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THE

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ORIGINAL ARTICLES AND COMMUNICATIONS.

NOTES ON FEMALE RISKS.

A paper read by James Thorburn, M.D,, Medical Director North America Toronto, Can., at the 9th Annual Meeting of the Association of Life Insurance Medical Directors. Montreal, July 6th and 7th, 1898.

In view of the ever-increasing number of females who are seeking employment and who are wage earners, the question of the value of female life for purposes of life insurance is one which, of recent years, has been prominently brought to the notice of medical directors of life insurance companies. Fifteen or twenty years ago the number of female risks undertaken was very few compared with those at present assumed, and where insurance was sought by the gentler sex an empirical extra premium was charged, or the risk was immediately declined. In fact, it is the custom of some companies even now to reject applications for life insurance on females. Men are no longer the sole wage earners; women now engage in many of the pursuits and callings that men are employed in. They are frequently compelled to sustain themselves or contribute to the support of a household; they may also have to make future provision for themselves or for others. When we look around at the different avenues which have been opened up for female service, when we see women teachers, stenographers, typewriters, nurses, saleswomen, clerks, bookkeepers, merchants, milliners, dressmakers, artists, designers, authors, agents, artisans, printers, physicians, preachers, etc., etc., it must be very evident that they are entitled to the benefits of life insurance to a very appreciable extent.

It has been stated, and I think with considerable force, that every life which earns money has a financial value, the failure of which life represents so much capital lost and the replacement of which can be most effectually secured by life insurance. If this be admitted, there can be no question but that females are entitled to the benefits which the beneficient system of life insurance grants. That there are difficulties surrounding the insuring of females must be evident to everyone who has given the matter careful consideration and who has had practical experience. The conditions of female life are entirely different to those of male life, and upon first consideration the inexperienced might claim that life insurance was never intended for women, except in so far as they should benefit directly by the death of the assured. That this is entirely fallaci-

ous needs no argument on my part, but I think that it may be at once accepted that there is at the present day, among a certain class of females, as important need for life insurance as exists among the sterner sex.

In these notes I propose to refer (1) to the experience of life insurance companies in respect to female mortality and their experiences; (2) to the conditions attendant upon the insuring of female risks; (3) to the companies' practice in granting policies to such persons, and to conclude by a few practical observations.

(1.) EXPERIENCE OF LIFE INSURANCE COMPANIES.

(a) JOHN HANCOCK, MUTUAL LIFE, 1863 to 1883.—It is pointed out that the number of female risks was too small to render the company's experience of value for statistical purposes. The results, however, showed that the company's experience regarding female risks was not satisfactory, and that the usual extra premium of ½ per cent. charged on such risks was none too high.

(b) CONNECTICUT MUTUAL LIFE, mortuary experience, 1846 to 1878.—For age groups 7 to 45 the death rate was largely in excess of the death rate of that of male lives and of the table rate; while for age groups 46 to 80 the death rate is below that for male lives as well as below that of the table rate.

(c) PROVIDENT LIFE AND TRUST, mortuary experience, 1866 to 1885.—The experience shows that the death rate among females is higher than among males; the figures go to show that above age 50 the female lives are better than male lives, but at younger ages are worse, are particularly so under the age of 20.

(d) NEW ENGLAND MUTUAL LIFE, mortuary experience, 1863 to 1892.—This company's experience when compared with similar female experiences was favorable, but when compared with the company's male experience indicates that female life was not so favorable as male life and that there was a marked selection against the company under policies of more than average amount.

(e) AUSTRALIAN MUTUAL PROVIDENT SOCIETY, mortuary experience, 1849 to 1888.—It is the practice of this society to add a loading of three years to the ages of all females within the child-bearing period. Where the assumed (or increased) ages are dealt with, the actual deaths among females are considerably less than the number expected, according to the society's general experience; even when only healthy lives are dealt with, the actual mortality among female lives is not materially in excess of that among male lives.

(f) Institute of Actuaries Experience, 20 British offices and 30 American offices' experience.—Both of these extensive experiences indicate that female mortality between 20 and 45 is greater than male mortality between these ages, but that female life after age 45 is more favorable than male life after that period.

(g) Ten Scottish Assurance companies' experience, 1815 to 1863.—This experience demonstrates that the difference between mortality of males and females is much greater in insured life records than among the gen-

eral population. Out of an equal number of males and females alive at age 10, it is shown that a larger number of females die up to age 45. Thereafter the males suffer the greater mortality.—(J. I. A. XIX., 200.)

(h) METROPOLITAN LIFE INSURANCE SOCIETY, England, mortuary experience 1835 to 1890.—Female lives were shown to be, on the whole, superior to male lives; an experience at variance with that of most offices.

(i) SCOTTISH EQUITABLE LIFE (J. I. A. XXI., 226).—The number of females that entered into the experience was 2,205 and the total years of life 30,521; the number of deaths was 668, and the average time for which the lives were under observation was nearly 14 years. While the number was somewhat small, the experience was described as an unusually mature one. The deaths which were compared with those that might have been expected, according to the usual British Standard of Healthy Male Lives, namely, Institute of Actuaries Healthy Males table, to ascertain whether the mortality among females differed so materially from that among males as to justify the extra premiums of $2.50 per $1,000 up to age 50, so usually charged by British companies. The results showed that from 27 to 45 female mortality exceeded the expected, according to the standard adopted, and that under 27 the experience was favorable. It was calculated that the excess of mortality between 27 and 45 would be met by an annual charge of 2 shillings and 10 pence per 100 pounds. From ages 46 to 55 the female mortality was almost exactly the same as the standard adopted; while from ages 56 to 58 the female mortality was considerably less than that of the standard.

(j) German female mortality.—The GERMANIA, a prominent German life insurance company, notable in its own country for writing female risks, made an investigation of its experience. No marked increase of mortality was revealed as arising from undue proportion to sexual maladies, the fatalities having a general etiology. The insured were mainly married, of the middle or higher class; 65,145 lives were included in the observation. The average insurance duration was 7.15 years. Below is given, for every second age up to 40, and for every second age from 52 to 60, the death rate of this company, together with the death rate for female lives in the German Empire.

Age.	Germania Company, female lives.	Female lives, German Empire.	Age.	Germania Company, female lives.	Female lives, German Empire.
20	.94	.61	36	1.32	1.14
22	1.05	.70	38	1.27	1.19
24	1.16	.78	40	1.15	1.22
26	1.17	.85	52	1.67	1.80
28	1.09	.91	54	1.82	2.03
30	1.25	.97	56	1.98	2.33
32	1.17	1.02	58	2.31	2.75
34	1.12	1.08	60	2.84	3.29

(k) French assured lives (J. I. A. XXXIII., 485).—A short time ago four chief life insurance companies in France combined in compiling their mortuary experience. The experience was taken out in respect to assured lives and annuitants. The result, so far as assured lives were concerned, showed (1) that the mortality, especially at the younger ages, is appreciably higher than that of English female assured lives, and (2) that

for whole life insurance the premiums were actually less when compared with premiums for French male assured lives. This, however, does not infer that for all ages the expectation of life of the female exceeds the male. The fact is (1) that French female lives have a less expectation of life than French male assured lives, up to age 30, beyond that age the female life has an increased expectation of life. The following table gives the exact figures for quinquennial ages 20 to 85, inclusive:

Expectation of life of French assured lives:

Age.	Male.	Female.	Age.	Male.	Female.
20	42.06	40.82	55	16.96	18.19
25	38.41	37.41	60	13.83	14.85
30	34.68	34.50	65	11.01	11.77
35	31.02	31.45	70	8.50	9.08
40	27 40	28.25	75	6.38	6.93
45	23.79	24 99	80	4.72	5.45
50	20.31	21.62			

Mr. MASSE (J. I. A., XXIX., 71), a French writer, points out, (1) that among the great body of British assured lives, according to the British Institute of Actuaries' experience, a greater mortality exists among females than among males. (2) That the same feature is observed in the German experience, and in the experience of the 30 American offices. (3) That these facts show (a) that up to age 45 the mortality of males is lower than that of females, and, (b) after 45 years of age that the reverse is the case. He states that the main causes of the extreme mortality among females under 45 is due to the risks and diseases peculiar to females: phthisis, anemia, etc., etc. The American statistics (30 American offices) indicate other diseases. The same writer states that German companies add three years to the age of female lives insuring before age 45 and remove the extra after that age.

(1) The following table applies to the expectation of life of the population of Victoria, N. S. W., which is somewhat remarkable in that it indicates for each year of age a considerably increased expectation of life for the female when compared with the male:

Age.	Male.	Female.	Age.	Male.	Female.
15	45.21	47.46	40	26 21	28.70
20	41.05	43.31	45	22.74	25.24
25	37.20	39.46	50	19.43	21.80
30	33.49	35.81	55	16.33	18.39
35	29.80	32.21	60	13.44	15.12

(Am. Ex. & Rev., 1894.)

I think the general opinion to be obtained from these various experiences is that female assured life below age 45 is not so favorable as male life, but that after the latter age it is more favorable, and probably that female vitality considered for all periods of life is greater than male vitality. The late CORNELIUS WALFORD (J. I. A. XIX., 174), a British actuary of note, made a very exhaustive examination some years ago of the experiences deduced from time to time in respect to female mortality, and concluded that female lives were not inherently bad, but on the whole, they were better than male lives. He admitted, however, that assured female lives were inferior to male assured lives, and gave as the reason that not only could this be attributed to insufficient medical exami-

nation, but that selection against the office, partly intentional (and perhaps partly involuntary), certainly often involuntary, so far as the lives themselves are concerned, was the real solution. He stated that the main causes are to be traced to the circumstances which gave rise to the insurance of female lives; for instance, under marriage settlements, where the mother frequently has a life interest in the funds settled and on her death it passes to her children,—if the wife shows any signs of delicate health insurance is secured, otherwise, no insurance is contemplated.

It has sometimes been stated that the risks of child birth furnish the solution of the extra mortality of assured female lives, and in this connection it might be interesting to note what is the effect of marriage on female life, both during the period of childbirth and after that period has passed.

The annual report of the Registrar General of Scotland (J. I. A. XXII., 233), enables us to determine this. Arranging the female lives into two groups, (1) females at the ages when they are capable of bearing children, and (2) females past the child-bearing age, viz., 45 to the close of life. It is observed that the high mortality of females is limited to the child-bearing age, 15 to 45, whereas above that age the married female dies at a considerably lower rate than the unmarried female. Comparing the mortality of married and unmarried females at every quinquennial period of life, the high death rate of married females appears to be confined to the ages under 30; from 30 to 35 and 35 to 40 the death ratio of the married females falls below that of the unmarried. It has also been proven that the excess of mortality in the married female as compared with the unmarried at the same age, is almost solely due to the superadded dangers attending the birth of the first child. The married female even during the rest of her child-bearing life, has an equal chance of life with the unmarried, and has a better chance of life than the unmarried after she has passed her 30th year. It is found that the married female dies at a higher ratio during the three quinquennial periods of life, 15 to 30 years, but during the latter portion of her child-bearing life, when the half of her children are born, viz., 30 to 40 years of age, the married die at a lower rate than the unmarried. At the age when the usual "change of life" occurs, viz., 40 and 45 years, the mortality of the married female again slightly exceeds that of the unmarried; a result which might have been expected, seeing that the fatigues of child birth and the hard labor connected with the nursing and rearing of a family somewhat weakens the system and renders the crucial period of life somewhat more trying to the married than to the unmarried woman. From that period on to old age, viz., 75 years, the married and widowed die in smaller proportion than the unmarried. The higher death rate suffered by the married females from 15 to 30 years of age is, in all probability, caused by the greater dangers of life which in a civilized state attends the bearing of the first child. Every medical man knows that the risk to a mother is far greater at the birth of her first child than at any subsequent delivery, and that the danger is greater just in proportion to her delicate uprearing. The following table will render these views almost a certainty. It shows the number of mothers at each quinquennial period of life who

gave birth to children in Scotland in 1855 and the number and proportion of those at each age who gave birth to their first child.

Ages of mothers.	Total number of mothers.	No. bearing first child.	Perc't. bearing first child.
15-20	2,589	1,424	55.00
20-25	19,230	7,650	39.78
25-30	25,679	4,448	17.32
30-35	21,317	1,502	7.04
35-40	15,070	544	3 61
40 and above.	7,153	54	.75
All ages	91,038	15,622	

From this it appears that it was only at the ages when a very high proportion of the married women were giving birth to their first child that their death rate rose higher than that of the unmarried, but the moment that age was attained when the great majority of the married women had got over the birth of the first child, viz., about 30 years of age, the mortality of the married women fell below that of the unmarried.

Mr. MESSENT (J. I A. XIX., 206), a British actuary, stated that if the registers of lying-in institutions of Great Britain were examined, and also the works of medical men who had devoted attention to the subject, it would be found that the risk of child-bearing is much overrated, while in insured lives the fact is that the mortality among females is not so high as among males, but that the defect in the female life exists partly in the causes which produce the insurance and partly in the way in which the medical examinations are made. He suggested that no examination be made of a female unless the person examined be accompanied by another female. The medical men are unable to ask a female, when alone, questions which they would be able to ask a male candidate. Mr. SMEE (J. I. A., XIX , 203), also a British actuary, after making an examination embracing 16,000 cases of midwifery, stated that the mortality of females is higher in the first birth and gradually diminishes until the fourth birth. It is believed that death frequently occurs from consumption, which no amount of medical examination could reveal ; in some cases there is no trace of consumption before the birth of a child, and yet within two months thereafter the woman dies from the disease. The cause of mortality among women who have no children, to a larger extent than among those who have children, is "cancer uteri," which not infrequently happens about the age of 42. Mr. HART, of the SCOTTISH EQUITABLE SOCIETY, after making an examination of the mortality of married females of the peerage, intimated that he believed that insurance on the female life should be considered with regard to the time she had been married, and that it would be advisable in the case of an unmarried woman to stipulate for an extra premium on marriage. This, however, would hardly be practicable. The heaviest mortality was found to exist in the second year after marriage, but some statistics showed that this ocurred in the first year after marriage.

Some time ago I wrote to the life insurance companies of the United States and Canada asking them what was their practice in respect to the insuring of female risks, and I beg now to thank the medical directors of

these companies, personally, for their kindness in promptly replying, and for giving me the information desired. It will be interesting and profitable to record briefly the methods which life insurance companies employ in dealing with this class, but before doing so I think it important to preface these rules by a extract from a communication of Mr. BENJAMIN F. STEVENS, President of the NEW ENGLAND MUTUAL LIFE, published in "Mortality Experience on Female Risks" compiled by that company.

"Experience shows that insurance upon lives, whether male or female, in which no pecuniary interest appears to exist on the part of those who are to be benefited, is in general a loss to the company, being speculative in character, and therefore more hazardous than ordinary risks in which an interest really exists. Thus, a widow left with a family depending upon her exertions for support is a case clearly insurable, and, it is believed, never objected to. Or a woman persecuted with an idle or dissolute husband may in certain places contract debts and enter into trade upon her own account for the support of her family. But the relationship alone does not create a pecuniary or insurable interest. In general terms, therefore, no policy will be issued by this company upon the life of any person, male or female, unless there is manifestly an insurable interest on the part of the beneficiaries. As at present advised, the insurable interest must, in the case of a woman, be founded upon an income depending upon her life, which may come in either of two ways: (1) by property left in trust for her benefit, the income of which expires or reverts to parties outside of her immediate family at her decease, in which her husband and children are pecuniarily interested; (2) by her own exertions in the support of her family, induced thereto by circumstances before mentioned. Where such insurable interest clearly exists no one can be benefited by the death of the assured beyond the amount of that interest, and therefore there is no inducement to fraud. If the insurable interest is ignored and policies made haphazard the beneficiary has an interest in the death of the assured, and not in the life, thus offering a direct incentive to crime. The company takes the ground that insurance in any form is indemnity for loss, and there can be no loss where no interest exists. Fraud is more easily perpetrated in the case of women than in men, because of the peculiarity of many complaints with which they are affected, and when concealment of the fact is so possible it is in itself an inducement for unscrupulous persons to obtain insurance."

I also think it important to quote the following in respect to insurable interest, contained in a circular letter of JOSEPH A. DEBOER, secretary of the NATIONAL LIFE INSURANCE COMPANY, which will elucidate the question of insurable interest, which plays such an important part in the treatment of female risks.

"An insurable interest may exist in applicants of both sexes, whether single or married, and of whatever age. In the young and in women as a class, it is not so great as in men, and, for that reason, requires a statement of facts to make it clear. Financial irresponsibility and dependence have been safely regarded as implying moral hazard in the insurance of life. Because these things more truly describe all women than all men, the fact of an insurable value or interest must be looked at carefully, when women apply.

"All which it seems necessary to show in order to take the case out of the objection of being a wager policy is, that the assured has some interest in the life of the '*cestui que vie*' ('beneficiary'); that his temporal affairs, his just hopes and well-grounded expectations of support, of patronage and advantage in life, will be impaired; so that the real purpose is not a wager, but to secure such advantages supposed to depend on the life of another."—*Shaw, C. J.*

"It is not very easy to define with precision what will in all cases constitute an insurable interest, so as to take the contract out of the class of wager policies. It may be stated generally, however, to be such an interest, arising from the relations of the party obtaining the insurance, either as creditor of or surety for the assured, or from ties of blood, or marriage to him, as will justify a reasonable expectation of advantage or benefit from the continuance of his life."—*Field, C. J.*

Following these definitions, it is reasonable to conclude that blood relationship, or that of marriage, presupposes an insurable interest in law; but for life insurance purposes the test of this interest is a money valuation. If the latter is wanting, insurance would be speculative.

ÆTNA LIFE INSURANCE Co., Hartford, Conn. Up to the age of 55, $5 per $1,000 is charged. No extra charge if insurance is on endowment plan for 20 years or a less number of years. If the husband is insurable it is essential that his life also be insured. Especial care exercised in the admission of females.

BERKSHIRE LIFE, Pittsfield. Before receiving applications on the life of females, advance information required, embracing among other things the following: Name, residence, occupation, particulars of date and place of birth, race, height, weight, insurance at present carried by applicant, married, single or widow, husband's name and occupation, number of children applicant has had, their names, ages and number now living; amount and character of insurance desired, if declined by any company, the date and name of the company, proposed beneficiary, name of person who is to pay the premium, what property applicant has in her own right, and estimated value.

BROOKLYN LIFE INSURANCE Co., New York City. An extra premium was formerly charged; now females taken at same rate as males. but for limited amounts; essential that proper insurable interest exists: as a rule, policy will not be granted where the beneficiary is the husband.

CONNECTICUT GENERAL LIFE INSURANCE Co., Hartford, Conn. Abandoned the practice some years since of charging an extra premium; accept females at same premium rates as males; insurable interest essential.

EQUITABLE LIFE INSURANCE SOCIETY, New York City. Charge same rates for females as for males; insurable interest essential. Females placed in a class by themselves in order to demonstrate by actual experience whether the old charge of $5 per $1,000 is justifiable or not.

GERMANIA LIFE INSURANCE Co., New York City. Females accepted at the same rate as males. Essential that husband shall also carry insurance. There must be a record as to parturition. Policies will not be granted in favor of husbands. Especial attention is paid to normality of sexual functions.

HOME LIFE INSURANCE CO. Single women, or married women, having given normal birth to a child, charged an extra premium of $5 per $1,000, except on the 10, 15 or 20 year endowment plans. After climacteric period is passed, the extra premium is waived. Insurable interest essential. Husbands cannot be made beneficiaries. Applications will not be accepted from an applicant while she is pregnant until three months have elapsed after the normal birth of the child.

LIFE INSURANCE COMPANY OF VIRGINIA, Richmond, Va. Amount of insurance limited. If married, and husband alive and insurable, he must be insured in some company for an equal amount of insurance to that applied for. Beneficiary assumed to have insurable interest. No extra charge where 20 year endowment plan is selected, or plan involving a higher premium than called for by that policy. On other plans an extra premium of $5 per $1,000 is charged, ceasing after the age of 48. Pregnant women are not insured until 60 days after confinement.

JOHN HANCOCK, MUTUAL LIFE INSURANCE CO., Boston, Mass. Accept female risks without any restrictions.

STATE MUTUAL LIFE ASSURANCE CO., Worcester, Mass. Females accepted on same terms as males for limited amounts. Young married women or young unmarried women who have never borne children, not considered desirable.

MUTUAL LIFE INSURANCE COMPANY, OF NEW YORK. Female risks accepted on the same terms as male risks.

MUTUAL BENEFIT LIFE INSURANCE CO., Newark, N. J. Declines to insure female applicants.

MICHIGAN MUTUAL LIFE INSURANCE CO., Detroit. Declines to insure female risks.

METROPOLITAN LIFE INSURANCE CO. Females accepted on the same terms as males, on 10 payment life plan, and 10, 15 or 20 year endowment plan. An extra premium of $5 per $1,000 is charged on the ordinary life and 20 payment life plan, until the age of 49 has been attained. Essential that the purpose of insurance be clearly shown, and that the moral hazard is without question. The amount of insurance granted on individual lives depends upon circumstances.

MASSACHUSETTS MUTUAL LIFE INSURANCE CO., Springfield. Females insured on the same plans and at the rates for males; great care exercised to see that the beneficiary has an insurable interest on the life insured. Seldom grant policies on the life of married women more or less dependent on their husbands for support.

MANHATTAN LIFE INSURANCE CO., New York. Decline to insure females where there is no definite insurable interest involved; where husband is beneficiary, application not accepted, except where he is dependent on the continuance of the wife's life for support, or would be deprived of her property at her death. Those who have passed the climacteric are accepted at the same rates as male applicants, except on certain low premium forms of insurance. An excess of mortality arising from the insuring of females is made a charge against dividends under the policy. Married women who have not passed the climacteric and have had a child or children will be granted 20 year endowment assurance without extra,

or on other plans involving a lower rate with an extra charge of $5 per $1,000. Married women who have had no children and unmarried women are accepted on the 20 year endowment plan with an extra premium of $5 per $1,000, or on plans involving a lower rate with an extra premium of $10 per $1,000. The amount of the insurance is limited, and the applicant must be not less than 18 nor more than 60.

NORTHWESTERN MUTUAL LIFE INSURANCE CO., Milwaukee, Wis. Declines to insure female risks.

NEW YORK LIFE INSURANCE CO. Accept female applications at the same rate as male applications, provided the beneficiary has a clear insurable interest in the life insured.

NEW ENGLAND MUTUAL LIFE INSURANCE CO., Boston, Mass. Accept females on the same plans and at the same rates as males. Essential that the beneficiary shall have insurable interest in the life insured.

NATIONAL LIFE INSURANCE CO., Montpelier. Accept females on the same plans and at the same rates as males, with certain exceptions: (1) women under 20 years of age; women in pregnancy; women in lactation; married women until after the birth of the first child, or until five years after marriage, are not eligible. The following cases would be considered doubtful and invariably require explanation: (1) Women applying for the benefit of their husbands. (2) Women applying for the benefit of strangers. (3) Women who are not self-supporting or in receipt of an income. (4) Women over 45 and who have not passed the period of menopause.

PRUDENTIAL INSURANCE CO., Newark. An extra premium (not stated) charged upon unmarried females, unless they apply for endowment assurance, in which event no extra is charged. This extra is not imposed upon married women, provided their husbands apply at the same time for insurance; on all other cases the extra premium is charged.

PROVIDENT SAVINGS LIFE INSURANCE SOCIETY.—Females accepted at the regular rates of premiums for certain limited payment life policies, endowment policies and, in exceptional cases, whole life policies. Where the life proposed for insurance is over 50 the life will be accepted on the 20 year renewable term plan. The amount of insurance is limited. It is essential that the beneficiary shall have an insurable interest in the life proposed for insurance. The society will not consider applications for insurance from domestics, ordinary laborers, or ignorant or illiterate females or cases in the rural districts. Special questions are proposed, covering among other things the following: Has the woman property in her own right which is her source of income? Will she pay the premium herself? Is the amount proportionate to her means? If married, husband's name, occupation and address must be given. Is the husband insured? If so, for whose benefit? The motive for the insurance and full details of interest of beneficiary in the applicant's life.

PHOENIX MUTUAL LIFE, Hartford, Conn. Accept females at the same rates as males. The company exercises somewhat more thorough discrimination, and declines to insure during pregnancy and lactation.

PENN MUTUAL LIFE INSURANCE CO., Philadelphia, Penn. Married women over 30 who have not given birth to a child will not be accepted until the expiration of five years from the date of marriage.

Between ages of 20 and 30 only two years will require to elapse. Under the age of twenty each case will be considered on its own merits. Two months must elapse after the birth of a child before application will be considered. Applications on the lives of women under 18 will not be accepted.

PROVIDENT LIFE AND TRUST, Philadelphia, Penn. Women accepted at the same rates as men. Great care exercised in selection. Will not accept during pregnancy, or until reasonable time after child birth. Record as to menstrual and maternal functions must be clear.

TRAVELERS' INSURANCE Co., Hartford, Conn. An extra premium of $5 is charged up to age 48 on the ordinary life, limited payment life and endowment plans of longer term than 20 years; no extra is charged on the 10, 15 and 20 year endowment plans.

UNITED STATES LIFE INSURANCE Co. Females are accepted on all plans and at the same rate as males, excepting on the term plan, under which an extra premium of $5 per $1,000 is charged up to age 48. Insurance on the lives of married women will not be granted except in favor of their children, unless the husband or other proposed beneficiary has a direct financial interest in the life of the applicant. Special inquiry made as to the surroundings, associates and moral condition generally.

UNION MUTUAL LIFE INSURANCE Co. Females accepted on the same plans and at the same rates as males for limited amounts, excepting female factory employees, to whom will be granted only 15 year endowment policies.

UNION CENTRAL LIFE INSURANCE Co., Cincinnati, Ohio. Females accepted on all participating plans at the same rate as men. Amount of insurance limited. Rules more strict with females than with males.

WASHINGTON LIFE INSURANCE Co., New York. Require all female applicants to be examined by women physicians where possible. Women physicians have been appointed at all points in the United States in which they can be found. Essential that beneficiary shall have insurable interest. Investigation being made by the company in respect to female risks insured by it. Settled policy not yet decided upon.

CANADA LIFE ASSURANCE Co., Hamilton. Does not accept applications on the lives of females.

CONFEDERATION LIFE ASSOCIATION, Toronto. Accepts females with an extra charge of $5 per $1,000 up to 50 years of age, except on short endowments and 10 payment life plans.

DOMINION LIFE INSURANCE Co. Females accepted on all plans after age 50 has been attained; previous to that age will accept on all plans except ordinary life.

FEDERAL LIFE ASSURANCE Co., Hamilton. Accept females at same rates as males on the 20 payment life plan and on all other plans involving a higher premium rate per $1,000. On plans involving a lower premium rate than 20 payment life plan an extra premium of $5 per $1,000 is charged.

GREAT WEST LIFE ASSURANCE Co., Winnipeg. Women are insured on ordinary rates where the beneficiary has a direct insurable interest in the

life assured and where they have an income of their own. Those who desire insurance as a means of investment are taken on the endowment plan (presumably at ordinary rates). Husbands will not be made beneficiaries.

London Life Assurance Co., London Ont. Females are charged an extra premium of $1 to $3 per $1,000, according to the plan of insurance, the lesser extra premium applying to short term endowments and the greater to long term endowments.

Manufacturers' Life Assurance Co., Toronto. If unmarried or married, and after the birth of the first child, an extra premium of $5 is charged on the ordinary life plan; no extra is charged on limited payment life and endowment plans. Married and before the birth of one child an extra premium of $10 per $1,000 is charged on ordinary life plan, and $5 per $1,000 on limited payment life and endowment plans. After the age of 48 no extra premium is charged. The amount of insurance is limited where the age is under 48, and no females will be accepted on the term plan.

Ontario Mutual Life Assurance Co., Waterloo. Accepts women from ages 20 to 50 on 10, 15 and 20 payment life plans and on any form of endowmont not exceeding 25 years' duration; after the attainment of age 50 will accept on any plans at ordinary rates.

Royal Victoria Life Assurance Co., Montreal. Females are accepted on all the ordinary plans without an extra premium excepting on the without profit plans and on term insurance. The amount of the insurance is limited and the beneficiary must be a child of the insured. In cases of unmarried women, each case would be rigidly scrutinized before acceptance.

Sun Life Insurance Co. An extra premium of $5 is charged on female lives under the age of 50; exceptions occasionally made on endowment policies on widows and married women where the insurance is taken out chiefly for the investment of money.

Standard Life Insurance Co., Canadian Office, Montreal. Discourages agents from canvassing for female risks. When applications are received, however, the risks are accepted at the same rates as male risks. No extra is charged in the case of married women if one child has been born. If applicant has been recently married, an extra of $10 per $1,000 is made until the first child is born. If there are no children the same extra is charged up to four or five years after marriage.

The Scottish Life Insurance Companies (J. I. A. XIX., 209) associated some time ago and determined after very careful consideration to charge an extra premium of 5 shillings per cent. per annum on the sum assured, that is $2.50 per $1,000 until age 50 was attained; after that age the extra was discontinued. If the applicant be pregnant for the first time, it was thought that circumstances might exist, not discoverable to the company's medical examiner, involving an unusual risk in the confinement, which may have led to proposal for insurance being made; an additional $5 per $1,000 for the first year was suggested.

British and Irish Life Insurance Companies (J. I. A. XXIX., 75). Some years ago a circular letter was addressed to all the British and Irish

life insurance companies in respect to their practice, and answers were asked to certain questions; the following is a synopsis of the answers; Question (a). The additional premium, if any, charged for unmarried women.

1 company accepts no females.

46 companies charge no extra, but 2 require payment of $10 per $1,000 on marriage, and 1 an extra premium of $5 on first confinement.

22 companies charge an extra of $2.50 per $1,000.

15 discontinue the charge at age 50, 1 at 45, 6 continue for all time.

2 companies make an addition of 10 per cent. to the premium for all time.

6 companies charge single premiums (5 of $10 per $1,000, 1 of $5 to $10 per $1,000).

1 company uses special table.

Question (b). Married women who have borne no children.

1 company does not accept females.

41 companies charge no extra, (1 an extra of $2.50 if under 30; 1 an extra of $5 at first pregnancy, 1 an extra of $10 if in first marriage year.)

21 companies charge $2.50 per $1,000 extra, 15 discontinue charge at age 50, 6 continue to charge.

2 companies charge 10 per cent. extra, 1 company uses special table.

Question (c). Married women who have borne children.

1 company does not accept females.

52 companies charge no extra. (1 charges $2.50 per $1,000 if under 30).

21 companies charge an extra of $2.50 per $1,000, 15 discontinue charge at 50, and 6 continue to charge extra premium).

2 companies charge 10 per cent. additional to premium, 1 company charges single extra premium of 10 per cent., 1 uses special table.

Question (d). Married women who are pregnant first time.

In many cases application is postponed and in others extra single premiums ranging from $5 to $30 per $1,000 are charged.

After very carefully considering the subject of insuring females, I think that all experience obtained and information gathered would indicate (1) that up to age 48 the female risk is not as good as the male risk; (2) that after the age of 48 the female risk is better than the male risk; (3) that the greatest danger in married females is in connection with the birth of the first child; (4) that the moral hazard is probably the most important factor in the question: (5) that females are more apt to conceal important facts than male applicants are; (6) that it is impossible to secure as complete an examination of the female as of the male.

I beg to offer the following suggestions for your consideration in respect to the insuring of female risks.

(1.) MARRIED WOMEN.

(a) A woman who is pregnant is uninsurable until three months have elapsed since successful delivery; also married women until after the irth of their first chid, or until five years after marriage.

(b) The beneficiary must have a good and clear insurable interest in the life proposed for insurance, and the object for which the insurance is sought must be satisfactorily and definitely set forth. If the person applying for insurance has a family, the beneficiary or beneficiaries must be her child or children. Under no circumstances will a policy be issued in favor of a husband, unless it can be unmistakably shown that he is dependent upon his wife for support, or that in the event of her death he will suffer financial loss, either by property or support.

(c) The husband, if alive and insurable, must be insured in some company for at least as large an amount as the proposed policy on the life of his wife.

(2.) UNMARRIED WOMEN.

(a) The beneficiary must have a good and clear insurable interest in the life proposed for insurance, and the object for which the insurance is sought must be satisfactorily and definitely set forth.

(b) Unmarried women, unless money producers, are not deemed desirable risks from a moral standpoint.

(3.) GENERAL.

(a) Policies should not be granted to married or unmarried women on any of the without-profit systems of insurance, except on 10, 15 or 20 year endowment plan, nor on any term plan of insurance

(b) The company's risk on any single female life should be limited—perhaps not more than one-third of the full amount should be undertaken.

(c) In every case of a female applying for insurance, a special form should be completed and sent to the head office with the application and medical examiner's report.

(d) In the event of an agent having doubt as to whether an applicant will be accepted by the company, on account of the moral hazard, he is requested to complete the special form and transmit it to the head office for consideration. If satisfactory, the office will advise him to have the medical examination proceeded with.

(e) The medical examiners should be specially instructed to exercise the greatest precaution and make a thorough examination of the applicant, endeavoring to elicit any peculiar circumstances which may be connected with the moral hazard of which the company should be informed.

SPECIAL FORM.

1. Applicant's name.
2. Residence.
3. Occupation.
4. Place of birth.
5. Date of birth.
6. Unmarried, single or widowed.
7. If married; husband's name.
8. His occupation.

9. Number of children had.
10. Number now living.
11. Their ages and sex.
12. Their occupations.
13. Name of beneficiary.
14. Relationship.
15. Motive for insuring.
16. Whether beneficiary is dependent upon applicant.
17. If so, give full particulars.
18. Name and particulars of person to pay premium.
19. State source of income.
20. Amount of insurance.
21. Style of insurance.

The above questions should be answered and submitted to the office before any further action is taken.

FACULTIES FOR CLINICAL STUDY OFFERED TO QUALIFIED MEDICAL MEN BY THE LONDON SCHOOLS OF MEDICINE.

On and after the 1st of May, 1898, joint cards of admission will be issued to the Clinical Instruction of the following Metropolitan Hospitals and Schools of Medicine :—

Charing Cross, Guy's, King's College, Middlesex, St. George's, St. Mary's, St. Thomas's, University College and Westminster.

These cards will be available for qualified Medical men (British, Colonial or Foreign) only; and will be issued at the following rates :—

For three months, seven guineas; for six months, ten guineas; and for any longer period at the further rate of five guineas for each additional six months.

The cards and further particulars may be obtained on application to the Honorary Secretary, West Wing, Examination Hall, Victoria Embankment, London, W.C.

Evidence of qualification must be furnished at the time of making the application. Many of us have been wondering when some special organization would be attempted in the way of Post Graduate work in London, a medical centre enjoying possibilities for the studious such as perhaps exist no where else in the world. This is at least a welcome beginning; and it is not likely that over there the authorities will go the length in the way of "spoon feeding" that is in vogue in some other well known centres. They are likely to leave the enquirer more to himself, after placing at his disposal the enormous mass of clinical material under their control. Unless some arrangement is made, by which, during the summer season, some of the leading physicians and surgeons of the metropolis can be seen and heard, the movement towards consolidation and systematic post graduate teaching will fall much short of its possibilities.—ED.]

MEDICINE.

IN CHARGE OF

N. A. POWELL, M.D.,

Professor of Medical Jurisprudence and Lecturer on Clinical Surgery, Trinity Medical College; Surgeon to the Hospital for Sick Children, and to the Emergency Branch, Toronto General Hospital; Professor of Surgery, Ontario Medical College for Women. 167 College St.; and

WILLIAM BRITTON, M.D., 17 Isabella Street.

STATE AND MUNICIPAL CARE OF CONSUMPTIVES.*

BY S. A. KNOPF, M.D., NEW YORK.

MR. PRESIDENT, MEMBERS OF THE CONFERENCE OF STATE AND PROVINCIAL BOARDS OF HEALTH OF NORTH AMERICA: Your invitation to address you on the important subject of State and municipal care of consumptives, extended to me as one of the general profession in no wise connected with any State, provincial, or city board, has been a pleasant surprise to me. While I thank you for the high honor you have conferred upon me individually, I feel deeply the significance of your generous act, being fully aware that you wished above all to honor thereby the general medical profession. There has been of late years growing up in some parts of the country a certain antagonism between the appointed sanitary authorities and the profession at large. Your wish to listen to a humble representative of that great body of American physicians who are on the other side of the camp, who occupy no official position, who are, in other words, simply practising their profession, is perhaps the best evidence of your earnest wish to co-operate with the general profession in all that concerns the interest alike of patient, physician, and the public health.

For this I thank you, because it makes my task easier. To my mind there is nothing more difficult than to talk about tuberculosis, its cure or its prevention, without taking as the basis of one's discourse the absolute assurance of the co-operation of the general profession and the sanitary authorities. So in this spirit of harmony let us unter upon the consideration of our subject proper.

In a paper, on the prophylactic treatment of pulmonary tuberculosis, read before the American Climatological Association at the meeting of the last medical congress in Washington, in 1897, I said: "To prevent pulmonary tuberculosis we must begin with treating the child *in utero*."

Mr. President and gentlemen, the State and municipal care of consumptives must also begin with the child *in utero*.

*Address delivered by invitation at the thirteenth annual meeting of the Conference o State and Provincial Boards of Health of North America, at Detroit, Mich., August 11th, 1898.

This is not the place to discuss the prophylaxis in regard to the procreation of a tuberculous progeny, which must according to our present conceptions of law and ethics, remain the delicate task of the family physician. The duty of the sanitarian and the government in regard to the consumptive poor commences with the care of the tuberculous mother after conception. All I may be privileged to say here is that, according to the experience of prominent obstetricians (foremost among whom I wish to mention my two late and much-regretted teachers: Professor Lusk, of New York, and Professor Tarnier, of Paris), intervention after a tuberculous conception for the purpose of cutting short the duration of gestation, and thus saving the mother's life, has proved disastrous in the majority of cases.

During my visits, some years ago, to many of the sanatoria for consumptives of Europe and of our own country, I inquired into the results obtained by the hygienic and dietetic treatment in those places in cases of pregnant tuberculous patients, and I learned, to my surprise, that a goodly number of these women not only did remarkably well during their pregnant state, but bore healthy children and continued to improve generally. Dettweiler, Römpler and Wolff have kept some of these tuberculous mothers under their observation for years, and no relapses were noted. The only conditions, *sine qua non*, in such cases are the artificial feeding of the child, or, better yet, giving the latter the benefit of a healthy wet nurse, and a prolonged and persistent treatment of the tuberculous condition of the mother under the best hygienic surroundings. Thus, it seems to me, the best policy for the government would be to create institutions, which might perhaps justly be called "maternity sanatoria," where the tuberculous mother, coming from our tenement districts, should be taken at least a few months before her delivery, and should remain until some time after complete recovery from her childbed.

The beneficial effect on the woman's and child's constitution through such an arrangement can hardly be overestimated. Leaving aside the physical well being thus largely assured to mother and child at a period when their organisms need the most tender care, the hygienic training which the mother will have received in such an institution will be of lasting utility to herself and child, to the family, and to the community.

These maternity sanatoria need not be situated at a great distance from the city. All that would be essential is that they should be erected on good porous ground, preferably somewhat elevated, and in a locality where the atmosphere is as pure as possible. The buildings should be constructed according to the principles of modern obstetrical science and modern phthisio-therapy. The physician in charge should be experienced in both these branches of medicine.

The knowledge gained by the mother in the maternity sanatorium will, in all probability, suffice for her to bring up the infant as a relatively strong child and protect it from the dangers of tuberculous infection. But the inherited predisposition may still remain, and at the time the child begins to go to school the State should again make provisions. I have learned by private inquiry that a pregnant woman who has the misfortunate to be syphilitic or tuberculous has great difficulty in gaining

admittance to maternities supported by private contributions. I know from official sources that tuberculous children are not only unwelcome in public schools, but are not infrequently refused admittance, on the ground of being afflicted with a contagious disease. If I am not mistaken, it was in Toronto that the right of the municipality to refuse a tuberculous child admission to a public school was tested for the first time before a court, and sustained on the ground of the contagious nature of the disease.

I do not wish to question the wisdom of this judgment, but I should like to know what is to become of the child if its parents are too poor to pay for private instruction? The child cannot return to the public schools, for its disease is a chronic one and may last for years. If the municipality refuses the benefit of an education in the ordinary public schools to such a child, does it not become an imperative duty to provide special schools for tuberculous children?

Schools, however, in the ordinary sense of the word, would do but little good to such a child. In France, Belgium, and some other European countries, there have existed for years sanatoria for the treatment of tuberculous children, maintained by the municipalities. Attached to all these institutions are regularly established schools. To provide a place where tuberculous children and the children of tuberculous parents—the weaklings of the flock, as they are graphically called by my friend, Dr. Irwin H. Hance, of Lakewood—shall be taken care of, becomes the duty of the government. In these school sanatoria the children will have a chance to be cured, if possible, of their disease or their predisposition, and at the same time they will receive the education which the State owes to all the children of the community. The majority of these school sanatoria may be advantageously placed on the seashore, for it seems a well-established fact that the tuberculous manifestations in childhood, which are most frequently observed as joint tuberculosis or tuberculosis of the bones or of the glands, do remarkably well in marine climates.

The selection of such children for sanatorium treatment would be the task of the school physician, and one should be attached to every public school. He, seeing the children daily, in order to prevent the introduction and propagation of acute diseases, will soon discern between the robust and well-nourished and the weak, dyspeptic, and not infrequently underfed pupils. These latter will, *ipso facto*, always be or become candidates for tuberculosis. If they are placed in time under good hygienic care, their chances of becoming strong and healthy citizens will be materially increased. For children suffering from pulmonary tuberculosis an institution could easily be annexed to each of the larger mountain sanatoria for consumptive adults, of which I shall speak presently.

But before doing so let us ask ourselves: Is there really need of the State and municipality taking care of the tuberculous poor adult? This question has been answered by the greatest sanitary authorities of all civilized countries with a most emphatic yes. Dettweiler, Leyden, and Liebe have spoken for Germany; von Schrötter for Austria; Grancher, Letulle, and Petit for France; Weber, Lindsey and Walters for England; Hansen and Saugmann for Denmark and Sweden; and in the United States we have in Bowditch, Hamilton, Biggs and Prudden, Lee, Trudeau,

Flick, Hindsdale, Otis, Shrady and others strong advocates for the establishment of State and municipal sanatoria for the care and treatment of the consumptive poor.

The crowned heads of Europe, such as the Czar of Russia, the Empress of Germany, the Emperor of Austria, the King of Saxony, the King of Sweden, and the young Queen of Holland have placed the sanatoria for the consumptive poor under their high protection, and have opened their private purses for their support. The nobility and the leaders in finance, art, and literature have been eager to imitate the noble example set by their sovereigns, and the latter, too, have given freely toward the erection and maintenance of such institutions. Thus, in the countries just mentioned a number of establishments now flourish which are doing a world of good by curing the curable tuberculous cases and taking care of the hopeless ones, thus diminishing countless centres of infection. Let me advise again, as I have before, the statesman, physician, or philanthropist who doubts the need of such institutions in the United States to visit the consumptive poor in the tenement districts of our large cities, and study the hygienic and social conditions of these sufferers in their surroundings. Let him watch some of the tuberculous families. After lingering a year either the mother or father dies of consumption, and the remaining partner, having become infected by nursing the companion, dies a year later, after having buried half of the children, who have succumbed to tuberculous meningitis.

I am sure these visitors will emerge from the dark, dreary rooms and the crowded, unclean houses which serve as habitations for millions of poor people, thoroughly convinced of the urgent need of measures to relieve these consumptive sufferers. Let these doubters also experience the difficulty of gaining admittance as a tuberculous patient into a general hospital supported by private charity, or let them watch the rapid decline the poor consumptive often makes, even if he has been fortunate enough to be admitted to a general public hospital, and they will become still more convinced of the urgent need of creating special institutions for this class of patients.

It will be clear to them that something must be done in the interest of the sick as well as in the interest of the still healthy portion of the community.

But how can this be done, and done effectually? What class of patients should the State or municipality take care of? Only the curable or only the incurable ones? Only the poor or also those of moderate means?

If any government is in earnest in its endeavor to combat tuberculosis effectually, besides its regularly enforced laws against bovine tuberculosis, its thorough hygienic and prophylactic measures against tuberculosis in man through sanitary regulations and public instruction, it must take upon itself the care and treatment of the curable and incurable cases of tuberculous patients, among the poor and among those of limited means. I mean here by limited means a financial condition which does not permit a tuberculous patient to enter a private sanatorium or to have at home such medical, hygienic, and dietetic care as will assure him the best possible chance of recovery.

The next point to be considered would be how to recruit the patients, and how to discriminate between the proper and improper cases, and thus avoid increasing the dreadful and degrading abuse of medical charity, from which we all, and especially the general practitioners, suffer so much in these days.

Permit me to present to you a few suggestions in connection with these problems. Just as there exists in nearly all States or municipalities a commission or a number of special examiners for the purpose of determining who is a proper subject for State care in an asylum for the insane, so should there exist a commission for the determination of admission to a municipal or State institution for consumptives.

Such a commission, composed of a certain number of general practitioners and health officers, should be aided in its work by the charity organizations. Each and every case should be investigated by a combined committee of physicians and laymen, for the following purposes :

1. To determine the applicant's condition by a medical examination.

2. To visit his home if he has been found tuberculous, and to institute such hygienic measures as seem necessary (distribution of pocket spittoons, disinfectants, etc.).

3. To examine the other members of the family in order to find out if any of them have also contracted the disease, and if so, to counsel proper treatment.

4. To report in full to the sanitary authorities concerning the condition of the patient's dwelling. Its renovation or even destruction may become imperative when it is evident that tuberculosis has become "endemic" there, owing to the condition of the soil or to other sanitary defects.

5. To determine the financial condition, whether the patient is or is not able to pay, and whether or not by his being taken to an institution the family will become destitute.

If the latter should be the case, it would become an imperative duty for the municipality to provide for the family. In many cases a letter of inquiry, sent to the former medical attendant of the patient, would materially aid the work of the investigation committee.

Any individual should have the right to present himself for examination, and every physician should be at liberty to recommend any person for examination to the board of his precinct or district.

The institutions needed to carry out this plan would be :

1. A centrally located reception hospital and dispensary. The dispensary should treat the ambulant tuberculous patients, whose admission into the sanatorium is impracticable or has to be delayed for want of room. These dispensaries should also serve the patient discharged from the sanatorium as a place to seek counsel, and thus aid in his continued improvement, or guard against approaching relapses.

2. One, or several city sanatoria, located in the outskirts, and, if possible, in a somewhat elevated region where the atmosphere is known to be pure. Here all patients should pass through a preparatory sojourn before being sent to the mountain sanatorium. The more advanced cases would all be retained here.

3. One, or several mountain sanatoria, at no greater distance from the city than three or five hours by rail, at an altitude, if possible, of between

one thousand and two thousand feet, on porous ground with southern exposure, and as nearly as possible protected against the coldest winds, preferably surrounded by a pine forest. A farm in the vicinity, where the thoroughly convalescent patients could do light work, might make the institution in a measure self-supporting. To this place the selected incipiant and the improved cases from the city sanatorium should be sent to complete their cure. To the mountain sanatorium there should also be attached a department for children suffering from pulmonary tuberculosis.

4. Several seaside sanatoria for the treatment of children afflicted with tuberculous diseases of the joints and other tuberculous (scrofulous) manifestations.

5. A maternity sanatorium. Of the requirements of such an institution I have already spoken.

By this plan you will see that I am in favor of treating tuberculous patients near their homes, and in the same or nearly the same climate as that in which they will have to live and work after their restoration to health. My reasons for advocating such principles are founded on the experience of all modern phthisio-therapeutists, who have demonstrated that the hygienic and dietetic treatment in closed establishments is feasible and successful in nearly all climates. I know from personal observation that cures of pulmonary tuberculosis effected in our ordinary home climates. I know from personal observation that cures of pulmonary tuberculosis effected in our ordinary home climates, which are in the average not considered as especially favorable to this class of sufferers, have been more lasting and more assured than cures obtained in more genial climes. And I may perhaps say right here that, with all due deference to the opinion of others, I do not believe there exists any climate which has a specific curative quality for any form of pulmonary tuberculosis. Climate can only be considered a more or less valuable adjuvant in phthisio-therapeutics, but not a specific.

It is, furthermore, my firm conviction that for social and economic reasons the majority of tuberculous patients will have to be treated near their homes. Only by adhering to this principle can we expect to cope successfully with tuberculosis—this disease of all climes, but which is most prevalent in large centres of population, where civilization has seemingly attained the highest standard. For this reason a corresponding development of sanitary science and the widest diffusion of the knowledge of hygiene are indispensable wherever men mass themselves together in large urban communities.

That through the presence of properly conducted sanatoria for consumptives not the least danger can arise to the vicinity where such institutions may be placed, I have endeavored to demonstrate in several of my previous writings by citing the official statistics concerning the mortality from tuberculosis for forty and for one hundred years, respectively, before and after the establishment of sanatoria for consumptives in certain villages in Germany. To be brief, I will only summarize these statistics here by saying that in the two villages, Goerbersdorf and Falkenstein, where five of the largest sanatoria are situated, the mortality

from tuberculosis has actually decreased among the village people more rapidly and more largely than anywhere else, it being now one-third less than before the establishment of those institutions. Thus we see that properly conducted sanatoria for consumptives not only serve as hygienic educators to individuals and families, but as instructors in hygiene to whole communities. The example in scrupulous cleanliness set by employees and inmates of such sanatoria thus bears the best fruits. The same cannot be said of open health resorts, where the regulations concerning the expectoration are less severe. In these places the mortality from tuberculosis has increased among the native population since they have been frequented by consumptives. I am able to substantiate this statement by letters addressed to me by Dr. Ballestre, of Nice, France, and Dr. Atkins, of Las Vegas, New Mexico, both health officers of their respective localities. Recent personal inquiries in some of the boarding-places in the Adirondacks where consumptives congregate, outside the jurisdiction of the sanatorium, indicate, I am sorry to say, the same condition there.

And now, Mr. President and gentlemen, let us in conclusion treat the most difficult part of our discourse, that is to say, the social and economical aspect of the tubercul osisproblem.

Let us take for illustration a community of 1,000,000 inhabitants. With an average death rate of 25 per 1,000, one-fifth of whom die from tuberculosis, the community would lose 5,000 a year from this disease.

Some sanatoria claim as many as seventy per cent. of cures when the patients are admitted to treatment in the incipient stages, and I have reason to believe that these figures are exact, for pulmonary tuberculosis in the earlier stages is indeed one of the most curable of all chronic diseases. But let us presume a percentage of fifty only. Thus, if these 5,000 had been placed at the onset of their disease under proper treatment in sanatoria, 2,500 human lives would surely have been saved. Statistics have amply shown that tuberculosis is most prevalent among the poorer classes. The relation is about as two to one. So I believe that I am nearly right when I say that of those 5,000 over 3,000 at least are of the poorer classes, and of these 2,000 have died most likely in public institutions.

From personal experience gained in some of the larger general hospitals in Europe and in the United States I have learned that a tuberculous patient rarely makes a continuous stay in one hospital. He usually improves after his first sojourn and leaves, only to turn up after a few months in the same or another hospital for a second period of rest, and so on. But, all in all, the time he spends in general hospitals, to which which he is usually admitted when in the advanced stage, is rarely less than fifteen months.

According to the last published annual report of the commissioners of public charities and correction of the city of New York, for the year 1895, the daily expense per capita in the general hospitals of that city is $1.16. Thus the patient costs the municipality up to his death $522, aside from the money expended on the family of the patient, should the latter have been its only bread winner.

The general hospitals claim few cures of pulmonary tuberculosis, and it seems almost as if this money had been uselessly spent, since a general hospital cannot even be considered a safe place for isolating a consumptive. If the same patient had, for example, been treated at the Adirondack Cottage Sanatorium, or at a similar institution, and been sent there at an early period of his disease, he would have had sixty per cent. more chances of recovery, and would have cost only $1 a day, and that during a period of perhaps only six or nine months.

Thus two thousand tuberculous patients treated in the general hospitals in the city of New York, with very little chance of being cured, but with much chance of doing harm to their fellow-patients suffering from acute diseases, cost the city $1,044,000. Treated in sanatoria or special hospitals, with twenty to fifty per cent. of chances of recovery, according to the stage of their disease, and even if we should allow them just as long a stay in the special institution as we grant to the advanced cases in general hospitals, the cost would be only $890,000. Thus with a saving of at least $150,000 and the saving of hundreds of lives, countless centres of infection would be extinguished, which otherwise would endanger the families and neighbors of these tuberculous invalids.

But aside from that, think of the gain to the commonwealth by restoring to health the many bread winners whose families, under the present conditions, might become a burden to the community.

As stated above, these institutions should be open, not only to the poor, but also to those in moderate circumstances who can pay part of the expense. For this latter class of patients, many of whom for reasons of a noble feeling of independence hesitate to accept public aid, I have often wondered if a plan, something similar to the State invalidity insurance companies of Germany, could not be inaugurated in this country. There the moment an individual enters upon the career of an ordinary laborer or servant he is obliged to be insured against sickness, accidents, and old age. If he develops tuberculosis he is immediately sent to one of the many sanatoria of that country. The government authorities, who are at the head of this State insurance company, have long since learned that, through a timely treatment in a sanatorium, the tuberculous individual is most speedily and lastingly cured, and consequently with the least expense.

Dr. Weicker, of Goerbersdorf, to whose institution a great many such patients are sent by the government, writes me that the percentage of cures among these is higher than among the private patients. His latest statistics give a percentage of eighty of established cures, with only an average of seventy-six and one-half days of sojourn in the sanatorium. This marvellous result is to be explained by the fact that the government insurance officials send their patients to the sanatorium at much earlier periods than a private physician is likely to do.

Thirty-seven of these government insurance companies have, according to their published figures for 1897, collectively assisted 4,480 consumptives, of whom 4,432 were sent to subsidized sanatoria. Nearly all these State insurance companies contribute to the funds of such establishments; some have found it to their advantage to erect special sanatoria of their

own. For the year 1897 these State insurance societies of Germany invested altogether 1,300,000 marks in sanatoria for consumptives, and for 1898 a fund of between three and four millions has been destined for that purpose.

How would it be if one of our most thickly populated States, after having created a number of sanatoria, should try the experiment of a State insurance company against tuberculosis? How many families, even of the classes in fair circumstances but in which tuberculosis is dreaded on account of the disease having been the cause of the death of some of their members, would not gladly avail themselves of this opportunity—especially since the existing life insurance companies refuse applicants with a family history of tuberculosis? This opportunity, offered by the State, would mean giving to their children the certainty of being afforded the best possible chance of recovery, should they be taken down with the family disease. No matter at what age, as long as the individual remained insured, there would be the State sanatorium to receive and treat him. A payment of, for example, fifty cents a month from the birth of the child, would give to the State insurance company after fifteen years, with the accrued interest, a capital of nearly $150. By paying the aggregate amount up to the date of application, any predisposed individual might be insured at any time, and such an institution be called into life at once.

The greatest chance of a predisposed individual being taken sick is between the age of puberty and thirty. The chances of the disease becoming healed without ever having been discovered are between twenty and twenty-five per cent. I am in a position to verify this percentage by statistics which I compiled for my book on tuberculosis. Besides reviewing the vast literature on the subject I addressed three hundred letters of inquiry to the leading pathologists of the world, and as a result I can say that out of every one hundred autopsies made on people having died accidently, or of diseases other than tuberculosis, twenty to twenty-five showed evidences of healed tuberculous lesions (cicatrization or calcareous formation). The chances of this disease being cured in from six to nine months, if it is discovered at an early period, are at least fifty per cent. It is not necessary to be an insurance expert to see by these figures that the State would hardly be a great financial loser by creating such an insurance institution. But the greatest benefit which would accrue to the State or commonwealth through such an enterprise would be the paving of the way toward a complete State or municipal control of tuberculosis among the population which, owing to their social conditions, could otherwise not properly be cared for, and would constitute forever an impediment to the thorough prophylaxis and possible eradication of the disease.

To carry on the various State or municipal institutions to be erected, with a view to effectually stamping out tuberculosis, a large staff of competant physicians would be needed. These physicians should be paid for their labor. It is inevitable that through taking thousands of patients into such institutions the general practitioner will lose some of his income. Let the State compensate him by paying him for the service he may render in any of the institutions (sanatoria, hospitals, or special dispensaries) created by the State with the view of combating tuberculosis.

To proceed with this work as soon as possible, I should suggest transforming some especially favorably located general hospitals into special hospitals for consumptives. Create sanatoria for children on the seashore, for adults in mountainous or at least in elevated and healthy regions. If your State or provincial funds are not large enough to meet the demand, appeal to some of the many generous and patriotic philanthropists, whose hearts and hands are ever open when there is a question of saving American lives. In 1896 Vaughan, writing on the restriction of tuberculosis, said: "Of the 63,000,000 people living to-day in the United States, 9,000,000 or more will die of tuberculosis unless something is done to prevent it." Let us do that something—let us do it soon and let us do it well—so that with the dawn of the new century we may hope to see the tuberculosis problem solved, at least in North America; solved by the most humanitarian method, thanks to the combined efforts of physicans, statesmen, philanthropists, health officers of States, provinces, and cities, and the good will of an intelligent people.

PREGNANCY COMPLICATED BY KIDNEY AEFECTIONS.—E. H. Doughty, (*Am. Jour. of Gyn. and Obst.*) concludes that albuminuria appearing primarily in pregnancy may arise from:

1. Pressure on the renal veins or other vessels.
2. Pressure on the ureters.
3. Increased work of the kidney due to the excretion of the waste products of the fetus and enlarged uterus.
4. The generally increased arterial tension which is usual in pregnancy.
5. A reflex influence starting from the pregnant uterus as a source of irritation, and disturbing the circulation or the secretions of the kidney as that of the salivary and of the thyroid glands are in some cases disturbed.
6. The presence of a specific germ.

In cases where the kidney-trouble is of long standing and the albuminuria amounts to one-third, together with some edema, pregnancy should be at once terminated for the woman's sake, especially since the chance of a living child is very small, as premature labor almost certainly occurs. When, however, there is merely a temporary disturbance of the kidneys and their vascular system, the chances for mother and child are considered better, and pregnancy may be allowed to proceed.

CEREBRAL NEOPLASMS.—Krauss in the *New York Medical Journal* for July 30, considers the classic symptoms of brain tumor in their order of importance as: 1, head pain; 2, optic neuritis; 3, mental apathy; 4, nausea and vomiting; and 5, paralysis as a special localising symptom. The early symptoms are headache, incapacity for mental work, disordered digestion, nervous irritability, and a general malaise. Choked disk or optic neuritis he considers almost pathognomonic of cerebral tumor and a decisive symptom.—*Journ. Am. Med. Assoc'n.*

SURGERY.

IN CHARGE OF

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THE PRESENT POSITION OF SURGERY.

I. Its Scientific Aspect. II. Its Practical Aspect. III. Its Moral Aspect.

BY MR. THOMAS ANNANDALE.

It must at the outset be acknowledged—and acknowledged with gratitude—that the marvellous advances in connection with present surgical practice are largely indebted to those who have diligently, honestly and successfully carried on experimental and other research in connection with the sciences of chemistry, physiology, bacteriology, anatomy and pathology. We, as surgeons, look forward hopefully to receive the continued aid of these gentlemen in still further promoting our art, and it should be our duty to encourage and assist in every possible way all such scientific work, work that in connection with surgery can only be considered in its early infancy, and will require much care, accuracy and close industry to establish its steady and sure growth.

I would now refer to some of this scientific work that has so benefited surgical practice. To speak of the antiseptic system at the present time is to speak almost of ancient history, but two reasons prompt me to refer to it: First, because it was in the Edinburgh school that its distinguished author carried on those carefully conducted and original researches and experiments which led him to suggest this great principle. Secondly, because I have lived long enough to have had experience of three epochs in connection with surgical wounds. As a young apprentice, more than forty years ago, I witnessed the dressing of wounds by the application of layers of ointment, the edges being brought together by sutures of thick silk and the arteries secured by ligatures of the same material, the ends of the ligatures being left hanging out of the wound and acting much like setons. As a dresser under the great Syme I learnt the simpler methods of water-dressings and of dry-dressings; and lastly, as a as a pupil and colleague of Lister I had the good fortune to follow the various stages of the development of the antiseptic treatment. In the first of these epochs I gained a large experience in connection with septic suppuration, hospital gangrene, pyemia and septicemia, all of which con-

ditions were common and frequently led to fatal results. In the second epoch my experience of septic suppuration, pyemia and septicemia was small in comparison, but still too common. In my third and present epoch such experience has been reduced to a minimum.

In the early stages of the antiseptic suggestions, failures undoubtedly occurred, but such failures, when honestly investigated, were important as lessons, and the consideration of their cause did much to establish on a successful basis the great principle. There were some who, ignoring the principle of the antiseptic treatment, and also ignoring the established principles of surgery, preached and practised that the mere application of carbolic acid or other antiseptic lotion was all that was required, and when such treatment was unsuccessful condemned the whole system.

Let me quote a sentence from an address that I gave when appointed Professor of Clinical Surgery in this University, now twenty-one years ago: "It is not the mere application of carbolic acid in one form or another which constitutes the antiseptic treatment, but the true antiseptic surgery is that which is the result of many years' patient, thoughtful and scientific research; of vast, laborious and expensive experiments, and of much and valuable time spent in clinical observation on the part of Mr. Lister."

I confess that I was one of those who, while carefully watching the progress of Lister's work, and thoroughly believing and highly admiring his great scientific abilities, were at first cautious in accepting all the details of its practical application, because I felt that these were somewhat complicated; and it was certainly a great relief to my mind, and to the minds of many others I am sure, when it was found that in actual practice many of these details could with safety to the principle be much modified and simplified; and further, I had learnt from experience that even with the use of antiseptic treatment the ordinary principles of rest, avoiding causes of irritation and attention to the general health must not be ignored. I know that no one rejoiced more than Lister himself when it was proved that his great system could be successfully simplified, and so used under circumstances which formerly made it difficult or impossible to carry out.

But while the external application of antiseptic means and precautions is now thoroughly established upon a simple, and at the same time efficient, basis, it must not be forgotten that injurious organisms enter the body and tissues by other channels than through external wounds or breaches of surface; and therefore it is that the science of bacteriology becomes so important a study in connection with disease, and with the results of injuries and surgical procedures. It is to a further study and knowledge of this science—which must be considered as still in its infancy—that surgery, as well as medicine, looks for more light in connection with the causation and treatment of diseased conditions.

Although experimental and pathological research and clinical observation have already done something to explain and determine the action of certain organisms, the particular manner in which these organisms cause in one case no result, and in others injurious results, cannot be considered as proved. We certainly have learned certain facts: First, that organ-

isms of various kinds gain entrance into the tissues or organs of the body; secondly, that some special condition of these tissues and organs favors their development and multiplication. Such organisms vary much in form, source of origin, situation where chiefly met with, conditions under which they develop or are destroyed, and the special effects which they produce. In the majority of instances the bad effects are produced not so much by the multiplication of the organisms themselves as by poisons or toxins caused by their presence or behavior in connection with the tissues. Further, it would appear that the resulting toxin may not itself produce the poison, but give rise to chemical changes and products which are the real cause of the injurious results. It is also an interesting fact that the presence of more than one form of bacillus may either increase or destroy these injurious results.

The character of the tissues or soil in which the organisms settle has much to do with the results caused. Individualism, age, constitution, general condition of the patient and any local condition, more particularly any condition which interferes with the vitality of the tissues, influence much the actions of organisms. The resistance of the tissues to the injurious effects of organisms depends upon the condition of these tissues, upon the activity of the organisms, and upon the amount and virulence of the toxins developed. It appears that it is the spores of the organisms that most resist destruction, and as these spores may germinate not only in the tissues but outside the body, they act as a serious source of infection.

From the facts I have just stated it will be judged what difficulties arise in connection with the study of bacteriology, and consequently with the treatment of the injurious results produced by the numerous organisms which invade and affect the human body. Bacteriological experiments upon the lower animals may in some instances aid us, but the conditions of the lower animals are not always the same as those of human beings, and therefore results obtained in the former are not always safe guides as regards the results in the latter.

Continued careful study of antomy and pathology, and accurate clinical observation should do something to increase our knowledge, but I venture to think that much of our future trust for light must be in connection with physiologic chemistry, which we hope may be able to teach us more of the origin, causation and behavior of the various toxins, and of the action of the tissues in connection with them, so that we may be able to counteract their injurious effects by appropriate treatment.

At the present time we endeavor to treat the general effect of these toxins either by the administration of remedies supposed to produce a general antiseptic effect—but it cannot be said that such treatment has proved satisfactory except in a limited number of cases—or by the introduction int› the tissues, by subcutaneous injection, of so-called antitoxins. This latter treatment has met with an encouraging amount of success, especially in certain directions; but its position is still uncertain, and much further experience is required to place it on a safe and reliable foundation. All who have employed the antitoxins in connection with the surgical conditions must have encountered this uncertainty as to their

action. My own experience is that, though some severe cases of septicemia have recovered after the injection of an antitoxin; other cases very similar have recovered without any antitoxin being used.

I would suggest that another important subject for further study is the physiologic action or connection between one tissue or one organ and another. May not further experience help us in carrying out treatment based upon this connection? Take, for instance, the suggestion of Beatson for removing the ovaries in carcinoma of the female breast, incurable by other means. Having thought it my duty to test this suggestion, I carried it out in three typical cases, and my experience and the experience of others who have tried this procedure has been that, though the disease was not cured, the removal of the ovaries had certainly some influence upon the diseased local condition.

I venture also to suggest that as a possible and further addition to treatment some more careful work should be devoted to the action of drugs upon the toxins, such drugs being introduced either by the mouth, by subcutaneous or intravenus injection or by inhalation. We know that large quantities of saline fluid may be injected into the veins with safety, and it is therefore not unreasonable to suppose that other solutions of a non-irritating and antiseptic nature may be similarly employed.

The remarkable results obtained with thyroid extract should be an encouragement to us in this respect, and it has been already proved that certain vegetable products act as powerful antitoxins. If it can be discovered that certain drugs can be safely and successfully used as antitoxins it will much simplify our treatment, for such remedies would be more easily and more certainly handled than the antitoxins now in use.

The treatment of sarcoma or other new growths by means of toxins is another subject of great interest to the surgeon. The results obtained by Coley and others with the mixed toxins of streptococcus and prodigiosus do show some hopes, for under the use of these toxins growths have undoubtedly disappeared, but I think that all who practice surgery will agree with me when I say that sarcomas and other growths do occasionally undergo a check in their development, and even disappear without any apparent cause. In all probability these occasional occurrences are the result of some physiological or bacteriological action which is not perceptible.

Reference to the scientific aspect of surgery would not be complete without some notice of the "new photography." Ordinary photography has always been of great assistance to surgeons, and will continue to be so for the illustration, progress, and record of many of their cases, but its new and latest development has already proved to be of the greatest service in diagnosis, and consequently in connection with successful treatment, and an improved development of it will no doubt add still more to the success of surgical practice. The scope of this department of science is a very wide one, and by its means we may add much to our knowledge of osseous development and growth, of the relation and position of internal organs, and of the actual condition of diseased parts. In connection with many surgical conditions, and especially in connection with injuries of various kinds, this photography is invaluable.

In leaving this, the scientific portion of my address, I desire to again express the indebtedness of practical surgeons to those discoverers and workers in science who have by their honest and accurate observation obtained results which have done so much to improve our practice, and to render our treatment more successful.

THE PRACTICAL ASPECT.

The advances in our scientific knowledge, combined with extended and more accurate clinical observation, have, as has already been stated, assisted much in the improvement of practical surgery, and the development of what I would designate honest specialism must also be looked upon as adding to our practical resources and treatment.

If asked to define any special characteristic which will apply to the practice of surgery at the present day, I would be inclined to say simplicity—antisepticity, of course, being granted—a simplicity in which are included operative procedure, instrumental assistance, and after-treatment. It is true that from time to time new procedures and new instruments are suggested, but as a rule it will be found that if practical surgeons adopt and employ them they are in the direction of continued simplicity with some addition to their efficiency.

In a general address such as this a reference to all the improvements which have taken place, and are taking place, is quite unnecessary, as such improvements must be well known to all who desire to carry on with success the active practice of surgery.

For such knowledge we have not only our own experience to aid us, but we have to thank the medical press and the many distinguished authors, who, by their books and papers, bring the results of their own experience and observations and researches under the notice of the profession.

Although so many and so great changes have taken place as a result of the advances in the departments of science already referred to, it would be very wrong to ignore the work of those surgeons who are no longer with us. Many of these surgeons showed a knowledge and wisdom and forethought of conditions and procedures which have stood the test of time, and still remain sound and correct as monuments of their genius. This knowledge was principally the result of shrewd and careful clinical observation and reasoning, for they had little or no scientific aids to help them, and their success under such circumstances should be an example to all of us to make every use of our clinical opportunities and to observe closely, carefully, and honestly.

But the practice of surgery has not only reached a high standard of improvement; it has much widened its area both as regards the number of its procedures and the number of those who practice them. This is scarcely the time or place to discuss the exact relationship between surgery proper and what is called gynecology. Of late years these departments have been gradually merged into one another, so that the line of demarcation between them is scarcely apparent. Both are really surgical procedures, and both require for their proper and successful performance that training and those qualities which make the good surgeon. That

physicians under the designation of gynecologists should now become operating surgeons is perhaps only a little return for the fact that surgeons have so extensively and successfully invaded the province of physicians, and, as time goes on, some balance may perhaps be arrived at, which, while guarding the interests of the public, will satisfy the representatives of medicine and surgery.

In this greatly improved era of practical surgery it is well perhaps to suggest a caution, for there is undoubtedly a tendency—and more especially in the case of some of our younger colleagues—to be too ready to resort to surgical procedures. When greater risk was attached to operative procedures, surgeons young and old had, for the sake of their patients and their own reputations, to take into account these risks, even in comparatively slight operations; but now that so little risk attends operations, they may be undertaken without due consideration of all the circumstances or necessities of the case. I would, as a senior colleague, venture to remind my younger friends that nature, with perhaps some little non-operative treatment, will do much, and that no operative procedure should be suggested or practised until the case has been thoroughly studied and found to be unrelievable by other means.

As a practical surgeon in this, the Edinburgh School of Medicine, it may be expected that I should refer to my experience of anesthetics, and I accordingly express the opinion that chloroform holds the field as the best general anesthetic in connection with surgical procedures; and although I have met with a few fatal results from its administration, I have most thorough confidence in its safety if carefully used and it effects diligently watched. Perhaps the best test of my confidence is the fact that having a few years ago suffered from a poisoned finger, received when operating, I was required to take an anesthetic on several occasions, in order to have deep incisions made for the relief of extensive suppuration. The anesthetic I took was chloroform, and it was administered according to the 'open" method by one of my assistants, and not by any special anesthetist.

It is my opinion that fatal results will occasionally take place in connection with all anesthetics, and that these fatal cases may be divided into (1) avoidable, (2) unavoidable. The avoidable ones are those which are due to careless administration, or to neglect of means to prevent blood or other matters entering the air-passages, and should not occur if proper care is exercised. To avoid these risks it is essential that one person should give sole attention to the anesthetic and watch both respiration and pulse, more especially the respiration and its nature, during the whole period of its administration. I need scarcely say that the preparation of the patient before the anesthetic is employed, is, when possible, important. I prefer to give a small basin of plain soup about two hours before the chloroform is administered, and if the patient is feeble, or the operation likely to be attended with much shock, a table-spoonful or more of brandy or whisky a quarter of an hour before the anesthetic. In cases in which there is a risk of matters, and especially of blood, passing into the air-passages, the dependent position of the patient's head, as advocated by me in 1879, will often prevent this accident, and, should it take place, immediate tracheotomy must be resorted to if the symptoms are serious.

The unavoidable cases are, in my opinion, the result of heart-failure from fatty or other conditions, and occasionally I believe they may be caused by cerebral conditions, as I have seen a fatal case in which the symptoms resembled most an epileptic seizure. Further, I believe that in a majority of these unavoidable cases it is impossible by any external examination prior to giving the anesthetic to discover the condition which has led to the fatal result. I am inclined to think that the avoidable accidents are more frequent than the unavoidable, and, if so, it teaches us how important it is to avoid, by careful preparation and administration, anything likely to bring about an unfavorable result.

I would like here to give a word of warning as to the use of cocaine in local anesthesia, and more particularly when it is used by subcutaneous injection. My experience is that some individuals are especially susceptible to its action, and, therefore, if too strong a solution, or too large an amount of a weaker one is injected, the result may be faintness and serious interference with heart-action. It should, therefore, be used cautiously, and a stimulant be given, or be at hand in case of such symptoms occurring.

Not wishing to weary you, I close my remarks under this head by referring to the importance of taking carefully into consideration everything likely to influence the performance or result of any surgical procedure, and, when possible, to first remove by proper treatment, conditions likely to interfere with or retard the recovery of the patient. It is not age or apparent feebleness which is likely to cause anxiety, but it is the conditions of the organs and the tissues which should guide the surgeon, for if these be in a weak or a diseased state, they are more likely to become the soil for injurious bacteriological development and action.

THE MORAL ASPECT.

I make no apology for offering a few remarks under this head, with the explanation that I employ the term "moral" in its highest and widest sense, for I am decidedly of opinion that it becomes every member of our profession who has the true sense of relieving suffering humanity at heart, and who desires to maintain the honor and reputation of his profession, to speak out with no uncertain meaning in regard to every action which is dishonest or dishonorable or tends to be so. The actions and practices of so-called quacks or unqualified individuals are much to be deplored, and it is in every way desirable that legalised checks should be established so as to prevent or limit them, and more particularly in the case of the ignorant and uneducated public. If the educated public consult such practitioners—and it is not very uncommon for them to do so—they can only blame themselves should unfortunate results take place.

It is, however, of practices inside the profession of which I wish to speak. It is sincerely to be regretted that in some quarters the true, honest and high feeling which should be the standard principles of the members of our profession is in the present day partially or wholly ignored, and in consequence our profession is not always respected as it

should be, and its members are looked upon by some as mere humbugs, in some cases not without reason, thinking more of fees and fee accumulations than of their patient's cure or relief. Three causes seem to me to influence this much-to-be-lamented evil which has insidiously invaded our profession—(1) active competition; (2) untrained specialism; (3) society-demands.

There can be no doubt that the number of medical practitioners has increased, but in connection with the increase of the population, this increase in numbers is not so great as is generally supposed. A few years ago I collected statistics in connection with this question, and taking some of the largest provincial towns in England and Scotland, I found that the number of medical men, as compared with the population, was very little changed from what it had been twenty years before. The active competition, therefore, is in my opinion not so much due to the increase of medical men, as to the fact that in many instances the most of the remunerative work is done by a few, which leaves much hard work and poor pay for the remainder of the profession.

My suggestions for the cure of this are, that those who constitute the few should be specially careful to guard and encourage the interests of the many, should not seek to secure every remunerative appointment within their reach, but should at least leave some crumbs for their less fortunate brethren.

The second cause is untrained specialism. I have already stated that honest specialism has aided much the practice of surgery, and by honest, I mean such practice as is founded upon a thorough knowledge of all the different departments of the profession, and upon an honest study of all the circumstances connected with the various conditions which affect the organ or organs which are specialized.

Specialism in the hands of qualified members of the profession, unless practised under these conditions, is simply quackery, and quackery of the worst kind, for it is carried on by those whom the public understand to be properly educated as regards their profession. There are few who endeavor to practise their profession with integrity who have not met with cases in which mere symptoms have been treated by operation or otherwise, the real source of the diseased condition having been entirely ignored, either through ignorance or for reasons which can only be classed as contemptible and degrading to the profession.

The cure for such practices is not easy, and it can only be hoped that the honest members of the profession will note such practices and endeavor to check them by exposing their real nature, and by endeavoring with tact to educate the public mind to avoid those who practise them as unsafe and possibly dangerous advisers.

The third cause is society-demands. A section of the public, or I should rather say a section of what is termed "society," has done much to interfere with the proper feeling that should exist in our profession.

Men, women, and even young people, read and discuss professional matters and diseases; books are published and advertised which are written more to catch the eye of the public than to advance the knowledge or reputation of the profession; and a certain class of newspapers

and periodicals devote one or more columns to professional subjects, and even give gratuitous advice in the form of questions and answers.

The manners, qualifications and doings of members of the profession are freely criticized at afternoon teas and other entertainments. One man is condemned, and some supposed failures in treatment are magnified and invented, while another receives extravagant praise, and many of his wonderful surgical or other procedures are lauded, and not infrequently described with marvelous details added. One is glad to think that in the majority of instances the surgeon or specialist has no act or part in such proceedings, and having, with justice, confidence in his abilities and upright conduct, much regrets that they should exist and does all he can to prevent their occurrence.

But there are some, I fear, who take advantage of such extravagant popularity, and, having become the fashion, trade upon it in a manner which is not consistent with the high feelings which should influence all our professional relationships. It is fortunate that there still exist among the public in all classes of society many who are endowed with nature's nobility and good feelings, and who are not influenced by the extravagant or false opinions of fashion, but who have both respect and esteem for those members of the medical profession who conscientiously devote themselves to the relief of suffering.

We can all hope, but I fear hope in vain, that those members of society who lead a frivolous, useless, and sometimes unholy life, may some day realize that they are not acting as true citizens of their country, or taking any proper interest in the welfare of their countrymen and countrywomen.

If some of their energies, some of their time, some of their sympathy, and some of their money were employed to assist their fellow creatures, they would themselves reap reward by feeling that their lives were not altogether selfish existences.

If any member of our profession encourages or takes part in society's ignoble life or actions, he is not worthy to belong to the profession, and he certainly does not add to its reputation.

PRURITUS OF THE GENITALS.—Cumston (*Med. Record*, January 15, 1898, recommends the following:

℞ Menthol ..... 4 parts
Alcohol ..... 30 "
Aq. dist ..... 60 "
Dil. acetic acid ..... 150 "

Sig. Apply locally.

or

℞ Acid. carbolic ..... 5 parts
Hydrated potash ..... 2 "
Linseed oil ..... 30 "
Ol. bergamot, q. s.

Sig. Apply at bedtime.—*N. Y. Polyclinic.*

NERVOUS DISEASES AND ELECTRO-THERAPEUTICS.

IN CHARGE OF

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EARLY DIAGNOSIS OF INSANITY.—Early diagnosis is of the highest importance—not detailed differential diagnosis, but simply early detection of mental unsoundness. Has one to minister to a mind diseased, with a train of deceptive manifestations obscuring the truth, or with actual, tangible morbid conditions of the body, or with real extraneous relations, on the part of the patient, to other people and things? That is the first question. Insanity is a condition, due to disease, in which the faculty of judgment ceases to be guided by the experience of the individual in appreciating or accepting or directing or controlling or applying the operations of the other mental faculties in part or whole. In every case the individual should be fully studied, in order to determine what his mental action would be normally under given conditions—in other words, his normal mental experience. Failure to apply experience deliberately or automatically as a guide to action is a departure from the normal, and indicates morbid mental conditions—insanity. I know of no better guide in diagnosis than this rule, and, in a long association with the insane, have found it to be universally applicable. It matters not whether the person be congenitally defective or of the highest type of development. Insanity may be superadded to idiocy, and so may it disturb the most highly wrought mind. In either case an abdication of normal experience from the control of mental function, in whole or part, is the pathognomonic sign. Lack of apparent reasonable motive for acts or thought expressions is evidence, *prima facie*, of mental disease, and this rule suggests, in my judgment, the best primary test; but it is important that what would be reasonable to the individual in his normal state shall be used as the standard in any given case. The influence which unsoundness of body always exerts on soundness of mind must always be considered and used as a side light on the main question. Undulations of mental tone, due directly to somatic depression or excitement, must not be taken for insanity. A broad application of the foregoing principles will be a safeguard against any such erroneous conclusion. But, on the other hand, there are many morbid conditions of the body which do exert a most decided influence in causing true psychoses.—Dr. Jos. G. Rogers, Ph. D., M.D., Med. Supt. Ind. Hosp. for Insane, in *Ind. Med. Jour.*

SCHEME OF THREE LEVELS IN THE CEREBRUM.—In a recent address before the British Neurological Society (*British Medical Journal*, January 8, '98), J. Hughlings Jackson discussed the relations of different divisions of the central nervous system to one another and to parts of the body; the evolution of nervous centres, and the study of nervous maladies as dissolutions. A morphological scheme of the whole nervous system, he says, such as spinal cord and encephalon, is inadequate. We must have one based on degrees of directness and complexity with which nervous centres, or as he prefers to call them, levels, represent impressions and movements of parts of the body; an anatomical and not merely a morphological scheme. While he maintains that the lowest level is common to the cerebral and cerebellar sub-systems, he does not attempt any division of the cerebellum into levels. The lowest level extends, it is suggested, from the tuber cinereum to the conus medullaris; it being made up of sensory and motor centres of the cord, medulla, pons, and aqueduct—representing the body in detail. There are other centres of this level itself, presiding over respiration, intestinal action, defecation, micturition, the sexual act, parturition, etc.

The Rolantic region and prefrontal lobe are the motor provinces of, respectively, the middle and highest levels; the sensory provinces are not so well defined. The unit of constitution of the whole nervous system is sensori-motor, and also that in the middle and highest levels at least, the so-called motor provinces are only *chiefly motor*, and the sensor provinces are only *chiefly sensory*. In explaining the intermediation of common motor centres of the lowest level, he says the cerebellum represents movements of the skeletal muscles in the order, trunk, leg, arm, preponderatingly extensorwise; the cerebrum represents movements of the same muscles in an inverse order, preponderatingly flexorwise.

It is also supposed that impulses from motor centres of the higher levels of each subsystem continuously act upon the motor centres of the lowest level; that the impulses from each set of higher levels antagonize or inhibit one another in different degrees upon different lowest motor centres; that the degree with which the central and the cerebellar impulses antagonize one another corresponds to the degree of their different representation of muscular movements.

The relations of the cerebral and cerebellar subsystems to one another is otherwise explained by their having the lowest level in common; he compares and contrasts cerebral and cerebellar maladies with one another as being complementary inverses, as in case of extensive cerebellar paralysis (trunk, legs, arms), and rigidity as the corresponding opposite of the double hemiplegia (arms, legs, trunk), and rigidity of an advanced case of paralysis agitans; in the former the attitude is opisthotonic, in the latter slightly emprosthotonic.

The relations of the several levels to one another are manifested in the degree with which the organs of the digestive, circulatory, respiratory and thermal system, are represented by the lowest and highest levels.

The action of the emotions on the heart, and of the emotions and will on respiration, are illustrations of organic functions influenced by the

highest level; that is, by the anatomical sub-strata of states of consciousness.

He describes three factors in the regulation of the respiratory system: (1) Nervous regulation, through the respiratory centre; also by impulses ascending the vagi and by the high levels. (2) Mechanical regulation, from elasticity of lungs and costal cartilages. (3) Chemical stimuli—as effete nitrogenous products and deficiency of oxygen. There is a round-about relation between the lowest level and these highest levels; from high tension, less. It has been suggested by Greg, in his *Enigmas of Life*, that bodily pain and disease may directly contribute to the loftiest efforts of the intellect.

Venous blood may act as a "natural stimulant" of the respiratory and other centres of the lowest level; in severe cases of emphysema with bronchitis it is thought to annul the function of the lumbar centres concerned with the knee jerk. Asphyxia first exaggerates, and then causes loss of the knee jerk in dogs. There is greater activity in lower nervous arrangements of the highest level consequent on loss of function of the highest, caused by supervenous blood over action of the lower from the loss of control by the functionless highest.

He gives the following scale of fits: Lowest level fits, middle level fits (the epilepsy described by Bravais in 1827), and highest level fits (so-called idiopathic epilepsy). After a discussion of respiratory fits he concludes that, in comparison with the adult, the lowest level centres are in infancy little governed (positive motor), and little controlled (negative motor), by the highest levels; that the lowest centres are, in consequence, naturally healthily more excitable than in older people.

Following Herbert Spencer, he describes four factors in the evolutionary ascent: (1) increasing differentiation (greater complexity); (2) increasing specialization (greater definiteness); (3) increasing integration (greater width of representation); and (4) increasing co-operation (greater association).

He then submits a comparison and contrast between middle level and highest level fits as dependent on discharges of levels of different evolutionary rank. The middle level fits he calls epileptiform seizures, from a discharge lesion in the Rolandic region. Highest level convulsions are those of idiopathic epilepsy from discharge lesion of some part of the prefrontal lobe (motor province of the highest level). He concludes that there are certain differences in convulsions dependent upon difference in quantity of energy and on different rates of its liberation in each kind of fits.

In discussing dissolutions from disease, he would have us bear in mind not only the dissolution, which is effected by disease, but the evolution going on in the undamaged, healthy remainder. He illustrates with a case of insanity: "Whilst the negative affection of consciousness in every insanity answers to the dissolution, loss of so much, the positive mental symptoms, illusions, delusions, etc., signify evolution going on in the healthy remainder; going on in parts which disease has spared; going on in the lower, but now highest, range of evolution. The most complex, etc., nervous arrangements, centres and levels, are the least organized;

the most simple are the most organized. Thus the centres of the lowest level are much more strongly organized than those of the highest level. If the 'vital' centres of the lowest level were not strongly organized at birth life would not be possible; if the centres of the highest level ('mental centres') were not little organized and, *therefore, very modifiable,* we should make few new acquirements. The highest level is supposed to be less and less organized and, therefore, less and less automatic the higher the 'layer.' The highest layers are the least organized, least automatic and are attended by most vivid consciousness.

"The main elements of that part of mind which is commonly distinguished as intellect from the other part called emotion or feeling, are visual and tactual ideas and words. Much the greatest part of mentation, both in the sane and the insane, is carried on in visual ideas. He thinks that the physical basis of the psychical things we call words are audits—articulatory nervous arrangements and suggest that highly complex and special movements of the tongue, lips and palate are represented in the highest level. He concludes that taking into account not only the physical 'bases of visual and tactual ideas and of words, but also the vast number of connecting fibres implied by the innumerable combinations into which these ideas and words enter, that the motor province of the highest level, if not more voluminous, is yet more intricate than the motor province of the middle level; and that destruction-lesions of the former are more tolerable than equal-sized destruction-lesions of the latter; the reverse for discharge lesions."—J. U. Barnhill, *Periscope of Neurology.*

A patient suffering from *tabes dorsalis,* who recently came under the observation of Dr. Spiller, in the clinic for nervous diseases, presented in a very evident manner the sign known as "*giving way of the legs.*" He stated that while walking his knees, sometimes the right, sometimes the left, suddenly gave way and he was obliged to catch hold of some object to prevent himself from falling. He was always able to regain his equilibrium within a minute or two, and to continue his walk until the unpleasant event recurred. The sign was most evident when the patient was walking on uneven ground, but was not absent when he was on a level floor. His knees sometimes gave way when he first got out of bed in the morning.

Dr. Spiller states that this is not an uncommon sign of tabes dorsalis. The credit for making it known has been given to Buzzard. Charcot believed that is is often the first sign of transition from the pretabetic to the fully developed tabetic period. He did not think it is caused by a sudden sensation of pain in the lower limbs. The patient afflicted in this way has something of the feeling one experiences when he is unexpectedly struck behind the knees and finds his legs giving way under him. The cause of the sign is not well known. It cannot be the result of muscular weakness, for it occurs rather early in tabes and at a period of the disease when weakness is not very evident. It may possibly be due to the condition of the sensory nerves, which often early in the process are

unable to convey normal impulses to the spinal cord. It may be due to the fact that the impulses normally conveyed from the muscles about the knee joints are suddenly arrested, for some cause or other, and are unable, for the time being, to reach the spinal cord over the diseased sensory fibers. The patient in this way may lose all knowledge of the position of his limbs and standing erect, which is a position in which there is most perfect co-ordination of muscular movements, may become impossible. At best we can only theorize in giving any explanation for this sign.

BRIGHT'S DISEASE.

TREATMENT.—There is a good deal of mischief done by iron in Bright's disease. Basham's mixture in Bright's disease was never suggested for any directly curative purpose, but simply as a remedy for the anæmia which is so conspicuous a symptom in many cases, and for this purpose it still is and always will be useful. But not every case of Bright's disease is anæmic, and, as iron has no specific, curative effect, it is clearly not indicated in non-anæmic cases. Nay, more, it is often harmful. It may be laid down as a rule to which there is almost no exception that iron is not indicated, and should not be prescribed in cases of acute Bright's disease. On the other hand, after the acute symptoms have passed away and convalescence sets in, iron is often very useful.

A second class of cases in which iron is contraindicated is chronic intersititial nephritis, in which it is more promptly and dangerously harmful than in any other form known of Bright's disease.

The form of Bright's disease in which iron is best borne is chronic parenchymatous nephritis. And as this is apt to be associated with more or less anæmia it becomes a most valuable remedy in overcoming this symptom. Even here the doses given are usually needlessly large. The author's practice is to determine the proper dose by an examination of the stools, and if these are decidedly blackened, too much is being given. On the other hand, a slight coloration may be permitted. Basham's mixture is no more diuretic than the bulk of water which constitutes its menstruum. James Tyson (*Jour. Amer. Med. Assoc.*, July 23, '98).—*Sajons' Monthly Cyclopedia*, Sept. '98.

ALCOHOL INJECTIONS IN CANCER.—In the *Philadelphia Medical Journal* of May 28, Kuh makes a second contribution to this treatment. He reports cases and discusses the work of Hasse of Germany, in curing fifteen out of eighteen well authenticated breast cancers. He believes one may safely begin with 30 per cent. injections, increasing to 40 or 50 per cent., as the tolerance of the patient permits. He says that in cases in which the growth has become adherent to the pectoral muscle, Hasse always advised the operation, followed by alcohol injections, and again, all relapses should be treated or prevented by the injection method, as the pitiful insufficiency of surgery in relapses is too well known to be dwelt upon.—*Jour. Amer. Med. Assoc.*

NOSE AND THROAT.

IN CHARGE OF

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DIPHTHERIA TREATED BY ANTITOXIC SERUM IN UNIVERSITY COLLEGE HOSPITAL, LONDON, IN 1895, 1896, AND 1897.

BY SYDNEY MARTIN AND G. BERTRAM HUNT.

This very full report should be read by everyone who is still indisposed to use antitoxine. It is also valuable in settling some disputed points in the methods of use.

In all, 178 cases are reported in the two years. These are the total cases admitted to the diphtheritic wards of the hospital. Severe cases alone were taken in, especially those with laryngeal obstruction. In 149 cases the K.L. bacillus was found, and in eighteen repeated examinations failed to find it.

These latter cases are classed as diphtheria, on the ground of clinical symptoms or subsequent paralysis.

In all these cases a subcutaneous injection of anti-toxine was given within 12 to 24 hours after admission—the dose varying somewhat from time to time.

In 1896 the dose was between 2,000 and 20,000 normal units, with an average of 7200.

In 1897 the dose was between 4,000 and 12,000, with an average of 7,000 to 8,000.

The serum used was that of Sims Woodhead, of the Royal College of Physicians and Surgeons' laboratories, usually of a strengh of 4,000 normal units in 5 c.c.m.

[It is necessary to explain here that the serum used by us (as manufactured by P., D. & Co.) is of a different standard, this being 1,000 to 1,500 antitoxic units in 5 c.c. This would mean that the average dose in 1896 was approximately 1,800 units, and 1,750 to 2,000 units in 1897.—D. J. G. W.]

It is important to notice that local treatment was employed in almost all cases, varying from swabs of Chloride of Zinc ten grains in the ounce, to sprays of mercury bichloride, or douches of chlorine water, and in any case steam sprays of soda bicarb. were applied every two hours. This local treatment was given because of the frequent presence of pus and other septic micro-organisms besides the diptheritic bacillus, and was con-

sidered necessary for the attainment of the best results. When it was omitted glandular abscesses developed in the neck, which were not seen when antiseptics were again employed.

Tracheotomy was performed for laryngeal obstruction; in no case was intubation resorted to.

In discussing the effects on mortality, the averages of four pre-antitoxine years are compared with those of '95, '96, and '97, and care is taken to eliminate sources of error by classifying the cases according to age, the involvement of the larynx, and the day of disease on which the patient was admitted. It may be noticed that the percentage of the total number of cases under five years of age in the pre-antitoxine years averages 56, as compared with 64 in the antitoxine years. Again the percentage of the laryngeal cases to the total number averages 45 in the pre-antitoxine years, and only 34 in the antitoxine period. The above differences may be, therefore, offset against each other. The average of the day of admission was practically the same for both periods.

TABLE I.—*Mortality of All Cases.*

Year.	Age.	Laryngeal Cases.			Pharyngeal, Nasal, etc.			Total.		
		No. of Cases.	Deaths.	Percentage Mortality.	No. of Cases.	Deaths.	Percentage Mortality.	No. of Cases.	Deaths.	Percentage Mortality.
1891	5 years and under....	25	18	70.0	14	4	18.7	62	27	*43.5*
	Over 5 years.	5	3		18	2				
1892	5 years and under....	21	14	60.0	12	1	14.3	60	20	*33.3*
	Over 5 years.....	4	1		23	4				
1893	5 years and under....	32	24	78.0	26	6	10.9	105	39	*37.0*
	Over 5 years.....	9	8		38	1				
1894	5 years and under....	26	3	47.0	8	5	30.0	64	25	*39.0*
	Over 5 years	8	3		22	4				
1895 (1st antitoxin year.)	5 years and under....	23	7	33.3	25	10	24.4	75	21	*28.0*
	Over 5 years.....	7	3		20	1				
1896	5 years and under....	18	7	40.0	30	6	10.0	90	16	*17.7*
	Over 5 years.....	4	2		38	1				
1897	5 years and under....	24	6	23.5	29	7	13.0	88	15	*17.0*
	Over 5 years.....	10	2		25	—				

In the above cases there was an average of 32 tracheotomies per year, with an average death rate of 20 previous to 1895, while in the antitoxine period the cases averaged 24, with a death rate of 6.33 per year. In other words the mortality percentage is 64.5 without antitoxine, as compared with 26.4 after its use.

It is also noticed that the operation was done on admission or within 12 hours, and no case which, on admission, was free from laryngeal symptoms developed them in the hospital This amazing statement shows forcibly the power of the antitoxine to prevent the spread of the membrane.

CAUSE OF DEATH.

It is necessary to state the causes of death, and especially to examine closely for any indication of spread of membrane in fatal cases after the antitoxin injection has been given. Of the 31 fatal results during the last two years, 11 died between the third and eleventh days, with suppression of urine usually accompanied by severe vomiting, the typical toxic anuria of diphtheria. In all these cases the membrane had disappeared before death. It was at first asserted that the antitoxic treatment increased the mortality from this complication, yet larger experience has shown, as in the cases collected by the Committee of the Clinical Society, that the serum treatment has neither increased nor diminished the number of deaths from this complication; but as the deaths from other causes have been much reduced the deaths from toxic anuria probably bear a greater proportion to the total number of fatal cases, and so have come into greater prominence.

Among the other causes of death are, membrane in the bronchial tubes eight cases, all tracheotomized without complete relief; pneumonia, five; cardiac failure, two; gastro-enteritis, two; pneumo-thorax, one.

Nearly all of the fatal cases, except those dying within forty-eight hours of the commencement of treatment were free from membrane at the time of death, and in none was there any evidence of extension of the membrane after the injection.

In estimating the effects of the treatment according to the day in which it was used, the table given shows, as in other records, a marked lessening of the death rate *only* in such cases as were treated during the first four days of the disease.

The effects of the antitoxine on the temperature have been brought out clearly also; the dropping of the temperature to normal before the fourth day occurred in 83 per cent. of the cases, as compared with 48 per cent. in the pre-antitoxine days. All afebrile and fatal cases are included. The result is therefore the more striking.

The effect of antitoxine in preventing paralysis could not be estimated, as some cases developed it after leaving the hospital. The effects, also, on the duration of the membranes in the throat and on albuminuria were not estimated.

Of the evil effects of the administration of antitoxine, the report shows that rashes occurred in 49 cases; urticaria, 19; erythema, 16; papular, 14. Half of these occurred between the sixth and tenth day. Usually the rash caused no disturbance or uneasiness except itching. In 13 cases, however, the temperature rose, and in 4 there were joint pains with synovial effusion affecting large joints only. In 3 of these the temperature reached 104 degrees.

CONCLUSIONS.

1. The great reduction seen both in our total and tracheotomy mortality can be only due to the treatment with antitoxic serum, for the examination of the cases reveals no other factor capable of producing this result.

2. The full benefit of antitoxin was not obtained until fairly large doses (on an average between 7,000 and 8,000 normal units) were employed: the mortality then fell from 28 per cent. in the first antitoxin year to 17-7 and 17 per cent. in the next two years. Each case of diphtheria should have an initial dose of not less than 6,000 normal units.

3. Since antitoxin has but little effect on the mortality when given after the fourth day, it should be administered as soon as the patient is seen without waiting for the bacteriological diagnosis, and the full dose should be given immediately in one injection, not in divided doses on successive days.

4. Not only does antitoxin reduce the mortality, but it also distinctly lessens the severity of the disease in cases which recover. This is best shown by the effect on the duration of the fever, which in our series lasted only four days in a very much larger proportion of antitoxin than of pre-antitoxin cases.

5. The effect of antitoxin is chiefly seen in its specific action on the diphtheritic membrane, as shown by the cessation of its spread and more rapid clearance, and also by the greatly lessened mortality of such cases, in which the chief danger is from extension of membrane. The mortality of tracheotomy cases especially was reduced from 65.5 to 26.4 per cent., a greater reduction than seen in the other cases.

[*Abstracted from B.M.J., Sept. 3, '98.*—D. J. G. W.]

ŒSOPHAGOSCOPY.

KIRSTEIN (*Berl. klin. Woch*, July 4th, 1898) first refers to the history of œsophagoscopy, and its revival within the last two or three years. He mostly places the patient in the sitting posture, and does not use cocaine. Apart from such well-known contraindications as aneurysm, etc., the patient's neck may be stiff, or the mouth cannot be held open wide enough. There are a certain number of patients in whom œsophagoscopy is very easy; in others such an amount of force has to be used as to make it doubtful whether it should be employed. The difficulties all lie in the upper part of the œsophagus, but the tongue constitutes the chief obstacle. The tube of the œsophagoscope must press the tongue forwards or to one side. The author chiefly discusses the first form or median œsophagoscopy. The tongue may be so resistant that there is no possibility of pressing it down so as to obtain a view of the arytenoids which cover in the entrance into the œsophagus. If this is so, median œsophagoscopy is impossible. The œsophagoscope may strike against the vertebral column, and be with difficulty pushed on. If cocaine is used the dorsal surface of the epiglottis should be anæsthetised. The author maintains

that autoscopic examination shows whether it is possible to use the œsophagoscope. He finds that a portion of the cords must be visible by autoscopy, if the other instrument is to be used with ease. He thinks that some fourth of the cases lend themselves readily to œsophagoscopy. If the procedure is difficult, this does not mean absolute contraindication if the end to be obtained warrants the attempt. The lateral introduction, of the œsophagoscope has no real advantage over the median. Kirstein refers to the case of a sword-swallower, in whom he could easily see the whole of the larynx and the trachea and bronchi by autoscopy.

NATURAL IMMUNITY OF THE MUCOUS MEMBRANES OF THE RESPIRATORY TRACT.

BY HENRY LEWIS WAGNER, M.D., PH. D.,

Professor of Rhino-Laryngology, San Francisco Polyclinic (University of California).

(PRELIMINARY REPORT.)

"Experimental pathology recognizes at present two kinds of immunity; the natural and the acquired. The natural immunity not only exists within our body, but it also shows its activity on the mucous membranes; this is plainly demonstrated by the fact that bacteria are constantly carried to the surface of the upper respiratory organs by inhaling as well as by introducing our food without producing any local or general infection in our healthy body. On the other hand, should we take any of these bacteria from normal mucous membranes and place them in proper culture media, we will observe a rapid multiplication: and if replaced in sufficient quantity on the original mucous membranes, they will produce a certain diseased condition of these tissues."

My own researches have shown that the comparative scantiness of bacteria in the nose is due only to mechanical (physiological) devices, and I have been convinced that the activity of bacteria, if not too many in number, is checked by a certain "biological" process—induced by chemotaxis.

The results of my own researches are:

1. The *natural resistance* of the mucous membranes depends principally on the "activity of leucocytes."

2. The *action of these leucocytes on bacteria* does not consist in their "total" destruction—as observed in disinfection either by heat or by a chemical (coagulation)—but it consists in greatly "diminishing their activity" to form poisonous products (toxines, etc.).

This is explained, that leucocytes produce "*enzymes*," which are able to "impair the chemical structure of the bacterium body." These enzymes have apparently no effect on albumin or albuminoid substances, but they are able at blood temperature to convert cane sugar into glucose and to influence fluid starch and cellulose.

Therefore the cytoplasmatic defense of mucous membranes consist in disabling the foreign cell in its activity, either to form poisonous products

or to enter their tissues. In other words, the bacteria are "slumbering" on the mucous membranes, just as we meet such "latent life" in the vegetable kingdom, and in this "inactive state" the bacteria are carried away from our mucous membranes by the secretions and excretions.

Woodhead quotes Müller, who found, that the *onset of post-diphtherial paralysis* was primarily in the muscles of the palate, then in those of the eye, the other muscles of the body, and finally in the muscles of the heart. These paralyses occur usually after the fourth day, but comparatively early. Experimentally, in addition to the lesions of the peripheral nerves, alterations in the cells of the spinal cord have been noted. Experimental paralyses are comparatively rare. They usually occur where the local reaction has been severe with production of a necrotic area. The majority of cases appear on the eighteenth to the twenty-third day after injection. Woodhead reports 13 cases of post-diphtheritic paralyses occurring in guinea-pigs in which it is evident that the date of onset bears no relation to the severity of the local process. The symptoms are an early, slight rise of temperature, followed, during the paralytic stage, by a fall. This appeared to be due to the injection of the albumoses. The author holds that the subject requires further study. In the discussion Mott reported the examination of the nervous and muscular tissues of 5 cases, finding fatty degeneration of the muscles and sometimes Wallerian degeneration of the nerves. Baginsky stated that he believed that post-diphtheritic paralysis was less common than formerly. In a case examined by his assistant advanced degeneration was found in all parts of the nervous system. Goodall stated that the paralyses had increased since the introduction of the antitoxin treatment, but ascribed this to the greater frequency of recovery. Woodhead, in concluding, believed that antitoxin could not of itself produce paralysis. Cases of paralysis are now less frequent and less severe than before the employment of antitoxin.—*British Med. Journal*, Sept. 3rd, and *Philadelphia Med. Journal.*

Robinson considers recurring attacks of inflammation of the lingual tonsil of frequent occurence even in small children. The failure to recognize the condition is due to ignorance or lack of skill or of attention. The difficulty of examination makes the condition hard to recognize in young children, in whom it is likely to be confused with the irritative cough of beginning pertussis. The causes are the same as those that give rise to faucial congestion or irritation. The symptoms are irritative frequent cough, with little or no expectoration in the beginning, frothy expectoration after each paroxysm in a day or two, and, finally, a small amount of tough, thick muco-purelent expectoration occasionally streaked with blood. The cough is likely to be worse on lying down. There is often a sense of stricture of the throat which may be unilateral or bilateral. There is neither fever nor soreness. Examination shows the lingual tonsil to be red and swollen. The left side of the tonsil is more frequently enlarged than the right. The condition occurs oftener in the female than in the male sex, and lasts from one to two weeks. The best treatment consists in local applications of equal parts of tincture of iodin, glycerin, and water applied twice daily. External counter-irritation by

blistering or compound tincture of iodin is valuable. The inhalation of warm antiseptic vapors of creosote or cresoline by means of a croup-kettle is valuable in treating children. In persistent cases a change of air to an interior locality is almost sure to be beneficial.—*Philadelphia Medical Journal.*

Dr. Alice Ewing (*Laryngoscope*) recommends iodoform gauze as a packing in suppurating ears to afford drainage in place of the douche. She says that one of her instructors in Vienna told her: "If you forget everything else you have heard from me, remember never to douche the traumatic-ruptured drum membrane; if you do, it is sure to suppurate; if you let it alone it is sure to heal. The infection is in the external auditory canal, and blood serum is in abundance from the contused tissue, but if left dry it soon desiccates."

Bichloride or borated gauze answers better in some cases. Dr. Ewing records two cases and in recapitulation says: (1) The gauze packing is more correct in principle and more satisfactory in practice than anything in use in the treatment of chronic suppurating otitis media. (2) Incurable cases can be kept more comfortable with this than anything else. It saves the time of the specialist. (3) It is suitable and safe for home treatment. It has no contraindications.—Editorial, in *Atlantic Medical Weekly.*

BERNAY'S ASEPTIC SPONGE—An artificial product composed of cotton fibre subjected to many hundred pounds pressure, has certain characteristics that make it especially fit for use in the nose and nasopharynx. The sponge may be rendered absolutely aseptic and, as its power of absorption continues, it becomes much increased in size, thus being able to exert pressure limited only by the limitations of the cavity in which it may be placed. For these reasons it is efficient in the control of hemorrhage in the anterior or posterior nares, either following operations or in severe forms of epistasis; it serves as an excellent splint in the later stage of the Asch operation, or in the treatment of fractures of the nasal bones. Finally it may be used for conveying medication to various portions of the nose, or for producing irritation and moisture in cases of atrophic rhinitis.—*N.Y. Medical Journal.*

TREATMENT OF SUPPURATION OF THE EAR BY PICRIC ACID.—Lanoix (*Revue médicale*, September 14th) states that picric acid, being not only analgesic and antiseptic, but also keratoplastic, he was led to employ it in suppuration of the ear, when it is sought especially to cauterize the secreting membrane of the tympanum. He has attained unhoped-for benefits from its use. He uses the following solution:

℞ Picric acid..... 3 grains;
Alcohol of 90° ..... 45 minims;
Distilled water ..... 300 "
M.

The solution is left for some minutes in contact with the ear. The treatment induces desquamation of the tympanum and of the meatus, which calls for frequent cleansings. This action of picric acid contraindicates its use in cholesteatoma.

PAEDIATRICS.

IN CHARGE OF

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MORTI: THE DIAGNOSIS AND THERAPEUTIC VALUE OF THE LUMBAR PUNCTURE.

Archives fur Kinderheilkunde. B. xxiv., H., i, ii., 1898.

The report includes the author's observations made upon twenty-one cases.

Fifteen cases presented typical symptoms of basilar tubercular meningitis. Five were cases of epidemic cerebro-spinal meningitis, and one was a case of acute hydrocephalus following cerebro-spinal meningitis. Of the tubercular cases, two were punctured once each. Eight were punctured twice. Three were punctured four times.

The amount of fluid removed at one time varied from five to 115 c.c.m. In the majority the amount ranged from twenty to fifty c.c.m. In no case did harm result from the puncture. The operation was always performed under antiseptic precaution with antiseptic instruments. The fluid was not aspirated, but allowed to escape slowly or rapidly, depending upon the pressure. The fluid was always clear, and no tubercle bacilli was found in the specimens obtained.

Guinea pigs were inoculated into the peritoneum with the fluid from two of the tubercular cases. The temperature arose to 38° C., but subsided in a few days. In four weeks from the time of the inoculation the animals were killed and found to be free from tuberculosis. The effects of the withdrawal of the fluid were variable. The first puncture apparently exerted no influence on the pressure symptoms. In some of the cases, when considerable fluid had been removed, the stupor and the contracture were lessened, but returned in twenty-four to forty-eight hours.

In a few the temperature arose to 39° C., or 40° C., immediately after the puncture. The rise was temporary, however, and returned to the normal usually in twenty-four hours.

Inasmuch as the search for the tubercular bacilli in the cerebro-spinal fluid was negative, and the attempt at inoculation a failure, in cases that upon autopsy showed tubercular meningitis the author looks upon the Quincke puncture as of little diagnostic worth in tubercular meningitis. His results as a therapeutic measure were equally unsatisfactory.

Of considerably more value is the lumbar puncture in epidemic cerebro-spinal meningitis. The puncture was made in all five of the cases. In one only was it made for diagnostic purposes. In this case 10 c.c.m. was obtained. It was cloudy and contained pus cells. Through the means of a culture capsule-cocci were discovered. The autopsy confirmed the diagnosis. In another case two punctures were made at considerable intervals. At the first operation 15 c.c.m. of cloudy fluid was obtained which, upon microscopic examination and culture, showed pus cells and capsule-cocci. The case developed signs of hydrocephalus, and after an interval of several weeks the second puncture was made and 15 c.c.m. of clear fluid withdrawn, which proved to be negative.

The diagnosis of hydrocephalus was later confirmed in the autopsy.

In the third case two punctures were made in rapid succession. The fluid withdrawn was cloudy, showing the pus cells and the capsule-coccus. The second was opalescent and contained a few pus cells only. After an illness of eight months the child recovered.

In the fourth case two punctures were also made, the first during the second week of the illness. The fluid was cloudy and contained the pus cells and the capsule-coccus. Eight days later the second puncture was made, the fluid removed being clear, and containing no pus cells. The culture was also negative. After an interval of eight days the fever reappeared, and the child seemed to be quite ill generally, with symptoms of hydrocephalus. The nature of the symptoms was not given. The third puncture was now made, and 30 c.c.m. of fluid withdrawn. The examination was negative. The autopsy showed that the diagnosis of hydrocephalus was correct.

The fifth case recovered through the means of two punctures and internal medication. At the first puncture 30 c.c.m. of fluid was withdrawn containing pus cells. The culture was negative. Three days later the second puncture was made and 20 c.c.m. of clear fluid withdrawn. The medication consisted of sodium hydro-iodide and diuretin.

Puncture in the case of acute hydrocephalus following cerebro-spinal meningitis showed a clear fluid which was found negative in every respect. The autopsy on this case confirmed the diagnosis which was made unaided by the cerebro-spinal fluid. The author concludes as follows:

1. In tubercular meningitis the punctures were without diagnostic or therapeutic value.

2. In cerebro-spinal meningitis the examination of the cerebro-spinal fluid is of assistance in determining the diagnosis.

3. In cases of cerebro-spinal meningitis in which the acute stage is passed with resulting hydrocephalus, the examination of the cerebro-spinal fluid renders no assistance.

SURGERY.

Martin, Edward: A Statistical Study of Intussusception in Children, Based on Unreported Cases; Together with the Report of a Successful Operative Case. (*Therapeutic Gazette*, 1898. Vol. xxii., No. 6.)

The author believes that cases of intussusception are best classified under Raffinesque's system as ultra-acute, death taking place in the first twenty-four hours; acute, terminating between the first and seventh day; and subacute, lasting two weeks or upward. Invagination may be enteric, involving the small intestine only, or ileo-cæcal, the ileum and cæcum, together with the valve, being turned into the colon; ileo-colic, the ileum prolapsing through the ileo-cæcal valve, the latter retaining its proper position till secondary changes—it, together with the cæcum, is more or less displaced; colic, the invagination involving the colon only; and rectal, the seat of trouble being situated entirely within the rectum. Usually the upper segment of gut is received into the lower, but in Leichtenstern's 593 cases the reverse of this condition obtained in 1.5 per cent.

A retrograde intussusception secondary to the descending invagination is not so infrequent. In these cases the intussusceptum is surrounded by five layers of gut. This is probably due to a folding upon itself of the loose intestines and is said to occur only in the colon. It should be remembered that the intussusception may be double or triple.

Of many predisposing causes of intussusception, intestinal trauma (263 cases out of 593), polyp, especially that incident to a sudden jar or jolt, gastro-enteritis, and the straining incident to constipation, should take first rank.

The direct cause of chief importance is an irregularity in the nervous mechanism of the intestines which allows of a sudden spasmodic contraction of a portion of the bowel, while its adjoining conjunction may be entirely relaxed. This will apparently account for the intussusception of agony not rarely encountered in the course of *post-mortem* examination, and developed probably either during or immediately after the death struggle. These invaginations are often multiple, are limited in extent, and show no inflammatory changes.

The fact that obstructive invagination occurs in children, is associated with colic, is observed after abdominal injuries, and sometimes follows gastro-enteritis or typhoid fever, would all strongly suggest as probable causative factors disordered innervation.

After a very elaborate study of the subject the author believes that the conclusions which seem justifiable from a study of infantile intussusception are:

1. The affection is a rare one in any one locality or in any individual experience. The general impression among medical men to the effect that it is common has not the support of either hospital records, vital statistics, or personal inquiry.

2. Gastro-enteritis is a distinct predisposing factor.

3. The diagnosis of infantile intussusception from severe entero-colitis in the absence of tumor may be quite impossible. Fortunately tumor is present in over eighty per cent. of cases. Often it has not been found because search has not been made for it. Sudden and violent onset, frequent small blood-stained mucous passages, and the rapid minimizing of the quantity of feces passed, would suggest intussusception. Under such circumstances palpation should be practised, one finger being passed into the rectum, the other fingers of the other hand being applied to the ab

dominal surface. When there is reasonable doubt the child should be relaxed by ether before such examination is made. The tumor is not necessarily on the left side, being found in a small percentage of cases to the right.

4. The first attempt at reduction should be thorough and final. This is most likely to be successful if practiced upon the thoroughly anesthetized child. The method of choice is the slow injection of normal saline solution by gravity at a temperature of about 102°F. and under a pressure of at first four feet—not greater than eight feet after ten to fifteen minutes. Inversion and gentle massage aid in accomplishing reduction.

5. Reduction by injection should not be attempted in hyper-acute cases which have lasted more than twenty-four hours, nor in acute cases which have lasted twice this time. Immediate operation is safer for such cases.

6. Reduction by injection having failed, there should be immediate recourse to celiotomy and direct disinvagination, or if this procedure is impossible, ligation and resection of the adherent and sloughing mass practiced through a small incision through the intussuscipiens, and union of the divided bowel as in the Maunsell method. The portion of the gut cut away may be delivered through the anus.

ACNE VULGARIS.—As an alternative form of treatment in this troublesome disease, the following can be strongly recommended:

Direct the patient to carry out the usual course of shampooing the face with water, as hot as can be borne, and some bland un-irritating soap, and then, after carefully drying the skin, to apply the following lotion once a day:

Hydrargyri bi-chloridi	gr. xii
Spiritus vini recti	ʒ vi

The effect for the first few days will be, possibly, to render the condition worse, and make the part hyperæmic, but after this the lotion causes no discomfort and prevents the formation of postules.—G. Gordon Campbell, in *Montreal Medical Journal.*

MODERN BULLET WOUNDS.—"The destructive character of the bullets when they strike a hard surface was shown in the wounds treated during the recent riots in Milan," states the *Klin. Therap. Wochenschrift* of June 26. "Every arm or limb wounded had to be amputated; every person shot in the trunk died, and whenever the skull was struck, the top was lifted up like the cover of a box and the brain matter scattered around."—*Journ. Am. Med. Assoc.*

TO REMOVE A FOREIGN BODY FROM UNDER THE NAIL.—Alternately soften the nail with the end of a match dipped in caustic potash and scrape with a piece of glass until the object is reached.—*Journal de Méd. de Paris*, July 3.

The Canada Lancet

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Editorial.

DOMINION REGISTRATION.

At the request of Dr. T. G. Roddick, of Montreal, several of the medical men of the city met in the Biological Buildings, Queen's Park, on October 22nd, to discuss with him some details of the scheme on which the Canadian Medical Association has been for so many years intermittently at work—the securing of Interprovincial Registration of medical licenses. There were present Doctors Mullin, of Hamilton; Geikie, Machell, Graham, A. A. Macdonald, Britton, Thorburn, Cassidy, I. H. Cameron, Williams of Ingersoll, R A. Pyne, Starr, Roddick, Fotheringham, Reeve, Spence, Dickson of Pembroke, McPhedran, and A. H. Wright. It will thus be seen that both the important medical teaching bodies of the city, and the Medical Council of the Province, were well represented.

Dr. Roddick in a very lucid manner gave the history of the movement, and submitted a sort of memorandum, prepared with great care with the advice of the best legal talent, including some of the Supreme Court Judges at Ottawa. In this it was made clear that the Provinces, having jurisdiction each only within its own domains, cannot legally do anything

in any matter educational calculated to affect matters of the same kind in another Province, so that only the Dominion Parliament can initiate and carry through such a scheme. And even it can do so only in one way, permissively, not with compulsion, not making an arrangement by which a license taken in one Province can be registered in another, this is clearly *ultra vires* of the Dominion authorities, but one by which, if the medical authorities of any or all of the Provinces so please, they may accept as valid within their own Province a certificate issued by a Dominion Board appointed by the Governor-General in Council. In other words, Interprovincial Registration being *ultra vires* of the Provinces, a Dominion Registration is to be sought to be established, which the Provinces may accept or not as they see fit,—retaining and exercising meantime all the functions which they at present fulfill. The details of the scheme, so far as they have been elaborated, must be left for future discussion, as, for instance, the standard to be fixed for such a certificate, both at matriculation, at primary and at final examinations; the most desirable mode of selecting the members of the Dominion Board: the effect of such a plan on the machinery now existing and on the revenues of the Provincial Councils; whether or not such legislation should be retroactive, and scores of similar questions, many of which it would almost seem to be necessary to work out in practice to discover the difficulties or complications to which they would lead. These details will come to light probably very soon.

In the meantime, the discussion, which was shared by nearly all present, revealed a remarkable unanimity of feeling as to the desirability of some such legislation, which will probably be introduced at the Dominion Parliament in due time by Dr. Roddick. The "Greater Britain" spirit prompts one to favor it, as the holder of the larger license would be placed on a par as regards British registration with the holder of the Australian and other colonial qualifications, which are accepted in Britain, while our probably superior ones are not because they are not issued by the central authority of the colonial unit. The same tendency to closer national and imperial union favors it, the spirit of disunion and provincialism is in marked popular disfavor at present, and long may it be so. Apart from the undoubted difficulties of detail, the general idea is, in our opinion, likely to be exceedingly well received by both profession and public at large.

SCHEME FOR THE ECONOMIC TREATMENT OF INEBRIATES.

In a aper on the treatment of pauper inebriates read by A. M. Rosebrugh, M.D., Toronto, at the recent meeting of the Canadian Medical Association, he recalls the fact that a Commission appointed by the Ontario Government in 1890 strongly recommended the establishment f one or more industrial reformatories for inebriates in the Province. This recommendation has been endorsed by the Ontario Medical Association as well as by a large number of other influential bodies. Notwithstanding this the Ontario Government declines to give effect to these recommendations on the ground that the number of inebriates in the province is so large that it would be impossible to undertake the

great expense involved in the erection of buildings and the maintenance of the inmates.

Under these circumstances, the Prisoners' Aid Association, of Canada, for some time past has been looking about for some plan less expensive that might be adopted at once for the scientific treatment of these unfortunates, pending the establishment of a reformatory or reformatories in Ontario. In January last, Dr. Rosebrugh was asked by the association to visit institutions, interview specialists, and, if possible, formulate a scheme for the economical treatment of pauper inebriates. This was done and the scheme submitted to the association.

The following is an outline of the plan proposed:—

1. The appointment by the Provincial Government of an inspector of inebriate institutions. This inspector should be a qualified medical practitioner who has made the medical treatment of inebriates a special study.

2. The inspector should organize in the city of Toronto, a hospital for the medical treatment of pauper male inebriates of the more hopeful class, and in other cities of the Province, an inebriate department in the existing general hospitals, more especially for pauper male inebriates.

3. An industrial reformatory should be established on the farm colony plan for the custody of the more hopeless or incorrigible class of male drunkards, and where they should be detained on indeterminate sentences.

4. In the adoption of scientific medical treatment, the Kerr-Crothers system or general plan of treatment is recommended. In the interests of science and good morals, proprietary remedies should not be used.

5. The adoption of the probation system and giving a helping hand to patients subsequent to treatment for inebriety.

6. In the case of habitual female drunkards, my recommendation is, that they be sent to the Provincial reformatory for the full term of two years, and that this be repeated in case of relapse. In the case of the more hopeful class of female drunkards, I recommend a few weeks' special treatment in any of the existing homes or refuges for females, followed up by subsequent judicious supervision. Arrangements to this end should be made by the Government Inspector, who should also inaugurate and have supervision of the "probation system."

As will be seen, there are two unique features in the scheme proposed; firstly, treating inebriate patients in the General Hospitals, and, secondly, the adoption of machinery for finding employment for and giving a helping hand to patients subsequent to treatment for inebriety. Reformed men cannot be expected to remain reformed if they fail to obtain employment.

The plan proposed involves the appointment by the Government of a Superintendent or Inspector, and the appointment of local agents for finding employment and giving a helping hand generally to reformed inebriates.

This scheme has not as yet been presented formally to the Ontario Government, but the Government Inspector of Hospitals, Prisons, etc., is understood to favor the plan. It is also endorsed by Dr. T. D. Crothers, of Hartford, Conn., and Dr. S. Lett, of Guelph, Ont.

Dr. Rosebrugh suggests that the proposed scheme be adopted in each of the other provinces of the Dominion.

Editorial Notes and Clippings.

THE ONTARIO MEDICAL LIBRARY ASSOCIATION.

Again we desire to refer to the Library, and remind our city confreres that they have it within their power to make use of the volumes of the Association by the payment of a merely nominal fee, and that our country friends, by a post card to the Secretary, may do likewise at the mere cost of the express charges. In addition to this, the Library of the Surgeon General of the United States at Washington, the largest in the world, may. through the Ontario Medical Library, be consulted in the same way, For some time a substantial deposit has been kept in Washington to the credit of the Ontario Library, for the purpose of recouping it for the possible loss of any of its books. This arrangement has existed for some time, and yet few of the profession, except perhaps the officers of the Association, are aware of this fact, and also the easy manner in which they may consult the works of the largest medical library not only on this continent, but in the world, with little or no trouble or expense, the Secretaries of the two libraries doing all the work therewith.

The work and worry to the profession here in regard to consulting any book, or reading up any subject is reduced to a minimum, thanks to the energetic Secretary. It is not necessary for you to go yourself and look over shelf after shelf until you find what will help you. Simply write or telephone the subject you wish to investigate, and the Secretary will do the looking up and advise you promptly of the result. It is a great comfort at times to be able to lay one's hand on the latest literature bearing upon some particularly puzzling case.

A Lotion for Itching of the Anus.—

℞ Sodium hyposulphite..... 30 parts.
Carbolic acid ..... 5 "
Glycerine..... 20 "
Aq. dist.....450 "

M. Compresses wet with the solution are to be applied to the anus frequently.—Penzold, *Independance Medicale.—N. Y. Polyclinic.*

Otitis Media.—Bolt recommends in cases of purulent otitis media, where operative procedures are either contraindicated or not permitted, the following:

℞ Storax .....
Bals Peru.....aa grs. iv
Alcohol .....
Aqua distil .....aa ℥ ijss

M. Sig.—Drop into the ear p. r. n.

Book Reviews.

A Text Book of Materia Medica Therapeutics and Pharmacology. By George Frank Butler Ph G., M.D., Professor of Materia Medica and Clinical Medicine in the College of Physicians and Surgeons etc., etc., Chicago. 2nd Edition, revised, 1898. Philadelphia, W. B Saunders. Toronto, J. A. Carveth & Co., Agents. Cloth, $4.00; sheep and half morocco, $5.00.

One is struck at first, especially on reading the dedication, "to the medical students of the United States," at the outcropping again of that "little America" spirit which has produced "American Midwifery," "American Surgery," "American Dentistry," and so on through the whole list of those arts and sciences whose boast it should be that they are free from the trammels of time and space, and belong in fee simple to the whole world. But the book is a most useful one. The soundness and freedom from "ism" and "pathy" of the views enunciated in the preface are most refreshing, especially as coming from Chicago, whence they do we confess remind us of "the voice of one crying in the wilderness" The arrangement of the book is very excellent, based on drug-classes, not on disease-groups, and the erudition and accuracy of statement wh ch characterize the discussions upon each group and member of the group seem to be above the average. In Canada we should recommend it as a text book for third and fourth year, but should expect first and second year men to content themselves with the study of the more exact sciences of chemistry, pharmacy, and materia medica in preparation for the more deductive study of therapeutics. If any mistake of judgment has occurred in the work, it is in the attempt to combine these two sets of subjects, the one inductive purely, the other deductive. While the errors of Homœopathy, Christian Science, and other medical sectarians are properly condemned, one finds in the account of the action and uses of, for instance, Ipecac, new statements such as have been made of the drugs by those hitherto held to be "irregulars," *e. g.* "Ipecac is not permissible for patients suffering from aneurysm, hernia, prolapse of uterus and rectum, etc." These statements should perhaps have been guarded by the explanation that no other emetic is either better or worse in the named conditions.

J. T. F.

An American Text Book of Gynæcology, Medical and Surgical, for practitioners and students, edited by J. M. Baldy, M.D. Second edition revised, with 341 illustrations in the text, and 38 colored and half-tone plates. Philadelphia, W. D. Saunders. Toronto, Carveth & Co 1898.

In this new edition, rendered necessary by the ever advancing knowledge in this branch of medical service, the care has been to render the consideration of the subject as complete as is consistent with a clear enunciation of the practical working of gynæcology. The collaborateurs are Byford, Cragin, Etheridge, Goodell, Kelly, Krug, Montgomery, Pryor and Tuttle, all eminent teachers and operators. The chapters on technique and after treatment are wonderfully good; but that, indeed, may be said of the whole work.

The typographical work is more than ordinarily good. The illustrations are clear, and relieve the letter-press of much cumbersome detail. Altogether, it is a work which will form a most valuable addition to any medical library. Pages, 718. Cloth, $8.00. Sheep or half morocco, $9.00.

J. L. D.

The American Text Book of the Diseases of Children, by American teachers. Edited by Louis Starr, M.D., Consulting Pædiaist to the Maternity Hospital, etc., etc., Philadelphia, assisted by Thompson S. Westcott, M.D., Instructor in Diseases of Children, University of Pennsylvania, etc, etc. Philadelphia, W. D. Saunders. Toronto Carveth & Co. 1898.

The Second Edition of Starr's already well-known work on Diseases of Children is to hand. It is larger by about fifty pages than the first edition, this increase in size being rendered necessary by new articles on Modified Milk, Lithæmia and a new section on Orthopædics. Many of the articles have been re-written, and much revision

has been made, thus bringing the work up to the very latest date in the field of pædiatrics. Among the names of the collaborat urs. of whom there are over sixty, chosen for especial fitness for the particular subject from among the greatest American teachers, we notice those of Ashurst, Blackader, Crandall, Da Costa, Musser, Pepper, Shattuck, Tyson, Thayer and others of almost equal note. This in itself should be a guarantee of the quality of work done, under the able editorship of Dr. Starr.

And when we come to examine the work, we are not disappointed. It seems all that could be desired, all that is necessary, in this important branch of the healing art, and we commend it to our readers, feeling well assured that their money will be well spent in securing it, and their time well employed in studying it. J. L D.

ELEMENTS OF HISTOLOGY. By. E. Klein M.D., F.R.S., Lecturer on General Anatom and Physiology, and J. S. Edkins, M.A., M.D., Joint Lecturer and Demonstrator of Physiology, in the Medical College of St. Bartholomew Hospital, London

In one pocket size, 12 mo , volume of 500 pages with 296 illustrations. Lea Brothers & Co., Publishers, Philadelphia and New York.

The new edition of this neat little work has been issued, not before it was needed. The recent advances in our knowledge and methods of investigation of the minute anatomy of many of the body tissues, have put out of date all old editions and many works, not old editions, which appeared longer than a couple of years ago. The changes are seen particularly in connection with the "Cell," the "Blood," and the "Nervous System." While the authors have sought, evidently, to avoid anything that is, as yet, only speculative, they have given the histological facts which improved methods have brought to light in a concise form, thus supplying a sure foundation, on which one can build from time to time as good brick is supplied him. The number and general character of the illustrations has been greatly augmented by the addition of a large number of micro-photographs of high order. It is, however, to be regretted, that colors have not been used as in some other recent works, rendering the illustrations more realistic pictures of the stained sections they are intended to represent. F. F.

DISEASES OF WOMEN, by J. C. Webster, B A., M.D., F.R C P., Edin.—At a time when numerous books are being issued upon almost every phase of medical thought and practice, it is desirable to carefully distinguish between works which are original or necessary, and those which simply cover certain well-worn ground, in a fairly meritorious manner. Of the latter class is Dr. Webster's volume. It is a compend and condensation of other works, and treats the general subject no better than many others have done before, while portions of the book are distinctly inferior to the work of preceding authors along this line.

Taking up the details of the volume it is found, for instance, that while Chapter IV. is devoted to troubles connected with puberty, the climateric and menstruation, no hint of remedy or help in the disturbances described is given, and neither student nor practitioner can therefore benefit in practice from its perusal. The treatment of minor therapeutics is upon the whole poor. Very little is said in the work upon the value of electricity in many diseases or upon the proper use of pessaries, nor is much attention paid to medicinal remedies for the relief or cure of many of the minor troubles and discomforts dealt with. In Chapter XII the treatment given for diseases of fallopian tubes is poor, as it is not sufficiently considered from the pallative side, but only from the surgical.

On the other hand, the chapters treating of the methods of examination and the description and uses of instruments, are specially good for beginners. The portions dealing with bacteriology, asepsis and antiseptis, are fairly good, though more attention might have been paid to the methods of sterilization. Chapter X., dealing with the peritoneum and cellular tissues is of value. To summarize, the work may be described as perhaps useful in an elementary sense to students, but not to practitioners. Other works, however, have covered even the former ground better. It, in fact, attempts too much, slurs over many things which ought to be dealt with, and leaves out especially much essential curative and relief treatment. The volume, undoubtedly, shows industry and a degree of knowledge on the part of the author, and though, as already said, hardly reaching to the necessary standard as a manual for students and practitioners, it may still afford much useful information to those who desire it in a somewhat elementary form.

PUBLISHERS' DEPARTMENT.

WET DRESSINGS IN SURGERY.

Presented in Section on Surgery and Anatomy at the Forty-ninth Annual Meeting of the American Medical Association held at Denver, Colo., June 7-10, 1898. By Thomas Osmond Summers, M.A., M.D., F.S. Sc., London, Professor of Anatomy and Orthopedic Surgery in the St. Louis College of Physicians and Surgeons, St. Louis, Mo.

This may well be called the "dressing period" in the evolution of surgery. Time was when the scapel alone was emblazoned on the escutcheon of the surgeon, and with the skilful incision his responsibility ended, nor did the dignity of his office admit of his performing what were then held as the minor and menial offices of "after treatment," which then was supposed to cover everything that followed upon the first brilliant sweep of the surgeon's glittering steel. There are no doubt some who hear me to-day who remember the dramatic toss of the knife behind him of the elder Gross when completing his incision, and the autocratic delivery of the case to his assistants for the dressing and treatment of the wound.

Even to this day the red, white and blue stripes of the barber pole tell of surgery's humble origin, and the bandagers and bone setters still roam through the villages of England, and the barber surgeons still apply the leech and cup for the more dignified practitioner. It remained for Sir Joseph Lister to break the spell of this *otium cum dignitate* which was the bane of all surgical progress, and teach the autocrats of the scapel that surgery meant much more to the organism than the mere solution of continuity along anatomical lines—that this indeed was the *avant courier* of the real principle from which all the almost miraculous achievements of modern surgery had been evolved. It was my privilege to be present at the presentation to the British Association, at Edinburgh, in 1875, by Professor Lister for the first time, of a clinical demonstration of his mode of surgical dressing, which opened to surgery new worlds to conquer. The case was one of ligation of the external iliac, and the elaborate dressings being removed, proved the triumph of his principle, though his venerable colleague, Professor Spence, almost on the verge of eternity, threw a well-poised Parthian lance at the rising genius of modern surgery. Since that day every operation, however simple in itself, has been one in which the surgeon "earned his bread by the sweat of his brow." No turning over the case to the unwashed student, for he whose records of success are proclaimed to day is the operator who leaves not his patient until the last jot and tittle of aseptic dressing has been fulfilled, for so exacting is this principle that *falsus in uno, falsus in omni* is the inflexible law of its operation.

As a matter of course, with the increase of such labor necessary as it has proved to be to insure surgical success, the ingenuity of man was set to work at once to simplify the methods without impairing the efficiency of aseptic surgery. So active has been the work in this field that apparatus of every device and design has been offered to the profession until its name is legion, and of making of dressings, as the patriarch said of books, "there is no end." As in everything else, the element of "faddism" or surgical "fashion" has been dominant even in this unesthetic field,

and the very men who pretend above all others to condemn the follies of feminine fashion are themselves afraid to say their soul is their own when it comes to operating and dressing of wounds before their lynx-eyed professional rivals. For years past, for example, it had been almost as much as a surgeon's name was worth to apply oleaginous preparations to surface lesions, although the very first treatment of wounds of which we read recommends the "pouring of oil," and, in the case of the good Samaritan, received the endorsement of the Great Physician himself.

There are some things, however, that fashion cannot forbid, and this is one of them—like Banquo's ghost "it will not down." Long before science had thrown its searchlights over the dark field of biogenesis, experience had taught the steel-clad warrior the virtues of Gileads's balm, and, from the shades of Olivet, where fell the tears of Him who came for the healing of the nations, man had learned to gather the oil for his wounded body. Since the discovery of the bacteriologic processes of infection in open wounds, there has been a gradually growing tendency to return to the ancient remedial agents which experience dogmatically taught were rationally indicated. In the last edition of that eminently practical work upon surgery by Wyeth, of New York, we find this positive and significent utterance upon the use of oil and balsam, the first surgical dressings known to humanity: "I know of nothing equal to this valuable preparation. The oil acts in a twofold way—the surface of the wound is moistened by it, while the liquid excretion from the wounded surface is carried off in the dressing by capillary attraction. The removal of moisture ripples the proliferation of the bacteria, and in this way aids in antisepsis."

In the process of repair, all the structural elements must be supplied from beneath the surface of the lesions so that the constructive metabolism would not be injured by the mechanical interference of the oil globules, which, as intimated in the quotation just made, "would cripple the proliferation of bacteria" which come from without. There are many wet dressings, which, if frequently renewed, show excellent results, but there are few cases which come before us in which disturbance of dressing does not do mechanical injury to the process of repair, besides exposing the wound to the entrance of pyogenic and other cocci while the dressing is being changed; while the retention of material which has expended its aseptic influence is a constant menace to the integrity of the organism at large. Lister was working to the overcoming of these difficulties when he devised his "paste" dresssing which, however, failed to meet the desired ends in many cases. The use of animal and vegetable oils is also open to the objection offered to solutions in dressings—the necessity of changing the dressing too often—but for a different reason, the tendency of the oils to become rancid, and this applies also to the keeping of such dressings prepared for use. Wyeth recommends in his oil and balsam dressing the sterilization of the oil before using, but admits that this is often impracticable, and recommends in this case the use of plain, cold castor oil of the shops.

It is therefore clear that to carry out the idea of a practical dressing it must be:

1. Antiseptic. This applies not only to the effect of the application to the part effected, but to the corporate substance itself, thus insuring it against auto-infection before applying.

2. Permanent. This is necessary in order to avoid too frequent removals, as well as to preserve itself from deterioration.

3. Non-irritating. There is nothing more delicate, more easily disturbed than the formative principles of tissue, so that care must be taken in the dressing of all lesions of surface lest the agents used should arrest the tender process of repair, as well as protect it from the invasion of destructive germs.

4. Constructive. While the majority of lesions, especially those of traumatic origin, if not interfered with by destructive germs, will heal rapidly of themselves, there are very many which require, not only this negative condition, but also a positive stimulation of function in the constructive elements of the part. Stimulation of cell growth, however, must not go to the extent of irritation, in which case there will be destruction instead of construction of tissue.

The fulfilment of these conditions has been the aim of the surgical pharmacist from the time when the first coccus wriggled across the field of the microscope and gave its first exhibition to the scientific investigator of its dance of death within the organism of man. But, amid all this elaboration of apparatus, it was to Sir Astley Cooper after all that the credit is due, for his foreseeing therapy leapt over, as it were, the dark chasm which separated the triumphs of his surgical genius from the science-illumined land of modern surgical pathology. It was he who, without the knowledge of the bacteriologic factor in the great problem of surgical treatment, by the intuition of genius gave to us the essential principles of external dressing for surface lesions. His formula, however, was open to the objection of violating one of the conditions herein laid down—that of permanence—in that, lard was used instead of petrolatum, which has been since discovered and is now substituted in the preparation known as Unguentine, which is an ideal formula constructed along the lines of that suggested by Sir Astley Cooper, but altered to the conditions of modern aseptic surgery. The irritating effects of the ordinary alum has also in some way been obviated, furnishing thus a typical dressing for surface lesions. For internal lesions that are to be immediately and permanently closed beneath the sutured integument, there are many valuable aseptic liquid preparations which we prefer to the too indiscriminate use of iodoform, aristol *et id omne genus*, but we are free to admit that for all external dressings we have found the highest fulfilment of modern aseptic or antiseptic surgery in the preparation just mentioned.

I am not sure whether this is a proprietory preparation or not, but this I do know, its formula is an ideal one and its results are certainly very satisfactory. It is about time we were looking around after labor-saving methods when we have to employ, at the simplest incisive operations, an extra attendent to wipe the sweat from our brows as the houri fans the Sultan's heated cheek—though our attendants are not all houris, nor are our cheeks fired with the congestion of a lazy passion. We are glad to see this unholy war against oleaginous applications coming to an end, just as we should be also glad to see the phlebotomy pendulum point to the nadir. In surgical politics I am a middle-of-the-road man—*In medio tutissimus ibis.—The Journal of The American Medical Association.*

THOSE WHO SHOULD NOT USE ALCOHOL.

Dr. Clouston, of Morningside Asylum, Edinburg, says no one should use alcohol:

1. Who have any family history of drunkenness, insanity, or nervous disease.
2. Who have used alcohol to excess in childhood or youth.
3. Who are nervous, irritable, or badly nourished.
4. Who suffer from injuries to the head, gross diseases of the brain, and sunstroke.
5. Who suffer from great bodily weakness, particularly during convalescence from exhausting diseases.
6. Who are engaged in exciting or exhausting employments in bad air and surroundings in workshops and mines.
7. Who are solitary or lonely, and require amusement.
8. Who have little self-control, either hereditary or acquired.
9. Who suffer from brain weaknesses the result of senile degeneration.

MORPHINE HABIT CURED BY BROMIDE POISONING.

MacLeod (British Medical Journal) reports the case of a lady, aged 25, a victim of the morphine habit for seven years, who by mistake took eighteen drams of sodium bromide in forty-eight hours. This induced profound stupor, but five days later the bromide was resumed and continued for three days at the rate of two drams per day. She did not recover from the profound bromism for ten days, but then found her appetite for morphine entirely gone. Profiting by the experience of this case "cured by mistake," the author deliberately stupefied his next case of morphinomania with bromide taking about two weeks to withdraw the morphine and increase the dose of bromide of sodium from thirty grains every six hours to fifty grains every three hours. During the third week the patient was very stupid. The drug was stopped on the twentieth day, after which the patient practically slept for three days, and was unable to stand for a week longer. Five weeks after the cessation of the bromide he had completely recovered from its effects and had lost all desire for morphine and alcohol.

The following advantages are claimed for this method, based, it must be remembered, on only two cases:

1. It did away with the suffering entailed by stopping the drug.
2. The patient could not bribe the attendants when the drug was withdrawn, he could not deceive his doctor, nor could he escape vigilance —he was powerless.
3. It acted equally well whether the patient wished to be cured or not.
4. No special attendants or establishment were needed; only nurses who took ordinary care.
5. No violence or excitement is likely to result from, nor a taste to arise for, bromide given in this way.—*Medicine.*

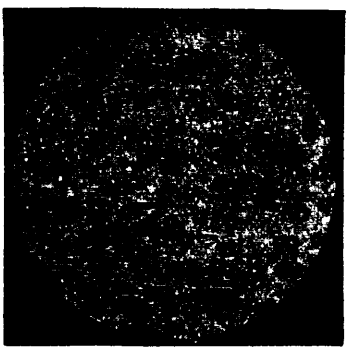
"The greatest therapeutic discovery of the age, and of the ages, is that where we cannot produce good blood we can introduce it."

What is Hæmatherapy?

A New Thing—and a New Name which, though literally translated (Blood Treatment), may not convey to every one a definite idea. It is a treatment which consists in opposing to a condition of disease the very power—good and sufficient Blood—that would naturally prevent it, that would still cure it spontaneously, and that actually does cure it spontaneously, wherever the blood-making work of the system is perfectly efficient; and therefore also *will* cure it, if a deficiency of the vital element be supplied from without, under proper medical treatment.

That Blood is such a power as here described, is an undisputed physiological fact. Its transmission from one animated organism to another, for the purpose of supplying a defect in the latter, is the substance of the Blood Treatment; and How to Do this, in different cases, is the form or description of the same. Blood may be taken from a healthy bullock (arterial blood—elaborated with due scientific skill); or it may be obtained in the well-attested living conserve known as bovinine, from any druggist; and may be introduced into the veins of the patient in either of four ways, that may be most suitable to the case: viz.: by the mouth and stomach; by injection, with one-third salt water, high up in the rectum; by hypodermical injection; or by topical application to any accessible lesion.

A Film of Bovinine: Showing the Blood-corpuscles Intact.



Micro-photographed by Prof. R. R. Andrews, M.D.

THE CURE OF PULMONARY CONSUMPTION

is one of the latest and most wonderful developments of Blood Power—introduced mainly by the mouth, and sometimes also by spraying bovinine into the trachea by an atomizer. Every week of judicious internal blood treatment, with proper medical and hygienic care, has resulted in steady improvement as to all symptoms, with scarcely an instance of check, much less of relapse, until complete apparent cure, and that in the more advanced stages of the disease. As further examples, may be mentioned: Anæmia, Cholera Infantum, Typhoid Fever, Hæmorrhagic Collapse, and many other of the most dangerous and aggravated diseases.

IN SURGERY: A CHRONIC ULCER,

of no matter how long standing or obstinate and aggravated character, can be cured with certainty—at least, the first instance of failure has yet to be heard of—by constant application of bovinine to the wound with proper surgical treatment and sterilization. Such cases are usually cured in from four to six weeks. So of traumatic injuries of all kinds; carbuncles, fistulas, abscesses, and even gangrene.

NUMEROUS CLINICAL REPORTS

of well known Physicians and Hospitals, where the Power of Supplied Blood is constantly relied on as a cardinal factor in the cure of disease and support of surgery, are at the service of every practitioner who desires to keep up with the progress of his profession, and may readily be obtained (including, of course, the technique and subsidiary treatments pursued) by applying to

THE BOVININE COMPANY, 75 West Houston Street, New York

Leeming, Miles Co., Sole Agents for the Dominion of Canada.

FERROL.—Although this preparation has been on the market for several years, no great effort has been made to bring it prominently before the profession. Those that have used it speak in the highest terms of the benefits derived from its use. The permanency of the emulsion has been established beyond doubt. We beg to call your attention to their insert, pages 11 and 12.

We are pleased to notice, as shown in advertisement elsewhere, that the Ferrol Company, of Toronto, have begun vigorous manufacturing operations again. The formula is an excellent one, an unusually stable emulsion, guaranteed to contain at least seven ounces of pure selected cod liver oil in fifteen, combined with phosphorus, phosphate of iron, and with or without creosote (Merck's best beechwood creosote only being used). The company deserves the support of the whole Canadian profession, for the following reasons among others: the product is a Canadian one, and of guaranteed excellence; it meets an undoubted need from a professional, as well as a public point of view; the methods of the company are entirely and distinctly in accordance with the best ethical standards.

New Hospital for Nervous Diseases

DR. MEYERS (M.R.C.S. Eng., L.R.C.P., Lond.) having found increased accommodation necessary, has removed his Private Hospital to Heath St., Deer Park. The situation of the new Hospital is the best and most attractive in the suburbs of Toronto, having three acres of ground shaded by fine old oaks, and laid out for tennis, bicycling, etc. The interior has been completely renovated and possesses all the necessary appliances for the treatment of

DR. MEYERS' PRIVATE HOSPITAL FOR NERVOUS DISEASES.

Diseases of the Nervous System

Hydrotherapy after the system of Wisternitz, including needle, Russian shower baths, etc., and electricity in its various forms are administered. It has a skilled masseuse and trained nurses, the head nurse having been for several years under Dr. Weir Mitchell, of Philadelphia.

Dr. Meyers devotes his entire attention to Nervous Diseases, having prepared himself especially for this work by several years study both in England and on the continent.

This is the only Institution at present in Canada devoted exclusively to the treatment of Nervous Diseases.

For Terms, etc., apply to

D. CAMPBELL MEYERS, M.D.,

Hours, 2 to 4 p.m. ***192 Simcoe St., TORONTO.***

IODOTHYRINE.

Extract from "Le Courrier Medical," Paris, July 17th, 1898, No. 29.

Iodothyrine will render very effective service in cases of fleshy goitre and with young patients. It is ascertained that Iodothyrine is the active substance of the thyroid gland; the experiments and observations of Messrs. Roos and Baumann have thoroughly demonstrated this. *Moreover its therapeutic action upon goitre is more pronounced and more rapid than that of Iodine or the thyroideal extracts.* Whereas metallic iodine promotes the production of the active matter which is elaborated in the normal thyroid body, the thyroideal therapy introduces into the system this substance itself already formed and ready to manifest its beneficial effects. Further Professor Poncet has proved that "Iodothyrine has a curative effect which is often rapid, in cases of fleshy goitre of moderate size and of comparatively recent origin, and with young patients." It is in such cases a therapeutic agent of the first order to which recourse may be had with advantage.

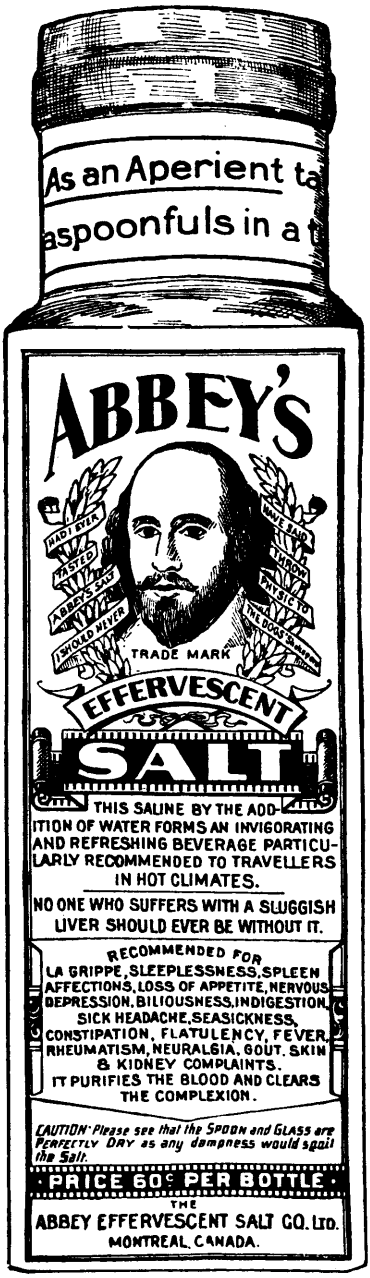
The Gleason Sanitarium, located at Elmira, New York, is an ideal place for rest as well as medical treatment. The autumn months in central New York are most delightful. All those who have visited the Sanitarium speak in the highest terms of the treatment, and pronounce the tab e first-class in every respect. Send for circular.

Parke, Davis & Company's price list for 1898 and 1899 has reached us, and represents an amount of scientific work and skilful business management scarcely to be equalled in any other place or business in the world. It was prepared in Canada, printed in Canada, and embodies an array of nearly five thousand preparations, every one of which is manufactured at the Walkerville laboratory of this great house. Not alone does this list set forth formulæ and prices of each item in the twenty-nine extensive lines manufactured by P., D. & Co., but it also contains in convenient form a vast fund of information which makes it permanently valuable for purposes of reference. Thirty-five pages are devoted to a most useful "property and dose list" of drugs from which Parke, Davis & Co. manufacture a fluid, solid or powdered extract, or concentration. Every paragraph in the eighteen pages of "Notes of Reference" is a valuable nugget of information.

The List is compactly and handsomely printed and is sent without charge to every physician who asks for a copy. Do not fail to write for one of these catalogues, and when you get it, keep it within easy reach, for it will answer a thousand queries relating to drugs, their uses, doses, prices and pharmaceutical preparations.

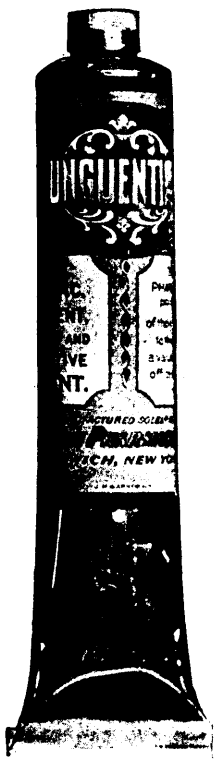
The Walkerville branch of Parke, Davis & Co. is keeping even pace with the growth of the parent-house, and deserves warm commendation for the scientific work on which this catalogue throws such a significent light.

ABBEY'S . . .



Effervescent Salt

A pleasant effervescing aperient, taking the place of nauseating mineral waters. Recognized and prescribed by eminent members of the profession in Great Britain, Europe and Canada.



AN ANTISEPTIC DRESSING IN AN ANTISEPTIC PACKAGE

PROGRESS IN SURGERY

Has been largely due to antiseptic preparations and aseptic methods One great want of the surgeon and general practitioner has been a surgical dressing that was thoroughly antiseptic put up in a thoroughly antisebtic container and applicable wharever inflammation was present. Unguentine in the collapsible tube fills this want. Observing physicians will admit that there is danger of contaminating an antiseptic ointment when put up in jars or other containers where a large surface is exposed when the lid or cover is left off or not securely replaced. Acting upon the suggestions of prominent physicians we take pleasure in offering to the profession Unguentine in the collapsible tube which gives an antiseptic dressing put up in a thoroughly antiseptic container.

Its advantages are many. The physician can carry it in his case without danger of soiling either instruments, labels or any of its contents. It is most convenient as the ointment can be easily applied on skin or bandage without the use of a spatula or other instrument and on account of size of the package you can always have the best surgical dressing for minor work with you,

It is the most economical, as it is the least expensive.

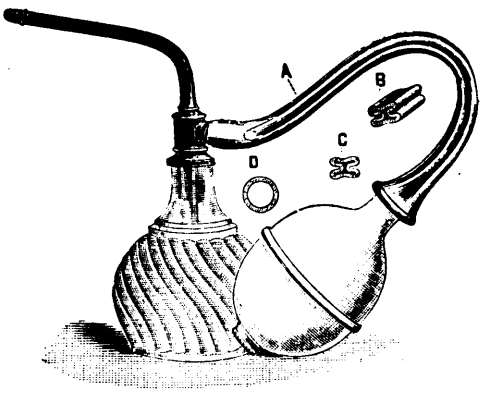
The tube holds about 2 ozs. and costs 25 cents. From the numerous letters of commendation we have already received from the profession we feel sure that the friends and users of Unguentine are pleased with this new container.

To introduce Unguentine to you in the collapsible tube we will be pleased to send you, upon request, one tube, free of expense.

THE INORWICH PHARMACAL COMPANY,

SOLE MANUFACTURERS, - NORWICH, NEW YORK.

We invite your attention to our **Alpha Atomizers.** Note the tube in its different views, A B C D.



This tube is simply an air reservoir into which the bulb empties itself. By gradually collapsing it forces the air forward, the full supply of air not being entirely exhausted before the bulb again fills the tubes.

WE CLAIM that our ALPHA ATOMIZERS produce an absolutely continuous spray with less labor to the hand than any other single bulb atomizer upon the market. Examine the cut and you will see how simple yet effective it should be.

For Sale by the Drug Trade, or

ALPHA RUBBER CO., Limited,

Illustrated Catalogue on Application. Montreal.

(Trade Mar.)

BAYER'S
PHARMACEUTICAL PRODUCTS

SOMATOSE A tasteless, odourless, nutrient meat [illegible]; it contains all the albuminoid principles of the meat in an easily soluble form. It has been extensively employed and found to be of the greatest service in consumption, diseases of the stomach and intestinal tract, chlorosis and rickets. It is of great value in convalescence from all diseases. SOMATOSE strengthens the muscles and stimulates the appetite in a remarkable manner. Dose for adults: a level teaspoonful three to four times a day with milk, gruel, coffee, etc.

IRON SOMATOSE (Ferro-Somatose). A first-class tonic, containing the albuminous substances of the meat (albumoses) organically combined with iron. Special indications: Chlorosis and Anaemia. Daily dose: 75 to 150 grains.

MILK-SOMATOSE (Lacto-Somatose). A strength giving food containing the albuminous matter (albumoses) of the milk.

TRIONAL A most reliable and quickly-acting hypnotic of the Sulfonal group. Dose: 16 to 20 grains, in a large cup of hot liquid.

IODOTHYRINE The active principle of the thyroid gland. It is most efficacious in Strumous Diseases, Myxoedema, Obesity, Rickets, Psoriasis, Eczema, and Uterine Haemorrhages. Dose: 5 grains two to eight times a day for adults; 5 grains one to three times daily for children.

LYCETOL Tartrate of Piperazine Anti-Arthritic, Uric Solvent. Has a marked effect on the diuresis. Dose: 16 to 32 grains daily.

ARISTOL An Iodine Cicatrisant which is an excellent odourless substitute for Iodoform and highly recommended for Burns, Wounds, Scrofulous Ulcerations, etc.

EUROPHEN A perfect substitute for Iodoform. Odourless and non-toxic. Has a covering power five times greater than Iodoform. Especially useful in Ulcus molle et durum.

LOSOPHAN A cresoltriiodide particularly efficacious in the treatment of all kinds of cutaneous disorders caused by animal parasites.

PROTARGOL A new silver preparation. Most reliable in cases of Gonorrhoea. Antiseptic wound healer. Excellent results in cases of Gonorrhoeal Ophtalmia. Solutions of ¼ to 2%. Ointments.

TANNIGEN An almost tasteless intestinal astringent. Most efficacious in Chronic, Acute and Summer Diarrhoeas. Adult dose: 8 grains every three hours.

TANNOPINE (Formerly "Tannone"). A new intestinal astringent. Special indications: Tuberculous and non-tuberculous Enteritis, Typhus. Dose: 15 grains, three or four times daily.

SALOPHEN Specific for Influenza, Headache, Migraine, Acute Articular Rheumatism, Chorea, Sciatica. Dose: 15 grains four to six times daily. In powders, etc.

PHENACETINE-BAYER **SULFONAL-BAYER**
PIPERAZINE-BAYER **SALOL-BAYER**

Samples and literature may be had on application to the

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