we have styled for convenience "hæmasepsin." Of this I have injected 50 c.cm. daily, and with practice this can be done with safety and certainty. But let no one lightly undertake these injections. They seem to be very easy, but they are, in fact, remarkably difficult to do. The vein is prone to roll by the side of the needle. The needle very often pierces the opposite wall of the vein, and so a troublesome hæmatoma is produced and also much pain. The arm should be ligatured as for venesection, the skin anointed with 1 in 12 carbolic and vaseline after having first been cleansed with 1 in 20 solution of carbolic acid. The needle should then be plunged boldly into the vein, the ligature loosened, and the tap of the burette turned. If the injection is not entering the vein a painful swelling will at once be observed, and the needle ought at once to be withdrawn. If the injection succeeds, the needle can be quickly withdrawn, and a little pressure suffices to stop all further hæmorrhage.

I advise that not more than 50 c.cm. of a 1 in 2,000 solution should be injected daily. Larger quantities and greater strength caused, in myself, first albuminuria, next copious hæmaturia, and lastly thrombosis of a vein in the arm.

[Further details of the technique and of the experiments mentioned were here given.]

Cough is generally increased by the injection, and the expectoration becomes thereby more frothy and mucous.

The cases selected for treatment were all such as showed pronounced lesions. Some were treated at the Brompton Hospital, others at St. Mary's Hospital, some as out-patients under Dr. Reid, of Lambeth, and others, again, in the country, at the Hendon Infirmary under Dr. Findlater. In all, results of about 70 cases are now available. Nearly all showed some improvement, and some have demonstrated absolute disappearance of tubercle bacilli from the sputum. One such case I show to-night; he had a marked "multiple pleuritic" outbreak of pulmonary tuberculosis, and I have previously shown that the prognosis of this condition is most grave. Yet he has now no tubercle bacilli in the sputum, he expresses himself as being quite well, and if you examine his chest you will find nothing more than here and there the indications of pleural adhesions. I have treated a few cases of putrid bronchiectasis by this method and with excellent results. I should expect the treatment to be of use in acute pneumonia.

I repeat that the method should not be lightly employed, and that it requires a considerable amount of practice to ensure certainty of injection. The progress of the patient also should be carefully watched.

[Since delivering the lectures I have been able, by modifying the solution, to employ a greater strength of the formic aldehyde.]

THE AFTER-HISTORY OF APPLICANTS REJECTED FOR LIFE ASSURANCE.*

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THERE is one event that happens unto all. The physician expresses it in terms of prognosis, the medical examiner for a life insurance company considers not the event itself, but the probable time of its fulfilment.

The insurance of houses and ships and goods against the casualties of fire and tempest is against a contingency which may not occur; the insurance of a man's life is not against any contingent event, but against that one which happens to all. It is only a question as to when it will arrive, and the medical examiner is to say if it will be delayed until the period prescribed by experience as embodied in the Mortality Tables. According to the "American Table," a man of 35 years of age is expected to live until he is 67 years old; it is the medical examiner's place to say if this be true of each individual case which comes under his hands.

The history of applicants rejected is a subject profitable for study to physicians as such and to medical examiners also. It shows how prone to fallacy our conclusions are when the operations of human life are concerned. When a patient is

ordained unto death in the mind of his physicians, the sentence is quickly verified or disproved, but in the case of the medical examiner, it may be delayed for many years. An applicant once rejected quickly passes out of sight, and, as a rule, does not aspire to become a unit in a table of statistics. I do not mean that he quickly passes out of mortal vision, because you will be surprised to know how many rejected applicants go on their way utterly heedless of the opinion some medical examiner has framed.

Another source of difficulty lies in the insurance office itself. It is quite true that these institutions, if you believe what you hear, are purely eleemosynary in their nature, but it is hard to believe, with our knowledge of the conduct of affairs in this present evil world, that the controllers of them are moved by abstract benevolence alone. There may be a rivalry in doing good, and this honourable rivalry exists between insurance companies, but it fosters a disposition on the part of a company to keep its information, its statistics, and results to itself, lest some watchful Pharisee should use it to do good in another way, and so be led to boast himself in his annual statement. For example, all rejected risks used to be registered in one central office, open to all companies. The result was that offices writing impaired lives obtained a clue to the refused business of level premium companies, and appropriated it to themselves.

The history of accepted cases is accessible enough, and sometimes it is a painful study when a policy is too soon transformed into a death claim. It is then an examiner realises his full responsibility, and feels the necessity of bringing his best judgment to the task. But if the fear of a death claim is too prominently before his eyes he will go to the other extreme, doing an injustice to the applicant, and putting obstacles in the way of the company's legitimate aspirations.

A medical examiner is more than a physician; he is an officer of a company which depends not for its success only, but for its very solvency, upon the fidelity with which he does his work. In the main it is the agent's business to induce a man to enter the company; it is the medical examiner's business to keep him out. He is not called upon to give an abstract opinion of a case, he is asked to decide whether his company shall assume a large financial risk. But the object of the examination of applicants is not that none but the absolutely healthy shall be accepted; it is to ensure that those who receive policies shall at least come up to the standard revealed in the tables of mortality. If it were not for this the offices would be crowded with weaklings, for it is they who desire insurance most, and their risk would have to be carried by the healthy subjects until they refused to bear the burden longer. Then comes the receiver.

I feel quite sure that everyone of us has been informed with some degree of particularity, and it may be persistency, of the value of life insurance. It may have escaped us how valuable it is in vital statistics and in medical fees to the profession from which the examiners are drawn. Up to the year 1830 it was not the custom to employ an examiner at all. The directors looked a man over and formed an opinion from their impression alone. Then a certificate from the family attendant was required, but it was the middle of this century before regular examiners were generally appointed. In Great Britain nearly 45 per cent. of the population carry policies of one kind or another, and over a million and a-half of regular policies are in force in that country. In the United States and Canada 300,000 policies were issued last year, from which the medical profession drew a million and a-half dollars in fees. In these millions of recorded lives one would think there is a vast store of information upon the subjects of life and death, which only needed classifying to make it available for important use. It is information of a more or less exact character, and, as the late Sir Francis Johnston used to say, a statement is not necessarily false because it is sworn to. The task to which I have set my hand is this: to deal with a small part of this mass of information for the following particular purposes:

1. To determine the ratio which rejections bear to all applications.

2. To ascertain the causes of rejection.

3. To trace the after-history of such cases.

The records I have used are those of one of the largest life

* Read before the Montreal Medico-Chirurgical Society.

insurance companies in the United States and Canada for the years from 1885 to 1895, the territory covered being the Province of Quebec, and Ontario, for a part of the period. The longest history will therefore cover a space of fifteen years, from 1885 to 1900, the shortest five years, the average exposure being ten years.

By actual count the applications were 5,115 in number, and the risks declined or postponed were 409; the rejections, therefore, amount to 8.11 per cent. For the first three years the ratio was 8.02, for the first five 8.15, for the second five 8.07, and for each separate year it was practically the same. This shows, no matter how the agents revile us, that rejections take place according to some fairly intelligent system, but whether this experience holds true in other companies is a matter for inquiry. To say that 8 per cent. of all applicants examined by a company are declined does not mean that this is an indication of the physical health of the whole population, because the agent, before he expends his energy on a case, has already in a way exercised a certain process of selection. Taking these 409 as the refuse of the 5,000 cases, the causes for which they were thrown out are expressed in the following tables:

		Cases.	
Family history of phthisis	...	...	84
Rheumatism in applicant	...	...	31
<i>Lungs.</i>			
		Cases.	Cases.
Physical signs of disease	...	21	Pneumonia, previous attack ... 9
Asthma, previous attack	...	10	Hæmorrhage, " " ... 17
<i>Heart.</i>			
Irregular action	...	19	Increased pulse and impulse... 7
Murmur with lesion	...	24	
<i>Genito-Urinary.</i>			
General	...	5	Sugar ... 7
Gravel...	...	3	Tuberculosis, bones, glands ... 9
Renal colic	...	6	Syphilis ... 13
Albumen in old persons	...	5	Ear disease ... 12
Albumen in young persons	...	17	Dyspepsia ... 4
<i>Nervous System.</i>			
Epilepsy	...	6	Sunstroke ... 4
Paralysis	...	5	General ... 7
Infantile paralysis	...	3	
Deficient Physique	...	10	General causes, including cat-
Age	...	6	aract, climate, hernia, blind-
Pregnancy	...	5	ness, hæmophilia, appendic-
Recent fevers	...	6	tis, fistula, accident, newly
Alcohol	...	12	married, jaundice, climac-
Occupation	...	12	teric, ignorance, diarrhoea,
Unknown	...	17	chloral habit, insanity and
			history of insanity ... 22

If now I could inform you with absolute exactness of the after-history of these cases, if I could determine the condition of those who are now alive in relation to the causes for which they were rejected, and of those who are dead, the connection between the original lesion and the cause of death, I should have a valuable document. I can tell you something, but not all. It is those who love statistics most who know their weakness best. You cannot classify these still living in respect of their present health, since health cannot be expressed in percentages, and present impairment cannot except in a very imperfect way be converted into terms of expectancy. That is what I meant by not attempting to prove too much, nor laying upon figures a greater burden than they can bear. Again, of the dead, you cannot, excepting very imperfectly, establish the connection between an old lesion and the cause of death. Who can say, for example, in the case of a person dead of pneumonia who had an irregular heart, what was the precise relation of the two events? Of these 409 rejected cases I have already ascertained the after-history of 235, whether they are living or dead. It is a mere matter of industry to continue the research until the record is fairly complete. The record must be nearly complete before drawing final conclusions from it, since it would not be fair to assume that the after-history of those rejected cases which we can trace coincides with the history of the cases lost sight of, because it is easier to prove that one man is living than that another is dead.

Taking these 235 cases to begin with, they are all living excepting 31. The following table shows the cause of rejection, the cause of death, and the time elapsed between the two events.

No.	Cause of Rejection.	Cause of Death.	Time Elapsed.
1	Rheumatism	Blood poisoning	5 years.
2	Hæmorrhage	70 years of age	13 years.
3	Heart murmur	Heart disease	7 years.
4	Alcoholism	Heart and liver disease	—
5	Lungs doubtful	—	—
6	Tumour of lip	—	10 years.
7	Lungs doubtful	Liver disease	13 years.
8	Family history	Pneumonia	6 years.
9	Hæmorrhage	Accident	9 years.
10	Family history	—	—
11	Inguinal hernia	—	8 years.
12	Renal colic	—	—
13	Family history	Phthisis	8 years.
14	Syphilis	Syphilis	3 years.
15	Nervous prostration	Died at 77	8 years.
16	Intermittent pulse	Poison	9 years.
17	Family history	—	4 years.
18	Aortic murmur	Heart disease	5 years.
19	Lung involved	Phthisis	2 years.
20	Phthisis	Phthisis	5 years.
21	Lungs involved	Heart disease	3 years.
22	Pleurisy	Pleurisy	—
23	Syphilis	Pneumonia	2 years.
24	Family history	Alcoholism	—
25	Hemiplegia	—	—
26	Family history	Pneumonia	3 years.
27	Age 65	Peritonitis	4 years.
28	Small physique	Heart disease	—
29	Epilepsy	—	5 years.
30	Unknown	Alcoholism	5 years.
31	Cystitis	Cystitis	2 years.

We must first establish a standard to determine in how far the death-rate amongst rejected applicants exceeds or falls short of the mortality which prevails amongst accepted risks. In effect this can be done by taking the mortality rate per 1,000 amongst persons of average insurable age, which is 36 years. The exposure in the present case is ten years, and normally 894 persons out of 1,000 should be alive at the end of that time, or 106 persons will have died in the period. Our rejections number 409. If these were normal lives we should expect 43 deaths to occur. I have only been able to trace 235 cases, and amongst these we should expect to have 25 deaths. As a matter of fact the deaths number 31. From this table it will appear that at least 12 persons died of a condition in no way connected with the cause of rejection, that many of them lived a good period, and that so many are still with us who ought long ago to have gone to their own place, or at least to the place assigned them by the medical examiners. It is well again to insist upon the weakness of the statistical nature. We cannot always draw an inference from a statement to the truth of that statement. As Sir James Stephen so convincingly observed, while facts and figures cannot lie, the witnesses who state them can and frequently do lie.

This mortality amongst rejected applicants, so slightly in excess of the normal, must seem surprising. Probably the period of exposure (ten years) is not long enough. Exact results could only be obtained by comparing the period lived with the individual expectancy, which in young persons may amount to 30 or 40 years. Even if a man be alive at the end of 20 years, he has no right to blame the medical examiner. He may die before his appointed time. This source of error seems to be confirmed by an examination of 18 consecutive rejections in 1885. I have traced the after-history of 16 of these, and after 15 years 7 are dead. The average age of the 7 was 49 years, the expectancy was 23 years, the actual time lived was 9½ years. All of which points to this—that an extensive and thorough search should be undertaken with the certainty of a large reward in knowledge of vital phenomena. Indeed the imperfection of the present record is due to the fact that it is only the beginning of a wider inquiry.

The after-history of many cases is precisely the same as others which have not been rejected because rejection often takes place on insufficient grounds, and for causes of a more or less accidental nature. A medical director exercises his judgment, and often is guided merely by the impression a case makes upon his mind. One example will serve. Seven years ago a man made application upon the same day to two different companies for the same kind of policies and was examined by the same physician who was acting for both companies. One application was refused, the other was accepted. The reason for this anomaly was that the applicant had an

aunt who died of consumption, and this fact carried weight in the mind of one director, while in the other it was of no account. The man is still living and in good health. There is no factor in life insurance of more importance than a family history marked by tuberculosis. The experience of the United States Life Insurance Company for twenty-three years shows that 27 per cent. of their mortality was due to consumption. Equally striking is the table prepared by the Mutual Life Insurance Company dealing with their entire mortality during the fifteen years from 1879 to 1893, which amounted to 22,085 cases. Up to twenty-nine years of age, the mortality was 35.8 per cent. of all cases in non-consumptive families and 45.6 in families with a tainted record, in the next decade 26.3 and 39.6, in the next 17.6 and 24.6, in the next 6.7 and 15.7, in the next (that is from 60 to 69 years of age) the ratio was 5.8 and 8.2. A more recent tabulation of the mortality in this company from 1843 to 1898, covering 46,525 cases, gives to tuberculosis 5,585 deaths, a percentage of 24.27 under 45, 10.88 between 45 and 60, and 40.3 above 60 years of age.

Of late years, however, it has been proved that a bad family history may be largely neutralised by a good personal record, the chief indication being the weight of the occupant. Dr. E. J. Marsh has made this very clear in the table referred to, and from it he is led to the following striking conclusions.

1. That the history of consumption in any member of the immediate family increases the probability of its appearance in an applicant.

2. That consumption in a brother or sister is at least of equal importance as when it has occurred in a parent.

3. That persons who are under the standard or average of weight are much more liable to consumption than those above this standard. That the peculiarity of constitution, which is indicated by the inability to take and assimilate a proper amount of nutriment, indicated a susceptibility to phthisis, or at least is a reasonable suspicion of such predisposition.

4. That persons who exhibit a robust or well developed body have little susceptibility to consumption.

5. That the personal condition of weight and robustness has far more value than the family history in diminishing the liability to consumption, therefore

6. The evidence presented by a well-developed body may outweigh the suspicion attached to unfavourable family record.

7. That these influences of family history and personal weight are of the same grade for every age, and their importance is not lessened by the fact that the individual has reached middle life.

Of the 409 rejections 84 are for family history, that is over 20 per cent., but in view of Dr. Marsh's valuable research many of these cases would now be acceptable if the body weight of the applicant were good. In addition to these 84 rejections there were 21 for physical signs of pulmonary disease, 10 for asthma and bronchitis, 9 for pneumonia and 17 for hæmoptysis, making 141 in all for causes connected with the respiratory organs or nearly 35 per cent. Of the 31 deaths out of the 235 cases I have been able to trace 9 at least were due to this cause, and in all there was a tainted family record.

The after-history of rejected cases depends upon the cause for which they have been rejected. Let us look at those which have to do with the heart. The pathologist, the clinician, and the medical examiner view the heart from different standpoints. The pathologist sees the heart as it is, the clinician inquires how it is doing its work, the medical examiner asks how long it will continue to fulfil its office. When the heart is working well it works regularly and without noise; when it is working badly, it does it irregularly with noise and murmur. But it may murmur and be irregular and yet do good work. When we consider that the process of circulation consists in the passage under pressure of fluid through a series of complicated channels and orifices, the wonder is not that there should be murmurs, but that they should ever be absent. Indeed, murmurs are always present if you can only hear them. Again, the heart may not beat with absolute rhythm and yet it may accomplish its purpose with satisfaction. There are three problems connected with the heart which present themselves to the medical examiner. There is the estimation of the negative value of certain organic lesions, of functional murmurs, and of irregularity of beat. Usually these problems are not considered at all, they are

merely dismissed. Organic lesions and murmurs are so closely connected, the question is to decide what sequence exists between them.

As a rule medical examiners never see cases of heart disease with well-marked symptoms; the most an applicant will admit is some shortness of breath after unusual exertion, some coldness or slight swelling of the feet, but very often not this much can be evoked even in the presence of an unmistakable lesion.

Again, a murmur is observed, the case is postponed, and upon re-examination the heart sounds are normal. Such a murmur is usually spoken of as functional, but it will not do to assume that all murmurs which have disappeared must have been functional in character. Sir William Gairdner with Sir Andrew Clark made a study of cases of cardiac disease prolonged beyond expectation after the physical signs and symptoms had been well recognised,¹ and at the meeting of the British Medical Association in Edinburgh in 1898 Sir William took up the parable again. In one case the patient had signs of cardiac disease for upwards of thirty years, when they all disappeared. He traced another case from the year 1862; the cardiac disease had passed out of recollection, and the patient is still alive. A third case was one of tricuspid obstruction by a tumour attached to the wall of the right auricle, in which the patient survived for ten years and then died of pneumonia.

Many of these lesions which interfere with the harmony of the sounds are pericardial. All the serous membrane are prone to the inflammatory change. We meet with adhesions constantly in the pleura, and if in the pericardium the adhesions are not so frequent, we have evidences of old inflammation in those white spots so commonly found on the wall of the heart. This alteration in structure must produce murmurs hard to distinguish from valvular, but may have no effect upon the longevity of the patient. No matter how slight the organic lesion as revealed by unusual sounds or rhythm, it debars the applicant from acceptance; but if the murmurs have disappeared, or even if they are present and the heart cannot be made to reveal any weakness by the various devices which examiners employ, such a case is liable to have a very favourable history.

Turning away from organic lesions let us look for a moment at those disorders which are so often functional, such as irregularity of beat, excessive and diminished rate, termed respectively arrhythmia, bradycardia, and tachycardia.

An applicant with irregular heart usually merits little further attention at the hands of the examiner, yet many such cases are entirely without significance. Osler quotes the case of the late Chancellor Ferrier, whom we all knew as a man of "unusual mental and bodily vigour." He had an extremely irregular pulse for fifty years at least, and yet lived to be 87. All varieties of arrhythmia may be observed. "The beats during inspiration may be more frequent, though less full, than during expiration, the paradoxical pulse of Kussmaul" (Osler), there may be an occasional dropping of the cardiac beat, the systole may be so weak as to produce no pulsation, though a faint sound may be observed, strong and weak contractions may alternate regularly. The beat may be of the fetal character, "in which the character of the first and second is almost identical," and, lastly, there is the galloping rhythm, which "we can both see and feel as well as hear."

Up to the present no attempt has been made by medical examiners to assign these irregularities of rhythm to their proper cause. All applicants presenting the condition have been declined, and that is one reason why their after-history has been more favourable than we would expect.

An unusually slow heart is by no means uncommon. Napoleon's is stated to have beat only 40 per minute, and H. C. Wood reports the case of a physician in whom the condition persisted for fifty years without symptoms.

There are many other curious anomalies of the heart whose exact significance is hard to determine. There is what is known as the insurance heart, in which the rapidity is increased in a moment to a surprising degree. I have known three cases in which the applicant would have fallen to the ground as soon as the stethoscope touched the chest had not the examiner prevented it. One of these, with singular irony, was himself an insurance agent, and of unquestionable sound-

ness of health. The rapidity may be so excessive as to amount to a positive delirium cordis, with no consciousness on the part of the applicant of any disturbed action. There is also the irritable heart of young persons due to some instability of the nervous mechanism, which is thrown into a tumult for little or no cause. These are all quite apart from the increased pulsation due to tobacco, coffee, tea, and alcohol.

Congenital anomalies of the heart afford an explanation of some unusual sounds and of alterations in the rhythm. Many of these conditions are not prejudicial to longevity and should be kept in mind when forming an opinion upon a risk in which the heart attracts attention. A fine collection of such hearts was shown at the London meeting of the British Medical Association in 1895, and the whole subject is considered in the March number of the *Johns Hopkins Hospital Bulletin*. An open forum is not inconsistent with long life, and may reveal itself only by an increased pulsation in the vessels of the neck. Defects in the septum between the cavities may occur and give rise to a "loud, constant murmur in the upper pericardial region," and narrowing of the pulmonary artery may account for "a loud systolic murmur in the second and third interspace." Anomalies of the aorta, such as persistence of the ductus arteriosus, may be the cause of another systolic murmur and an inequality of the pulse. None of these conditions are incompatible with old age, though during life they must produce a strange confusion of sounds, enough to warrant an adverse decision from any medical examiner.

For life insurance the important thing is to establish that the unusual condition is peculiar to the individual, that it has persisted for many years, that it is not associated with any objective symptoms or with any impairment of health.

It is worth while citing two or three cases. R. E. was rejected in 1846 on the ground of irregular heart action following rheumatism. He has been examined six times since, and always rejected. He has outlived all his examiners, and my informant refused to examine him in case he too would be added to the number.

In 1873 three of the best-known members of the profession in Montreal were examined the same day; two were taken and the other left. The two who were accepted have gone to their rest, the third is with us after twenty-seven years, and to all appearances with twenty-seven more of successful work before him.

In 1897 I examined J. R., and recommended his acceptance. The Company wrote that he was declined fifteen years before for a loud aortic murmur, and asked me to re-examine him in the light of that information. I did so, but could find no trace of it, and he was accepted.

From our table, it appears that 50 cases out of 409, or 12 per cent., were rejected for causes connected with the heart, and I have only been able to discover 5 deaths from heart disease. It is impossible from the records to separate absolutely functional irregularities from those indicating organic lesions, but, so far as it appears, there were 19 of the former and 24 of the latter. All companies are afraid of rheumatism, and I find 31 rejections from this cause on account of the obvious connection between the disease and heart lesions.

There is next the large matter of albuminuria. It must be viewed from the two standpoints occupied by the medical examiner and the director respectively. To the director the term "albuminous urine" is one of sinister significance. His records reveal that death from a disease habitually associated with this condition is alarmingly common. The Mutual Life records 2,997 deaths, a percentage of 6.66 of deaths from all causes. He has proof of that in his claim papers. He has the high authority of Osler for holding "that the presence of albumen in the urine in any form and under any circumstances may be regarded as indicative of change in the renal epithelium." He is seized of the fact that albumen in the urine is of pathological significance. Certainly normal urine contains none, and when it does occur it is not without cause. Increased arterial tension alone will not suffice to produce it without epithelial changes, and the director knows, further, that albumen is significant of many conditions not specifically associated with the kidneys, such as epilepsy, neurasthenia, concealed syphilis, anaemia, and even diabetes before the appearance of sugar. These are facts; his mind is made up, and he will reject all such cases

until we are able to demonstrate to him the exact significance of albumen in every case—and that we cannot do.

On the other hand, injustice is wrought to many an individual, and this is the side which appeals to the examiner. We have found albumen in the urine of persons who answered to every test of health, and whose after-history was in no way affected by it, even if it persisted with more or less regularity for years. We find it in more than one member of a healthy family, but we may find a tendency to phthisis also in otherwise healthy families. Those who have much to do with athletes reports its presence in the urine of most of them, after taking some severe form of exercise, such as bicycling or football, and in these cases casts, free renal epithelial cells, and leucocytes are also found. It is also associated with excessive mental and sexual activity, and all these conditions, it is to be noted, apart from the presence of albumen, are not particularly favourable to the insured. It is not uncommon in women, but the source is often extravasical, and in both sexes it may follow the exhibition of drugs, such as the salicylates and potash. Another element of confusion is the fallacy in the test itself, due to a deposit of nitrate of urea or resinous acids when nitric acid is used, of peptones and alkaloids in the presence of picric acid, of xanthin when perchloride of mercury is employed. Last of all, serum albumen may be confounded with the other coagulable proteids, such as nucleo-albumen, hemialbumose, and globulin. The detection of albumen depends upon the test employed. Posner contends that it is always present, but in too small quantities to be recognised by ordinary reagents. Certainly trichloroacetic acid will reveal it when nitric acid entirely fails. To test this statement I examined 14 consecutive specimens in the usual way, and finding no albumen advised acceptance of the risk. The same specimens were tested with chemical accuracy and traces of albumen were found in 4. Here there is confusion, either the testing as ordinarily done is of no value or refined chemical methods should not be employed. I adhere to the latter view. It is not a question whether or not a substance supposed to be albumen is present. It is a question whether the applicant is or is not in good health. With all these conflicting elements the medical examiner must feel constrained to lay aside his favourable opinion of an individual case, and classify it in the black list of "albuminuria" no matter how firmly he is convinced that the after-history will be favorable. I have separated the cases of albuminuria in persons under 40 from those occurring over that age, presuming that the former were of the cyclic variety, and I find them 17 in the young and 5 in the old, with no deaths in either class. Renal colic and gravel were answerable for 9 rejections, and I can only find 1 doubtful death from such causes. The first rejection was made by this company in August, 1885, for renal colic; the applicant is yet amongst us and in good health, though he has since been cut for stone.

The after-history of rejected cases is rendered unduly favorable, because the applicant was declined on account of the presumption of sugar being present in the urine. In March last I declined to recommend a young man, a confectioner of 21, for this reason, and referred him to his family physician for consultation. After two days he sought such advice, when every trace of sugar had disappeared. An easy explanation of this anomaly is that my tests were fallacious, because many substances will reduce the copper in Fehling's solution, such as mucin, creatinin, uric acid, glycuronic acid, and allantoin. Yet having this in mind, and having tested three different samples and finding carbon dioxide after fermenting with brewers' yeast, I could come to no other conclusion, even while remembering that sugar may be present after a heavy meal of carbohydrates in various forms of impaired digestion and in certain irritable conditions of the nervous system. I find seven rejections from the presence of sugar or of substances confused with it, but no deaths.

Many risks are refused on account of personal habits, especially in respect to the taking of alcohol. There is a wide divergence of view by examiners upon this point, and that view is affected by the habits of the examiner himself. When a person's conscience commences to work upon this subject it is very liable to draw the judgment out of line, but a corporation which is not disturbed by this factor may be depended upon to judge correctly. There used to be a rule that an ounce

and a half of alcohol daily was the limit of safety, but no such rule can be applied, for this amount would be quickly dangerous to some while others would be unaffected by much larger quantities. We are all pretty well agreed that alcohol in reasonable amounts and at proper times is not only harmless but actually productive of good, and it often seems as if those who needed it most are the bitterest opponents of its use. Indeed the case of a total abstainer should be searched into as diligently as the case of the habitual drinker, since abstinence may be due to a knowledge of hereditary taint, to personal intemperance in early life, or to some physical condition which does not go with robust health and long life. But there is a class of risks which all companies agree to consider bad. This is the class of liquor dealers and manufacturers who are brought into daily and intimate connection with alcohol. It is here a little and there a little unconsciously, but without intermission. The tissues are never wholly free from its effect and this is a condition favourable to the slow, chronic change which ends in permanent impairment by the substitution of lower tissue for the higher, connective tissue for the proper vital cells of the organ. There is besides a moral hazard associated with this business, which no one can estimate exactly, and for that reason the after-history of cases rejected for this cause is conflicting. There were twelve rejections for this alone and three deaths.

Many cases are rejected on account of pregnancy, and at first this would seem unjustifiable, seeing that the mortality from childbirth is extremely low, not more than one-half of 1 per cent. This is to prevent women from insuring against that particular contingency and rules are made accordingly. If a woman insures her life under the usual conditions the company lays no restrictions upon her child-bearing, but they will not accept her within two years of marriage nor until she has borne her first child, or until it is pretty clear that she will never have any. This condition led to five rejections.

A large number of rejections arise from causes personal to the medical examiner himself. He puts upon the records remarks that should never go there. He may answer "Yes" to the question of spitting of blood, and then explain that it occurred during pneumonia or from laryngitis, or from "hard work" or "bad weather." One examiner answers "Yes" to gravel, and then explains that it was probably "dyspepsia."

A wrong impression is made upon the director's mind, or if he understands the true situation he cannot issue a policy on any ambiguous application, for at any time it is liable to become a death claim and go before the Claims Committee, who see only the fact and not the explanation which negatives it. The medical director wants no observations, however acute they may be; no reasoning, however subtle, no opinions, however judicial; he wants a nay to be a nay and a yea, yea, without qualification, and above all he does not want a good risk vitiated by "remarks."

REFERENCE.

1 BRITISH MEDICAL JOURNAL, February 5th, 1887.

A CASE OF VARICOSE ANEURYSM OF THE AORTA COMMUNICATING WITH THE PULMONARY ARTERY.

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CASES of aneurysm of the aorta opening into the pulmonary artery are rare, and as the one described below was under observation for some weeks, and the symptoms pathognomonic of this condition are not absolutely settled, I have thought it worthy of record.

A brief summary of the clinical history is that the patient, without obvious cause, began to suffer from shortness of breath, palpitation, and oedema beginning at the feet. There was a marked thrill over the left side of the chest, and a loud, continuous murmur, with systolic and diastolic exacerbations. Later there were marked anasarca, scantiness of urine (varying in quantity from 9 to 16 ounces per diem), orthopnoea, and gradual failure of pulse.

History.—A B., aged 36, was a hotel porter, and had never had any previous illness. He had had gonorrhoea, possibly syphilis, and drank about four pints of beer daily. Three weeks before admission on going up a steep

hill one evening he experienced great shortness of breath; this progressively increased. A week later his feet began to swell, and in another week his abdomen swelled and the urine became very scanty in amount. There was no pain, and no other symptom besides palpitation.

Condition on Admission.—He was well nourished, rather puffy looking, and the skin rather dusky in hue. The pulse 110, not collapsing or water-hammer; there was no capillary pulsation; arteries slightly thickened; respiration 24. The chest wall was cedematous, especially on the left side. There was marked pulsation in the carotid and subclavian arteries; the veins of the neck also showed pulsation, and they filled up from below. The heart's apex was in the fifth space, 2 inches outside the nipple line; the area of dulness extended $\frac{1}{2}$ inch to the right of the sternum and to left to the apex beat; it was enlarged upwards and to the left, there being dulness over the sternum as high as the lower border of the first ribs, and outwards to left in first and second intercostal spaces. There was an area of deficient resonance extending about $\frac{1}{2}$ inch from left border of sternum. A very marked thrill could be felt over the whole of the dull area and slightly beyond it, and also over the subclavian arteries and first piece of sternum; this thrill continued almost throughout the cardiac cycle. The precordial area was bulged, and pulsated everywhere. In addition there was deep-seated pulsation to be felt to the left of the sternum in the second and third intercostal spaces. On auscultation a low-pitched roaring murmur was heard, continuous but varying in intensity forming as it were a background to loud blowing systolic and diastolic murmurs. These murmurs were loudest at the sternal end of the third left intercostal space and fourth left costal cartilage, next loudest in the second intercostal space. During his first week in the hospital the murmur was audible without a stethoscope some inches away from the patient's chest. Below the fourth rib the heart sounds had a galloping rhythm, and the systolic and diastolic murmurs were heard. A loud double murmur was also audible in the back down the left vertebral groove. No tracheal tugging and no laryngeal paralysis were present. There was some fluid effusion into the left pleura. The liver was much enlarged, and showed true pulsations following immediately after the heart beats.

Area of Cardiac & Liver Dulness.
Area of Deficient Resonance, Thrill, and Pulsation.
Area where Thrill & Murmur Plainest.
Sites where Murmur Audible.

Fig. 1.

After-History.—The murmur remained much as above described until his death, the systolic portion being the loudest as a rule; but both systolic and diastolic murmurs varied in this respect, one day one being the louder and another day the other. Both thrill and murmurs became less distinct towards the end as the heart's action grew weaker, and the cardiac dulness to the right of the sternum became more extensive owing to progressive dilatation of the right ventricle. The murmurs could be heard over the great vessels and faintly over the carotids, but not over the brachial or radial arteries. The pulse was never of the water-hammer character, it remained regular, and the rate varied from 100 to 116 until a few days before death, when it reached 140. Respiration 26 to 32; it was easy so long as he was quiet, and there was no orthopnoea until just before the end. Temperature subnormal. There was no cyanosis. A dusky hue being only noticed for a day or two after admission and for three days before death, and even this was not marked. There was no marked anaemia. The urine was very scanty, the quantity passed being from 9 to 14 ounces in the twenty-four hours, once 16 ounces; specific gravity 1022 to 1026; it contained urea 3.5 to 5 per cent., a trace of albumen, a moderate deposit of urates on most days, no sugar, occasionally a hyaline cast. The dropsy steadily increased, and fluid accumulated in the pleural and abdominal cavities; the abdomen was drained, and a large quantity of fluid drained from the legs by means of Southey's trocars,