is the yellow fatty look that the former thick bar of cancerous tissue above the scar of the incision for removal of the breast presents. It is to my mind the most striking feature of the case. The cancerous tissue has been reduced to a very thin layer and is in no way raised above the surrounding skin. In fact, the whole surface is smooth and level, and to the naked eye it seems as if the skin at this part had a yellow look. So distinct is this that one could easily trace out the outline of this yellow-coloured tissue. At places the surrounding skin seems pushing its way into the yellow mass and the processes of bluish cicatricial tissue are to be noted. The yellowish nodules at the axillary end of the incision are still apparent from their colour, but they seem thinning out. The whole of the tissues on the chest wall are more movable and the surrounding skin has a clear and healthy look. The scar of the former ulcer above the mammary excision cicatrix is sound and no new nodules are at present observable. The patient expresses herself as feeling very well and looks so. She is taking four 5-gr. tabloids of thyroid extract daily." I need not trouble with any further detailed account of this patient than to say that eight months after my operation all vestiges of her previous cancerous disease had disappeared, and that I am able to show her with a sound cicatrix and healthy thoracic tissues, and that she is apparently in excellent health.

(To be concluded.)

NOTE ON EUCAINE AS A LOCAL ANÆSTHETIC.

BY ROBERT BRUDENELL CARTER, F.R.C.S. ENG.,
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THE *Medizinische Novitäten* for June quotes from the *Aerztlicher Central-Anzeiger* a condensed account of a paper read before the Hufeland Society of Berlin by Dr. Gaetano, of Vinci, Messina, on the properties of "eucaine" as a local anæsthetic, and this account induced me to make further inquiry into the subject. I have since seen an English summary of the paper in which the author is described as "Dr. G. Vinci," and I do not know which of the two versions of his name is correct.

I am informed that eucaine is not derived from the vegetable kingdom, but that it is a laboratory product which can be prepared in any quantity at moderate cost. I am also informed that its proper designation is "methyl-benzoyl-tetramethyl-oxypiperidine-carboxylic-acid-methyl-ester," a combination which seems to open a door, either in speech or writing, for infinite possibilities of error. The trivial name "eucaine" is comparatively free from this objection; but I neither know by whom it was invented nor what idea, if any, it is intended to convey. It is apparently compounded of the prefix "eu" and of the last syllable of "cocaine," and if so may perhaps be regarded as a first cousin of "chlorodyne." But "eucaine" seems to have no meaning, while "green pain" has, at least, the semblance of one.

Dr. Gaetano, or "Dr. G. Vinci," whichever it may be, described eucaine as possessing the properties of cocaine as a local anæsthetic, but as being less toxic and as having no effect upon the pupil. The last statement seemed to me to be of practical importance, because a dilated pupil is an

impediment to the performance of many operations upon the eye. It has long been my practice to neutralise the dilating effect of cocaine by a preliminary application of eserine, but this course is not entirely satisfactory. It is difficult to secure the precise degree of effect which is desired, while the eserine dilates the vessels of the iris and occasions free bleeding when they are incised. It also renders the iris tissue comparatively rigid, so that it is less easily drawn out of the anterior chamber.

I obtained a supply of a 5 per cent, watery solution of eucaine hydrochloride from Mr. Rogers, of 327, Oxford-street, and used it last week for a cataract extraction, the patient being a woman. Before my arrival the nurse had applied a drop of the solution within the lower lid every five minutes for six times, and I found the eye perfectly insensitive. The pupil was unaffected and acted readily to light. There was scarcely any bleeding from the cut iris; there was perfect quiescence of the muscles and there was no pain. I asked the patient whether she had felt anything and she replied, "I felt something moving about my eye but it did not hurt me." There was no pain afterwards and healing was uninterrupted. I have since successfully used a single application of the same solution as a preliminary to the removal of a foreign body embedded in the cornea.

In the original paper it is said that eucaine has been successfully used in dentistry and laryngology, and that solutions may be injected hypodermically without injury. My first experiments will certainly induce me to use it again, and for tenotomies as well as for iridectomy or extraction. It is said that the solution above mentioned may be sterilised by boiling, again and again if necessary, without undergoing decomposition or suffering any deterioration of quality.

Harley-street, W.

ON THE ORGANIC MEMBRANES AS INSULATORS.

BY SIR BENJAMIN WARD RICHARDSON, M.D., F.R.S.

UP to the present time we have been content to look upon a membrane of the body, the pericardium, the periosteum, the capsule of the kidneys, and any structure of the kind, as a covering of the organ wrapped up in it, that holds the organ, as it were, in a mould, supports it in its place, allows it to glide, and by virtue of the fluid secreted keeps it distinct and separate. There can be no question that these grand functions belong to the membranes, which have ever been to us structures of the utmost moment. I have watched the influence of many substances upon them; have noted their conditions during the various stages of life, and have examined their degenerations during disease and after death. But I have recently made observations on these structures—membranes—which, if I am right, give them a new value, or rather a value that has not before been appreciated. It seems to me they are *electrical insulators*, and by their presence confine and render useful the vital force that is developed in the organs they surround. My first observations leading to this conclusion were conducted on the nervous membranes—those that envelop the cerebral convolutions and the spinal cord; from these I passed on to the other membranous envelopes to find that they all have a common quality.

I obtained an electrical battery consisting of twenty-four small cells, so arranged that one cell could be put on at a time, or the whole or part of the whole as might be required. I commissioned Messrs. Faraday of Berners-street to construct for me a delicate galvanometer, the needle of which moved in a millimetre circle and certified, with accuracy, the force of the current transmitted. I fixed to one pole of the battery a conductor which was connected to the galvanometer, and from the opposite pole of the battery attached a platinum conductor of the same length and carried it also to the galvanometer. This last conductor I divided in the centre and joined the end of the portion from the galvanometer to a platinum disc that was secured by its under surface to a porcelain slab. The other half of the conductor (from the battery) was allowed to remain free with a probe-like end which could be used at any moment to touch the platinum disc and complete the circuit or to touch any substance laid

upon the disc that would either conduct or break the current. The apparatus when complete acted perfectly, and the minutest current could be detected. Sometimes I used the battery with a single cell, sometimes with more than a single cell, while, as a general rule, I used the whole power of cells, twenty-four in number. When all was in order and the battery in action the platinum probe was brought into direct contact with the platinum disc, and the current was proved by the deflection of the needle on the galvanometer. After this, the needle being steadied and set, a piece of some thin membrane was laid on the platinum disc, and its conduction or resisting power tested with the results to be described.

Dura mater.—A disc was cut from the dura mater of a dead sheep, and, after being thoroughly cleaned, was laid on the platinum disc. The probe like end of the conductor from the battery was then pressed upon it when the current was found to be completely intercepted. The insulation was, in fact, perfect. A piece of membrane covering the spinal cord at its upper part, stripped off and carefully cleaned, was laid on the platinum disc, and the probe end of the conductor was put upon it. It resisted the current as effectively as a layer of indiarubber or guttapercha or a fine slice of fatty tissue could have done.

Periosteal membrane.—From off a bone a bit of periosteum detached, cleaned, and laid on the platinum plate insulated perfectly.

Pericardial membrane.—This membrane was tested in the most careful manner and yielded the same result.

Endocardial membrane.—There was more trouble with endocardial membrane than with pericardial, for the structure is very fine and strongly adherent to the underlying substance. But when cleanly dissected out it was found to be as perfect an insulator as the pericardium, so that the heart structure proper is apparently enclosed in two layers of insulating membrane. The endocardial lining of the arteries showed the same character; the valves of the heart cut out entire did not absolutely insulate, but the membrane covering them on either side did.

Peritoneal membrane.—Portions of peritoneal membrane were taken from various parts—from the liver, from the spleen, from the intestine, and from the bladder. When the membrane was derived from any of those sources and scrupulously cleaned and spread out on the platinum disc it resisted just as the other membrane had done and proved itself an insulator.

Capsule of the kidney.—The readiness with which the capsule of the kidney can be detached renders it a good specimen for experiment, and it was freely used. It proved to be a perfect insulator, and we may consider that the kidney as it swings in its place is completely insulated.

Lining membrane of an egg.—The thin lining membrane of an egg detached from the inside of the shell, when tested, showed the same insulation.

It was a question whether mucous membrane in the same manner as serous membrane resists the current. To test this fact mucous membrane was taken from the side of the tongue of a sheep, from the lining of the intestinal canal, and from the lining of the trachea. The membrane had to be carefully cleaned, with the greatest attention to detail, and when it was laid out in its pure character of membrane it also insulated.

In the above, physiological observations have alone been named, but there are pathological ones connected with the subject of equal moment. The absorption of water by membrane, water being a conductor, may interfere with insulation in the case of dropsies, and some deposits may also interfere. But these and other points remain for investigation.

A THERAPEUTICAL BLUNDER—BEEF AND MALT WINE.

By FREDERIC C. COLEY, M.D. DURH.,

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DISEASES OF THE CHEST.

THERE are various preparations on the market professing to be made up of extract of beef, extract of malt, and port wine. If this combination were believed in only by the uneducated public one need not be surprised. It is just the sort of therapeutic blunderbuss which might be expected to take the fancy of those who do not know better; but when we find members of the medical profession recommending such a conglomeration it is time to draw attention to the absurdity of it. It is, in fact, difficult to imagine a more thoroughly unscientific combination than the one in question. Let us consider the ingredients separately and see whether they are well calculated to act together.

Extract of beef we all know is not food. Liebig himself proclaimed that. It has its use however. First and foremost, it is valuable because of its meaty flavour, on account of which many patients can take with it bread or lentil flour, &c., which would otherwise be unacceptable. It is also a harmless stimulant. Lastly, people who cannot take tea or coffee at supper time for fear of insomnia, and are liable to biliousness when they substitute cocoa, often find extract of beef (or some similar preparation) very useful because it decidedly favours sleep. To combine such a preparation with port wine shows a complete ignorance of its real uses. The slight stimulating effect of the very small quantity of the extract contained in an ordinary dose of the wine would be wholly inappreciable in the presence of the alcohol. It is plain that the only conceivable motive for such a combination must be the erroneous notion that extract of beef is capable of doing duty as a food.

Extract of malt is a valuable preparation, but when I prescribe it I like to know how much of it my patient will get. I doubt very much whether an adequate dose of it can be contained in a wineglassful of the very mobile fluid which is sold as beef and malt wine. Nor do I see any reason to suppose that its powers for good are likely to be improved by mixing it with an unknown proportion of an alcoholic liquid.

Lastly, we have to consider the port wine. I shall not here express any opinion as to the therapeutic value of genuine port, but I believe that those of my professional brethren who have the strongest faith in its virtues most earnestly insist on the necessity of securing the real fermented juice of the grape. It is notorious that much spurious wine is in the market, and that it is extremely difficult, with the greatest care, to obtain an undoubtedly genuine article even when a high price is not grudged. I do not know where the makers of beef and malt wine get their supplies, so I am not in a position to make any positive statement about the genuineness (or otherwise) of their "vintage," but I may mention some facts which appear to me to bear on the probabilities of the subject. The proprietors of the best known (because most extensively puffed) beef and malt wine have twice sent out circulars to the medical profession offering debentures at a high rate of interest. This was done avowedly with the design of interesting the profession in the sale of the article. I have myself received from the same company at different times more than a dozen sample bottles of their wine, and I have no reason to suppose that I have been more liberally treated than the rest of my brethren. I simply ask, what must be the profit on the sale when it is able to cover the cost of this enormous distribution of samples and of the profuse advertising which is done, and then leave enough to pay an exceptionally high interest on the debentures and dividends to the shareholders presumably at a still higher rate? I suggest no inference from these facts, but "I speak as unto wise men; judge ye what I say."

If we believe that any of our patients are likely to derive benefit from malt extract by all means let us prescribe it—

SOCIETY FOR IMPROVING THE CONDITION OF THE LABOURING CLASSES.—The fifty-second annual meeting of the Society for Improving the Condition of the Labouring Classes was held at No. 8, Southampton-row on June 26th, the Right Hon. Evelyn Ashley presiding. The report showed that £1000 of the loans raised for the purposes of the society's work had been paid off during 1895 and the early part of the present year. The committee were at present considering the establishment of a boarding house for young men. During 1895 there was an average population of 573 in the society's buildings, and there were five deaths. The income exceeded the expenditure by £960.