

SEAVERNS (Joel)

ANNUAL REPORT

—OF—

MEDICAL EXAMINER-IN-CHIEF,

—OF—

ROYAL ARCANUM.

1890.

JOEL SEAVERNS, M. D.

Compliments of Dr. Seaverns.





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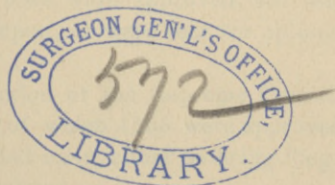
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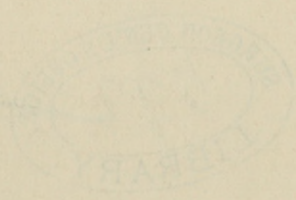
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J. A. CUMMINGS PRINTING COMPANY,
252 Washington St., Boston.



MEDICAL EXAMINER-IN-CHIEF'S REPORT.

To the Officers and Members of the Supreme Council of the R. A. :

BRETHREN:—I herewith present my report for the year ending December 31, 1889.

I find upon examination of my records, that during that time 3223 applications have been received at my office, being, as will be perceived, a number nearly a thousand in excess of any previous year. Of these, 1742 were from Councils under the jurisdiction of Grand Councils, the same having been referred to me by the State Medical Examiners, being nearly 300 more than in 1888. Of these :

323 came from New York.	33 came from Wisconsin.
297 " " Pennsylvania.	27 " " Ontario.
322 " " New Jersey.	26 " " Indiana.
150 " " Massachusetts.	25 " " Missouri.
117 " " Georgia.	19 " " Connecticut.
96 " " Illinois.	8 " " Rhode Island.
79 " " Virginia.	5 " " New Brunswick.
72 " " Michigan.	2 " " Nova Scotia.
55 " " Ohio.	2 " " Iowa.
44 " " Tennessee.	1 " " Nebraska.
39 " " Maryland.	

Of the 1742 referred applications, 1084 were approved, 637 were rejected, and 21 have not been acted upon, or were sent for opinion, and action was not required.

From the States under the jurisdiction of the Supreme Council, 1481 applications have been received, of which 1255 were approved, 207 rejected, and 19 have not been acted upon, either as being illegal or as never having been properly completed.

Concerning these 3223 applications, I would state that about 1000 have required farther information or correction, so that it has been necessary to correspond with the local Medical Examiner with regard to them.

The correspondence during the year, with regard to so many papers, and with regard to kindred subjects, has been of course, larger than ever before, and for several months the letters have been

on an average over three hundred per month. (This it must be observed, is exclusive of the letter of advice which is sent with every envelope containing an approved application, or a notice of rejection.) Most of them were in the nature of simple inquiries, but many of them involved considerable research and professional decisions.

The actual number of deaths that have occurred during the year, as reported up to March 14, 1890, has been 748. Four others are included in the printed lists of persons who died previous to Jan. 1, 1889, but had not been previously included in my tables. I therefore have made up tables of the different classes of disease to include these, making my 752 in all. The average membership during the year was 92,630, and taking the actual number of deaths, as given above (748), the death rate per thousand has been 8.08.

These deaths were divided among the different States as follows:—

New York,	144	District of Columbia,	9
Massachusetts,	99	North Carolina,	8
Pennsylvania,	97	Iowa,	5
Ohio,	56	Arkansas,	6
Illinois,	50	Rhode Island,	5
Maryland,	37	Nebraska,	4
Michigan,	50	New Brunswick,	4
New Jersey,	40	Nova Scotia,	3
Georgia,	27	Maine,	2
Virginia,	23	Connecticut,	3
Missouri,	17	Kentucky,	2
Ontario,	15	New Hampshire,	2
Tennessee,	15	West Virginia,	1
Wisconsin,	14		—
Indiana,	10		748

None died in California, Colorado, Delaware, Kansas, Minnesota, Prince Edward Island, Quebec, Utah, or Vermont.

RATE OF DEATHS PER THOUSAND BY STATES.

An examination of the number of deaths in each state as compared with the members in each in June last (which is approximately the average membership for the year) shows the following results. This table does not include the jurisdictions whose memberships were less than 500.

State.	Deaths.	Membership.	Rate per 1000.
Arkansas	6	535	18.7—
District of Columbia	9	561	16.0+
Georgia	27	2,400	11.2—
Michigan	50	5,026	9.9+
North Carolina	8	858	9.3+
Tennessee	15	1,628	9.2+
Maryland	37	4,018	9.2+
Virginia	23	2,511	9.1—
New York	144	16,683	8.6—
Massachusetts	99	11,602	8.5+
Pennsylvania	97	11,502	8.4+
New Jersey	40	4,820	8.3—
Ohio	56	7,260	7.7+
Missouri	17	2,580	6.6—
Wisconsin	14	2,162	6.5—
Illinois	50	7,728	6.5—
Rhode Island	5	845	5.9+
Ontario	15	2,700	5.6—
Indiana	10	2,041	4.9—
Maine	2	513	3.9+
Connecticut	3	1,577	1.9+

Our death list when classified to show the different forms of disease is as follows :

Classes.	Number of deaths.	Percentage.
Zymotic	70	9.3
Tubercular	109	14.5
Brain and spine	128	17.0
Heart and circulating organs	68	9.0
Lungs (not tubercular)	81	10.8
Digestive organs	83	11.0
Kidneys and urinary organs	72	9.6
Casualties	64	8.5
Suicides	26	3.5
Cancer	34	4.5
Unclassified	17	2.3
	752	100.0

COMPARISON WITH PREVIOUS YEARS.

When drawn up in connection with the results of previous years the result is as follows :

	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	Av'ge.
Zymotic...	14	19	11.6	8.8	11.6	10.7	12.2	9.9	10.6	9.3	11.8
Tubercular.	13	12	17.8	19.5	20.3	16.9	15.9	15.9	14.7	14.5	16.0
Brain	16	10	13.7	15.7	15.6	14.4	15.5	17.6	17.6	17.0	15.3
Heart.....	9	9	8.7	7.9	9.1	10.7	12.0	11.8	8.2	9.0	9.5
Lungs	13	12	14.1	9.5	12.4	9.9	11.6	10.7	13.7	10.8	11.8
Digestive...	9	13	11.2	9.7	7.7	12.8	9.0	11.5	10.9	11.0	10.6
Kidneys ...	9	8	5.0	9.7	6.4	7.3	7.0	7.4	8.9	9.6	7.8
Casualties..	10	9	8.7	7.7	7.7	5.9	8.7	7.1	6.5	8.5	8.0
Suicides....	5	1	3.3	5.3	3.0	3.7	3.1	2.3	4.3	3.5	3.4
Cancer.....	2	6	3.7	3.8	3.0	4.5	3.0	2.9	3.9	4.5	3.8
Unclassified	0	1	2.0	2.4	3.1	3.4	2.0	2.9	0.2	2.3	1.9

It is gratifying to find how low our rate of mortality has been from consumption and heart disease, since it is by the relative mortality from these two, in comparison with other diseases, that we judge to a certain extent at least of the skill and care with which the examinations have been made, though of course many other elements must enter into any such calculation.

From this point of view it will be found that as regards the former, the consumptive deaths, our loss has been proportionally less than in any year since 1881, though only fractionally less than last year. Still with a disease everywhere so rife as is phthisis we cannot expect to do better, and we are, I believe, doing quite as well as any insurance companies.

With diseases of the heart, too, our loss has been smaller than our average for ten years, though a little larger than last year; the increase being eight-tenths of one per cent. This is not important.

From brain disease our loss seems to have been relatively heavy, but has not exceeded the average.

The deaths from acute lung diseases have been less than during the previous years, and diseases of the digestive organs have very slightly exceeded the number of the previous year and the average. The ratio of zymotic diseases has been small.

Casualties have been frequent, and the losses from the Johnstown flood explain this, whilst suicide has been about at the average, and cancer a little in excess of our usual mortality. Diseases of the kidneys, too, without any special reason, have increased, and are nearly two per cent. beyond the average.

The small rate of mortality, however, as stated on a previous page, 8.08 per thousand of members, shows that proper care and vigilance have been exercised.

ZYMOTIC DISEASES.

Seventy deaths were the results of the zymoses, of which forty were caused by typhoid fever, eighteen by malarial diseases and four by yellow fever, the latter occurring two in Virginia, one in New York and one in New Jersey.

Seven of the deaths happened in the spring, twenty in summer, twenty-four in autumn, and nineteen in the winter.

Fifteen of them were in the State of New York, fifteen in Pennsylvania, six in Virginia, four each in Georgia, Massachusetts and Maryland, three each in Illinois, Indiana and New Jersey, two in Michigan, and not more than one in any other State.

The proportion of deaths from this class of diseases was smaller than since 1883, it being but 9.3 per cent., it having been 19 per cent. in 1881.

CONSUMPTION.

The deaths, 109, resulting from phthisis during the past year have been in a less ratio to the other classes than during the past eight years, even though I have included in this class deaths from hemorrhage and abscess of the lungs, in not all of which was it clear that that there was chronic tubercular disease, or chronic disease of any kind. One death only from "abscess of the lungs," which seems to have been undoubtedly an acute case and not dependent on constitutional causes, has been included in diseases of the respiratory organs, not tubercular. The percentage was 14.5.

They occurred in the different States as follows :

New York	27	Ohio	10
Massachusetts	15	New Jersey	7
Pennsylvania	14	Maryland	3
Illinois	13		

Wisconsin, North Carolina, Michigan, Tennessee and Missouri had two each, and Maine, New Hampshire, Rhode Island, West Virginia, District of Columbia, Georgia, Nebraska, Ontario and Nova Scotia, one each.

Taking into view the number of members in the various States it

will appear that the number of deaths per thousand by consumption was, in

North Carolina	2.33	Tennessee	1.23
Illinois	1.67	Pennsylvania	1.22
New York	1.62	Wisconsin	0.93
Ohio	1.52	Missouri	0.78
New Jersey	1.43	Maryland	0.75
Massachusetts	1.29	Michigan	0.40

There were no deaths from consumption in Arkansas, California, Colorado, Delaware, Indiana, Iowa, Kansas, Kentucky Minnesota, New Brunswick, Prince Edward's Island, Utah, Vermont or Virginia, rather a notable list of States, considering that our membership in those States amounts to over 9635 persons.

The rule noted in former years that those of our members who are to die of phthisis may be picked out very largely from those who are below the normal proportions of height and weight is again verified, and we find that 81 of the 109, or about 76 per cent., were below the normal weight and twelve were below the lowest limit of our tables, or more than 15 per cent. below the normal weight. Only 21 of the 109, or about 19 per cent., were above the normal weight.

As regards heredity, twelve had lost one or more members of their family by phthisis, six had lost a parent by consumption, though in two instances the parent was so old (70) that it seems more likely that the cause was chronic bronchitis rather than actual tubercular disease. One had lost four sisters of consumption and was 42 years old when admitted. Of course it was argued that he had outlived any such danger. Another had lost two sisters of consumption and was 52 when admitted. He remained a member over ten years and died of a scrofulous disease of lungs and other organs, probably not essentially different from tubercle.

DEATHS WITHIN A YEAR FROM CONSUMPTION.

It is a little mortifying to find that six members have died of phthisis during the past year who had not been members a year.

No. 3670 of New York was a person aged 28, apparently in good health and flesh on joining, with an active out-door employment, an excellent family history, and recommended by one of our best examiners. Our report of the case is that he took a severe cold in December, which was followed by pleurisy with water in the chest and resulted in consumption, proving fatal in February. He was

under treatment in two hospitals and I think the case is correctly reported. There seems no reason to think that he was not sound when admitted; the consumption was undoubtedly the result of the pleurisy.

No. 3692 of New York, 31 years of age, also appeared to be in good health when he joined, and had no blemish in his family history. He is said to have had cough, loss of flesh, and rapid decline, was a member of the Order eleven months and was ill about six.

No. 3856 of Ontario, was a contractor, in robust health, but had lost a mother at 35 of some puerperal disease and a sister at 45 of an "unknown" cause. His disease lasted eight months and took the usual course of phthisis; he was 51 years old on entrance.

No. 3910 was the case of a physician 24 years old, who was small and of light weight. I think that there is little doubt that he was unfit for membership when he joined. He was hoarse at the time he was examined and soon developed laryngeal phthisis; the fear of which ought to have induced the medical examiner to have kept him out.

No. 4100 of Ohio, was 21 years old (5 feet, 5½ inches, 135 pounds), a book-keeper, with father and mother and paternal grandfather living, and ten living brothers and sisters. His three other grandparents were all over 60 years old at death. He was sick but eleven weeks and the case was undoubtedly one of acute tuberculosis.

No. 4244 of Pennsylvania, was 29 at joining, was beneath the normal weight (5 feet, 10 inches, 145 pounds), but had no blemish in his family history. His illness lasted only eight weeks, and seems to have been very similar to that of the preceding case.

These cases were all unfortunate, and yet the examiners were all men well known to be experienced and skilful, and there is no reason to think, except in one case above alluded to, that there was any deficiency of care or judgment at the time of the examination. It is unquestionable that men do at times pass from a state of health into rapid phthisis and we have certainly had an unusual proportion of these instances this year. I trust that the medical examiners will heed the lesson and redouble their care in avoiding such cases.

Were it not for these cases, I should feel justified in boasting that our success in keeping down the number of consumptive deaths had been excellent, as our proportion has been so small, and the average duration of membership among the consumptives so great.

DISEASES OF THE BRAIN AND SPINE.

Rather a high percentage (17.0) of deaths has occurred from diseases of the brain and spinal cord during the last year, amounting to 128.

Those variously enumerated as apoplexy, paralysis, congestion of the brain, cerebral hemorrhage, and cerebral embolism, probably belonging in one general class, were 84 in all. Then there were 21 of those called softening, inflammation, meningitis, abscess, and organic brain disease, probably also of kindred nature to each other. Six cases of general paresis, one of mania-a-potu, and two of neurasthenia or nervous exhaustion; this is the diagnosis given by the medical attendant, though eminent men doubt whether this disease ever proves fatal, and Professor Gower of London, in his celebrated work on "Diseases of the Nervous System" declares that there is no justification for regarding neurasthenia as a definite malady, it being merely a collection of symptoms showing debility of the nervous system.

Sixty-four of the deceased were over 50 at death, thirty were between 40 and 50, twenty-nine between 30 and forty, and five were less than 30.

Four died in less than one year after joining, but cerebral disease does not seem in either case to have been presaged by any symptom before the examination. No. 3671 was a book-keeper, 21 years old; his illness set in suddenly with a chill, fever, violent headache, restlessness, aching of limbs, over-sensitiveness to touch. The duration of his illness was five weeks and there was no autopsy and no family history of brain disease.

In No. 3848, death occurred five months after joining and the final illness lasted three months. The symptoms were emaciation, pain in head, failure of memory and then of the other faculties; he was in a comatose condition sixty hours before death. His father died of apoplexy at 57.

No. 3914 occurred in a "stockman," 4 months after becoming a member. He was ill two weeks with cerebral congestion, delirium and death. It sounds as if it were quite possibly a case of alcoholism. No heredity.

No. 4179 was a man 39 years old, five months a member of the R. A. While seated at breakfast he became suddenly paralyzed and unconscious, and died in three-quarters of an hour. His father had died of paralysis at 82, and his sister at 18 of spinal meningitis.

No. 3885 is said to have died of "Encephalo Malacia," a word coined from the Greek to denote, I presume, "softening of the brain." The deceased is reported to have "become childish, with loss of mind and speech; there was no autopsy." It is well for us all to become acquainted with the nomenclature of disease.

HEART AND CIRCULATORY ORGANS.

We again this year have a comparatively small number of deaths from diseases of the heart and circulatory organs, namely, 68 in all, or 9.0 per cent. of our total mortality.

One case only, No. 3726, died in less than a year after he was examined for the Order; and the details of the case are as follows: He joined in June, 1888, and in the fall of that year traces of sugar were found in his urine; in December he consulted a physician with regard to his heart, but no evidence of disease was detected there, but in January he had an attack like angina. At the last, in March, 1889, he was lying on the lounge, was taken with a sudden pain in the chest, and died in a few minutes. It is stated that he had recently obtained life insurance to the amount of \$10,000 in an "old line" company.

No other member died within a year, and only three within two years. The average duration of membership of the 68 cases alluded to was nearly seven years (83 months).

Four of them were less than 30 years old at death, eight were between 30 and 40, sixteen between 40 and 50, and forty were over 50.

Many of them died very soon after the commencement of the attack, 27 within 24 hours. Some were found dead in bed, some dropped by the roadside. No. 3649, a young man of 25, was running to catch the boat, and fell lifeless. He was a reporter, and apparently in excellent health, and had never before shown signs of heart disease; his father, however, had also died of heart disease.

No. 4319 had been suffering from rapid and feeble heart action, but was going out when he fell, and lived but an hour. He, too, was but about 33 years old; he had lost his mother by heart disease.

As a rule, however, there were but few of our cardiac invalids who gave any history of hereditary tendency to heart disease, and comparatively few, too, who had a history of rheumatism. No. 3665 was also a man of but 40 years, with an athletic form, good family history, and no rheumatism disclosed. His illness was about a year in duration, and he had cardiac asthma and shortness of breath;

had been under treatment, but was at his office, and died instantly. A post-mortem examination showed hypertrophy of the heart (weighed two pounds, its usual weight being about nine ounces) and insufficiency of the aortic valves, with lime concretions on them.

The description of No. 4097 is so striking that I quote it as I have it on my records, whether verbatim as given by the attending physician, or as copied by one or two clerks cannot be quite determined. It reads as follows: "Slight fever, was afraid of death, woke up suddenly in a fright; paralysis of the heart came on while he was asleep, and he died suddenly."

DISEASES OF THE LUNGS (NOT PHTHISICAL).

Acute lung disease has caused the deaths of but 81 members, or a ratio of 10.8 per cent.

More than two-thirds of the number (56) were ascribed to pneumonia, the remainder being called congestion, bronchitis, pleurisy, pulmonary apoplexy, and so forth.

9 died in January.	3 died in July.
7 " " February.	2 " " August.
9 " " March.	2 " " September.
9 " " April.	7 " " October.
9 " " May.	8 " " November.
9 " " June.	7 " " December.

Eighteen of them were in New York, ten in Massachusetts, eight each in Pennsylvania and New Jersey, six in Illinois, five each in Ohio, Maryland, and Wisconsin, four in Michigan, and so on.

One of the deaths from pneumonia, No. 3690, in Hamilton, Ont., resulted in four months after admission to the Arcanum, a thing which may very well happen from this disease, even if the risk on entrance is unexceptionable, but in this instance the attending physician intimates that there "may have been tubercular deposits in the apex of the right lung," which, if true, would reflect no credit on our medical examiner.

One member in Indiana, No. 3807, also died of pneumonia in 3½ months after joining the order. The history of the case is that of the ordinary run of the disease.

Still another death, No. 3676, by pneumonia, occurred in New York in 9½ months after the member became a brother. The duration of his illness was six weeks and two days. He had "regular pneumonia, going over to purulent infiltration, or gray hepatization, producing total obstruction."

There were no other deaths from acute lung affections among those who had been admitted to membership within a year. Most of those who died from these diseases were old members, many of them having belonged in our ranks eight to eleven years.

DISEASES OF DIGESTIVE ORGANS.

Eighty-three cases of diseases of the digestive organs have proved fatal to our members during the last year, or a percentage of 11.

In 23 of the deceased the liver was the organ implicated, in 17 they are said to have had peritonitis, four had gastric ulcer, four intestinal obstruction, and two intussusception.

In quite a large proportion of cases the diagnosis was established by an autopsy, notably in the cases of gastric ulcer and intestinal obstruction.

No. 3846, was a man of 40 years of age who had been eight years a member of the Arcanum. The duration of his last illness was 8 months. A splenic tumor was diagnosed shortly after its commencement, and "at death the spleen was found to weigh seven pounds; degeneration had begun at its upper and internal aspect; he had suffered chiefly from pain, vertigo, and insomnia."

No. 3858 was the case of a man in Michigan who had cirrhosis of liver of several months' duration; "had gradual wasting of flesh and strength, with dropsy of the bowels and the lower limbs. Had been in the habit of drinking liquor."

DISEASES OF THE KIDNEYS AND URINARY ORGANS.

The deaths from this class of diseases during the past year have been 72 in all, the ratio to the total mortality being 9.6.

Of these 44 resulted from nephritis, or other affections of the kidneys, being a percentage of 61 per cent.

Diabetes mellitus caused 11 deaths or about 15 per cent.

Five deaths followed cystitis, four were the effects of stone in the bladder, four of prostatic disease, and one man had syphilis, with a duration of four years.

Only one died within a year after joining (No. 3824); he was a man 53 years of age, a livery stable keeper, had urethritis followed by a stricture, and in six months by a perineal abscess; when the abscess was lanced the member died the next day, whether from hemorrhage or septicæmia is not stated.

One other died, after 22 months' membership (No. 3857), from

acute Bright's disease, the result of a severe cold; he had severe pain in the back and head, dizziness, scanty and high-colored urine, much albumen, and finally coma.

No. 3625 was carefully reported by one of our examiners, as follows: "Was ill for more than a year with headaches, loss of peristaltic action of the intestines, dyspepsia, irritability of the stomach, derangement of vision, hemorrhage into eye-balls and retina, albumen, and epithelial casts in urine. There was no autopsy."

No. 3687 was a case of Addison's disease, as shown by post mortem examination,—disease of the supra renal capsules being found, together with heart clot and incipient phthisis. He was a man 38 years old, and by occupation a "line-man." His family history was good.

The age of these men at death averaged 50 years; 2 were below 30; 14 between 30 and 40; 18 between 40 and 50, and 38, or more than half, were over 50 years old. The oldest one (over 70) died of prostatic abscess.

CASUALTIES.

The terrible disaster and flood at Johnstown, Pa., occurring early in the year, has helped to make up an unusually large number of casualties in the Order during the last year, and our number of deaths by accident is no less than 64, the percentage being 8.5.

Six members of the Johnstown Council and one of the Blairsville Council perished in the roaring waters at that place, two of them being the Doctors Beam, one of whom was our medical examiner.

Of accidents in other places ten were drowned in various ways, three being seamen, one an "ordinary seaman," who ought not according to our rules to have been admitted to the Order, one a "bay-man," probably an ordinary seaman to all intents and purposes, and the third a master mariner who was lost at sea whilst returning from Rio Janeiro. The others were the ordinary accidents of every-day life, the results of bathing, yachting, etc.

Our list of losses among railroad men includes seven members this year, three of whom were engineers, one a fireman, one a conductor, one a baggage-master, and one a switchman; all but the fireman were engaged in the proper performance of their duties. He had left his cab and gone to the rear to correct something out of place with the coupling, and whilst there engaged in conversation the parts of the train came together and crushed him. No. 4119 had been recommended for membership most strongly on the ground

that he occupied a position in which the duties were singularly free from danger. He was in charge of an engine which had for its duty to push loaded coal cars up an incline from the coal pits. The road was a Y-shaped piece, one branch of the Y running up the incline, the other branch and the base running along the foot of the hill. He had just pushed the loaded train up the hill, and left it in charge of a brakeman or conductor, who did not secure it properly. Our engineer had returned to the base of the Y when he caught sound of the noise of the cars, and knew they had escaped from the brakes and were running down upon him; he at once put on steam to reach the other branch of the Y, but the escaped train dashed into his cab just at the junction of the two branches, and he was so crushed that he had to submit to amputation of both legs, which with the shock proved fatal.

Of the two other engineers, one was thrown with his engine down an embankment, and one received concussion of the brain by his head hitting a sign-post by the side of the track.

The baggage master was thrown from the open door of the baggage car whilst performing his duties therein. The conductor's train was run into by a freight train which had not the right of way, and the switchman was caught while coupling cars, and his skull fractured.

Six others were killed in railroad accidents, none of whom were railroad employees, though one was a mail agent.

Four were killed by the accidental discharge of firearms, three by an overdose of opiates.

Eight fell from windows, roofs, or similar places, and were fatally injured.

And finally three were murdered, one being the celebrated case of Dr. Cronin, of Chicago, who was inveigled to a house in the suburbs, and there killed by the order of a secret political society. The doctor had been a member of our Order for more than nine years, and had for a long time, while resident in St. Louis, served acceptably as a medical examiner.

No deaths by accident have occurred to any of our miners, and but one death occurred in their ranks, this one being caused by typhoid pneumonia.

SUICIDES.

Deaths by suicide have been 26 in number during the past year, a percentage of 3.5. It appears, on looking at our tables for the past ten years, that our average percentage has been 3.4.

The methods of death were in 17 instances by fire-arms, in two by drowning, in two by hanging, and in three by poisoning. In one instance the deceased flung himself before a railway train, and in one it is not stated how the death was procured.

One took his life seven months after joining. Was a book-keeper of good form and good family history, and no reasons are assigned for the act. He was 41 years old at death. The death of another took place in 13 months after joining. He was a minister, 29 years old, with a good family history. No reasons are assigned. A third, a salesman, 31 years old, committed the deed when he had been a member 22 months. In him, too, there were no physical or family defects, and we have no explanations. No other one died within two years after they took up their membership with us, and their average duration of membership was six years.

Their average age at death was 42 years. Two were under 30, eight between 30 and 40, eight between 40 and 50, and eight between 50 and 60.

As regards their sphere in life it would seem as if most of them, as was remarked in a previous report, were men of position and influence, and occupied places of responsibility, such as merchants, manufacturers, managers, carpet dealers, cotton buyers, provision dealers, secretaries, book-keepers, salesmen, barbers, printers, carpenters, and one was a minister, one a physician, one a saloon keeper, and one a clerk in a liquor store.

As to the general question of suicides and their pecuniary relations with fraternal societies, the inquiry has been made of me by one of the principal officers of our Supreme Council, as to how the frequency of the act in the Arcanum compares with that in other similar organizations. This is a question which I cannot answer satisfactorily, because of the difficulty of obtaining the necessary facts regarding these other societies in order to make the comparison. The American Legion of Honor, according to the recent biennial report of Dr. J. Foster Bush, late Medical Examiner-in-Chief, met with a loss of 40 by suicide in a total mortality of 1464, or a percentage of 2.7. Availing myself of the able and instructive report on suicides, presented by Brothers Whitaker, Pound and Schryver to the Supreme Council in 1887, I find that at that time the rate of deaths by suicide in the Knights of Honor had been 3.69, and in the A. O. U. W., in the years 1881, 1882, 1883 and 1884, the percentage was 4.03. Ours, as I stated in the opening paragraph of this section, was 3.4 per cent. for the last ten years. It might be added,

too, that every endeavor has been made by me to include in the list of suicides all the deaths that were of that nature, and not to allow any such to be classed with accidents. I have no doubt, however, that in all organizations, suicides are often placed among the accidents, and that the efforts of friends to have them so considered, are often successful. It will probably be found that these deaths bear much the same ratio to other deaths in the Arcanum as they do in the other fraternal societies, there being no obvious reason why they should greatly differ.

CANCER.

The cases of cancer numbered 34, or were at the rate of 4.5 per cent.

Only three had been members less than two years, and their cases have no especial interest in them. The average duration of membership was over 77 months.

Seven cases showed disease of the rectum; seven of the liver; six of the mouth, throat, or tongue; five of the stomach, and there were many single cases involving various parts of the body.

It seems very extraordinary, but there is not one of these cases in which cancer had ever before appeared in the family history, so far as is shown by the applications. There are, to be sure, several in which some of the family died at middle life of unknown causes, and in some of them, of course, this disease may have been present, but there is no definite statement of anything of the kind. It may be added that this does not occur by reason of applicants fearing to confess this fact, since for several years the presence of cancer, or of one case at least, in the family history has not been deemed a bar to admission. Only one case seems to point to any such feature in the hereditary descent, it being that of No. 4221, whose father is reported to have died at 58 of dyspepsia; this may have been the effect of a hidden cancer.

There are no cases of sufficient interest to require a report. It may be observed, however, that an unusual number of cases were confirmed as to the diagnosis by an autopsy, ten out of thirty-four being so reported.

UNCLASSIFIED.

The seventeen deaths that have been placed under this category are not, for the most part, striking cases, but do not come readily under our previous headings.

Two were cases of parotid abscess followed by septicæmia and death.

Four were cases of alcoholism. No. 4004 had no occupation. Three years before death he began to drink, became insane, and was sent to an asylum, but after several months was discharged as cured; again drank, mania again developed, but subsided until within a few days of death. Nervousness, muscular twitchings, hallucinations, and paralysis for seven days ended the scene. His age was 43 years. The others differed from this only in minor details.

Four were cases of "pernicious anæmia," with marked loss of strength, pallor, periodical attacks of vomiting and jaundice. An autopsy was made in one case, showing extreme anæmia of the internal organs, which seemed otherwise healthy.

One case was that of "Hodgkin's disease," or lymphadenoma, or enlargement of the lymphatic glands, as explained in a previous report. He was ill eighteen months, and was 66 years old at death.

Four of the deaths resulted from general debility, nervous exhaustion, or general prostration of the vital powers. No. 3841 was a manufacturer, who was ill only one week, seeming exhausted and prostrated by "old age." He was but 68 years old.

No. 3936 died at 46 years; he was a secretary, and mysteriously disappeared. Proof of death was waived by order of the Supreme Council.

The last, dying from excessive obesity (No. 4014), was 69 years of age at his death. His illness progressed rapidly for years. "Natural predisposition to obesity and liberal eating were causes which led to loss of mental and vital powers." He was not in business.

RAILROAD EMPLOYEES.

The Supreme Council of the Royal Arcanum at its last session on June 7, 1889, resolved: "That in view of the complaint made by the Grand Council of the State of New Jersey, in reference to the rejection of railroad employees as such, the Medical Examiner-in-Chief be instructed to visit that jurisdiction, and in conjunction with its Grand Regent especially inform himself of the relative risks of the employees in the different railroads in that State, having reference to their construction and mode of operation, and of the relative risk of employees arising from the several capacities in which they are employed."

In accordance with the above resolution and on receipt of an invitation from Grand Regent Douglass, I went to Jersey City on November 19, 1889, and was there received most courteously and hospitably by a Committee of the Grand Council of New Jersey.

On the next day I was waited on by a committee consisting of Past Regent W. Guy Weaver of Middlesex Council, Perth Amboy, N. J., and Acting Regent Petter of Jersey City Council, who accompanied me to the passenger yards of the Pennsylvania R. R., where I was shown the different methods of automatic coupling there used in connecting the passenger engines and cars, such as the Miller and Jenney, the methods of using the air brakes, as well as the duties of the passenger brakemen, conductors, firemen, and engineers in their several stations.

Thence I was attended to the freight yards of the same road and saw there in detail the methods of making up and coupling trains, signalling and drilling them, the duties of the freight brakemen, the drillers, the switchmen and the freight conductors.

Brother Weaver next escorted me to the yards of the Central R. R., of New Jersey, and explained to me the various signals, semaphores and automatic switching devices there in use, introduced me to engineers and other employees with whom I had free opportunities to converse and learn their views regarding the safety of their relative occupations.

Other similar visits were also made to other yards in that city.

We next took a train on the Pennsylvania R. R. out to Rahway, in order to have the block system and the various details of the towers along the road practically shown to me, according to which the Pennsylvania and so many other of the principal roads are now operated.

At Perth Amboy we visited the Lehigh Valley "coal pockets" and saw the loading and unloading and coupling and drilling of coal cars; their trains are manned by an engineer, foreman, and four brakemen, there being no conductor. Subsequently we were invited by Superintendent Brodhead of this road to make some trips up and down the road for the purpose of having the lights, signals, and other machinery of the road explained to me.

On the next day Regent Petter accompanied me to Hoboken and introduced me to Brother F. J. Griffith, the assistant superintendent of the Delaware, Lackawanna and Western R. R. and a representative to the Supreme Council. With him I spent a large part of the day in going through the yards, machine shops, etc., of this road, and again inspecting the various details which I had seen in the other yards. Brother Griffith introduced me to the yard master, who made me practically acquainted with his own duties and those of his assistants, the baggage masters, and various others.

This completed my tour of observation and ended a most instructive visit. My warmest thanks are due to Grand Regent Douglass and the members of the Grand Council of New Jersey, and also to Brothers Weaver, Petter and Griffith, and all the brethren who contributed so much to my information and pleasure.

In a previous report I had stated that engineers and firemen of the various roads would as a rule be accepted, and that freight conductors would as a rule be rejected; the latter was a point on which the railroad men wished me to change my decision, and they stated before the Supreme Council that they did not, generally speaking, "think the occupation of freight conductor should be considered extra hazardous. A passenger conductor's certainly is not." (By the way, no passenger conductor has ever been rejected in our Order on account of his occupation).

Nothing became more evident to me or was perhaps more important than the degree to which the duties of certain men vary on different roads, and it soon became plain that whilst on one road the position of freight conductor was about as safe as that of any one on the train, on another it became almost as dangerous at times as that of freight brakeman, a grade of men whom none of our railroad men among the members of the Order ventured to recommend. On the Pennsylvania R. R. I was told that freight conductors do no coupling and do not leave their cabs except to give orders to engineers, firemen or brakemen. This is also so with certain through freight trains, and perhaps fast freight trains which convey fruit and other perishable materials. To these trains are granted certain extra privileges and the right of way the same as to the passenger trains, so that they are less liable to meet with accidents of all kinds.

Of course the conductors of such trains are comparatively safe in their situations, perhaps as safe as passenger conductors.

On the other hand (and the fact is important), I was told by one of the chief officials of another road that the freight conductors, although not *required* in the line of their duties to do it, make unquestionably more or less couplings of the cars every day of their lives, that whenever a car was to be taken on or off the train, and no brakeman was immediately on the spot to do it, the freight conductor allowed no delay but immediately stepped forward and did it himself; this it was explained he did involuntarily, from the fact that he had himself been a freight brakeman and was familiar with their duties.

Train dispatchers' duties also vary greatly on different roads.

On the Pennsylvania, that official sits in his office and with maps, wire or phone gives his orders to move the trains. On the D. L. & W., the train dispatcher is ubiquitous, and gives orders to engineers and conductors in the yard, or wherever the trains and cars are. It is easy to see that the dangers of their position vary greatly.

Names of occupations are given differently on different roads; the switchman in some places stands on the ground near a switch and turns the track according to the orders received and is in no danger so long as he is a sober and intelligent being; at another time in a freight yard he is the chief-driller or head-brakeman in a position full of danger.

Car inspectors are sometimes those that *superintend* the repairs, mark the work to be done, and inspect that which has been done, but do no manual labor. But then, again, a car inspector or "Galvanizer" is one, who himself makes the repairs in yards or on tracks where cars are being moved continually, and is constantly in danger of accident or injury.

COUPLING FREIGHT CARS.

No one can couple freight cars without being from time to time in positions of danger. Freight cars upon different roads are made in such different patterns that when they are run together the bumpers on one may not meet the bumpers on another and thus the whole end of one car may come immediately in contact with the end of another so that not even a hand could remain between them without being crushed. On the other hand, with passenger cars and the Miller or Jenney couplings a man may stand safely between the cars when their connecting platforms are in contact. With the freight cars, various couplings are used and some are more difficult to use than others, for instance, the "three link coupling," which for the most part requires the use of both the brakeman's hands to bring them into a position to be joined, is a very dangerous coupling.

Whoever, therefore, assists in the duty of coupling freight cars, whether he be freight-brakeman, driller, yard-master, or assistant yard-master, baggage-master or freight conductor, for all of these officials from time to time do this kind of work, is in a dangerous position and must be considered an extra hazardous risk.

Speaking of yard-masters, too, in the same connection, I was informed in one yard that said official no more thought of coupling cars or doing any kind of manual labor than the superintendent of

the road. In another yard I was told by the yard-master himself that there was no kind of work done in his yard whether coupling, switching, or anything else, dangerous or not, that he did not take a part in, and that his assistants were expected like himself to assist in every detail, whenever by so doing they could assist in the proper despatch of business.

Baggage-masters on different roads and in different parts of the same road are very variously exposed, and I have been strongly urged by a brother at Salamanca to shut them out entirely. On most of the branch roads it is customary for the baggage man to couple his car to the locomotive. This is more or less dangerous according to the kind of coupling in use; if it be an automatic coupler the man is safe, if not, he will probably sooner or later be injured. Quite recently I took care of a baggage-master whose hand was crushed in doing his ordinary duty of coupling with a link and pin. The brother from Salamanca, however, alludes to another danger as follows: he says, "on through express trains, buffet-cars, the baggage car is part of the smoking car, and when the baggage car is part of the smoking car and when the baggage-master gets in there with his baggage there is no possible way for him to get out, and if there happens to be an accident you can imagine what he would be like with all those big trunks flying around him. There are," he says, "two of those trains that run out of Salamanca that have been put on within three years, and during that time two baggage-masters out of six have been killed, and no other person on the train was seriously hurt. One's head was cut clean from the body, and the other had his life literally crushed out of him. Do not understand that both of these men were killed in the same car at the same time. This occurred in two different accidents, as they only have one baggage-master in a car."

Brother Weaver, to whom I sent this letter, believes that cars constructed as above described are very uncommon, and says that even if the baggage-master has no door communicating with the rest of the train, he surely has two very large side-doors. He says that it is a very rare thing to hear of a baggage-master being killed by his baggage, although such cases are heard of once in a while. He adds, too, that it must be remembered that there are baggage-masters on the local and suburban trains that do not handle two trunks in a week, but simply look after the packages of the passengers; this class of baggage-masters greatly outnumbers all others, and are [the] ones who couple their combined smoking and baggage

car to the engine. He explains how this coupling is made, and says that in these cases a man can stand between the engine and the train without danger, by reason of the kind of connections used.

Brother Griffith of the D. L. & W. also writes me that in his opinion "all train men (except brakemen) on first-class roads are good risks, especially conductors and baggage-masters on passenger trains."

The mortality of baggage-masters in the Arcanum has been, I think, limited to two deaths, one being killed by being struck on the abdomen by the corner of a trunk, which was thrown from one car to the other, the other death occurring by the man's falling from the open side-door of his car while the train was in motion. It might be added that one has been recently rejected because it appeared that besides coupling his car to the locomotive he was also, when not on his regular trips, employed in coupling and drilling cars in the yard.

THE BLOCK SYSTEM.

One of the improvements in railroading which has been made in recent years, and which it is claimed does an immense amount toward making the life of every railroad man more secure, is the "block-system," a plan by which the road is divided up into blocks or sections over which the trains pass, and under which they are not allowed to pass from one to the other until they receive a signal that the next section is clear, and that they can enter upon it. On coming near the end of one section and the commencement of another the trainmen will receive one of three signals, first that the coming section is all clear and they may go ahead, or second that it is occupied and they must not enter upon it at all but must stop, or third, that it is occupied by a receding train or some temporary obstacle, and they may proceed cautiously, the theory being that each train has the whole block to itself, and can never create a rear collision by bumping into a train in advance, or enter upon the new block or section until the train in advance has left it.

This system, when rigidly enforced, must prevent, it would seem, the possibility of one train running into the rear of another, and when all the trains in one direction go on one track, and all those in the other direction on another, as is the rule, it would seem that the block system must eliminate all possible dangers from collisions. It is probably the most efficient device that has ever been put in use for the safety of the lives of the public and the railroad men.

It is not, however, unailing—no system can be which depends

on the vigilance and obedience of men, — and in this system the failure of any one of several men to give the right signal at the right time, or the failure of any one of several men to read the signal aright and to act upon it at the right moment, may destroy for the time the whole value of the system. In proof of this, only a few weeks after I had the system explained to me between Rahway and Jersey City, trains A and B were going over that same piece of road, train A in advance. When train B came to a certain signal station, it received the order to proceed with care, as train A had not yet left that block. Train B proceeded with care, but not with care enough, and ran into train A, not doing a great amount of injury, but making wreckage enough to derail train C, coming in the other direction on the adjoining track.

On the Old Colony Road near Providence, since then, as the passenger train was one day approaching its terminus, having received the signal that the block was clear, a switching engine upon a side track suddenly ran in on the main track, and a collision resulted, killing the engineer of the passenger train and doing an immense amount of damage. Precisely the same accident occurred on the same road a few months later as a passenger train was approaching Boston. Fortunately, no lives were lost in the latter instance. In both cases, so far as can be ascertained, the switching engineer entered the block without the slightest authority.

I only mention these instances to show that danger cannot be wholly precluded by devices dependent on men's watchfulness or obedience. All such devices may, however, wonderfully lessen the dangers of both passengers and employees, and make it more prudent to accept such men in the Arcanum and kindred societies.

MORAL CONSIDERATIONS.

In speaking of the various factors that combine to make the life of a railroad man less hazardous than formerly, my attention has been more than once drawn to the fact, and it is one of great importance for the purposes of this inquiry, that railroad men of all classes and grades have in the last five or ten years made great improvements in education and intelligence. This has been repeatedly pointed out to me with great pride — and it must be seen to be of immense importance — for the meetings of the engineers' brotherhoods and the firemen's societies, and whatever other similar organizations exist among all classes of railroad men, must greatly improve the members not only socially and morally, but technically in their

skill in their handicraft, their knowledge of expedients, and their bravery and manliness in danger.

For this reason, in addition to others, in judging of a man's availability as a candidate for the Arcanum, his general habits and morals and education ought so far as possible to be taken into the inquiry, and for this reason the railroad men claim that on the best roads, where the most safeguards are thrown around the men, and the best opportunities given them to read, write and educate themselves, the men are correspondingly less careless and reckless and are better risks; and that it is the lower grades of men who occupy the poorest paid and most dangerous positions on the poorest roads, who ought not to be admitted to membership in the R. A.

In connection with this line of thought a member of the Order, in writing me recently, recommending a railroad man, did so most urgently on the ground that he was a strict teetotaller, and for that reason less liable to accident; and he stated that about all the injuries among railroad men are due to the over-use of spirits — a statement which I regard as wholly unjust, because it seems to me from pretty extended observations, that temperance is so general among all grades of railroad men, except possibly the very lowest, that the element of drunkenness can safely be eliminated from the dangers to which railroad men are exposed.

SINGLE TRACK ROADS.

Opinions of my railroad friends differ as to the advisability of taking employees of these roads, according to the kinds of these roads with which they are familiar. One advises me to take none of them except after the applicant has *proved* that he can be safely admitted; another one thinks that on the best roads they are not extra hazardous risks. On some roads, especially the poorer roads of the West and South, where the road is single tracked for the sake of cheapness, and where, therefore, the whole equipment and management of the road is run by the cheapest methods, accidents are common. On others, as for instance, on some branches of the D. L. & W., everything is carried out on the most thorough methods, regardless of expense, and the dangers are reduced to a minimum.

Still, for the most part, men on single track roads will be closely inquired into before they are allowed to obtain membership in the Arcanum.

CONCLUSIONS AS TO RAILROADING.

Thoroughly impressed, then, as I have been with the fact that it will be prudent for the Arcanum to considerably widen its portals to

these risks, if the selections be made with due regard to the road on which they work, my views, as modified by my visit to Jersey City, and by my correspondence with various brothers, who, from their official duties have a pretty full knowledge of the dangers to which railroad men are exposed, will now lead me for the most part to approve engineers on freight, passenger, and yard engines; firemen on freight, passenger, and yard engines; conductors on passenger trains, and brakemen on passenger trains, unless by coupling with dangerous couplings they place themselves in jeopardy.

Freight conductors who travel on through freight trains, fast freight trains, and other trains, where they do no coupling, will probably be accepted.

Train despatchers and yard masters who do not take an active part in drilling and handling cars, or perform their duties in dangerous localities will also probably be accepted.

But that I shall generally reject freight brakemen, *flagmen, switchmen, car inspectors (except the foreman car inspector), wipers, laborers (except section foremen), and usually the lower grades of employees, except where it can be shown that their duties are unusually free from danger. Foremen car inspectors and section foremen may doubtless be safely admitted.

Round-house men, from the superintendent to the various mechanics, and down to the "hostlers," who feed, water, and groom the engines, will not, as a rule, be deemed extra-hazardous.

CITY FIREMEN.

Among the employments which were referred to at one of the sessions of the Supreme Council as being extra hazardous and therefore requiring rejection in the Arcanum, was that of "city firemen." The matter has therefore been under consideration since that time and I have not approved such applications, except when duly authorized parties who were conversant with the applicants' duties certified that they might properly be insured.

In this matter I have lately received valuable information from Dr. Stubbs, the State Medical Examiner of Illinois, and since then similar information from Dr. C. E. Bruce, Subordinate Examiner in New York City.

From the former it appears that in the city of Chicago during the

* The line of promotion, as a rule, among freight car men is as follows: the green hand becomes a brakeman on the middle of the train, next a switch-man, chief driller, or head brakeman, next a flagman, and next a freight conductor.

last six years the following have been the deaths among the members of the fire department.

Year.	Deaths.	Membership.	Rate.	Deaths due to Occupation.
1884	2	456	4.39	1
1885	6	487	10.27	3
1886	none	527	none	0
1887	9	582	15.47	2
1888	4	663	6.03	1
1889	3	869	3.45	0
Average	4	597	6.70	1

Regarding the city of New York, Dr. Bruce gives me the following figures, which are still more favorable. Number of men 1000.

Year.	Total Deaths.	From Injuries.
1887	14	3
1888	11	1
1889	10	1
1890 to April 23	4	1

Dr. Bruce remarks very pertinently that this statement compares very favorably with any from the ordinary walks of life.

Those killed at or going to fires among the Chicago department were one captain, three truckmen, two pipemen, and one driver.

The grades are not given in the New York department.

It is farther claimed, with respect to those from Chicago by Dr. Stubbs' correspondent there, that the deaths from natural causes are not in excess of the normal rate; and this seems to be true, the rate being a trifle less than four per thousand, but the list of deaths is extraordinary as regards their causes. There are twenty-four in all and eleven were killed accidentally, there being four other casualties besides those reported in the line of duty, and there were two suicides, four cases of consumption, three cases of cancer, one of pneumonia, one of bronchitis, one of paralysis, one of Bright's disease, and one of heart disease. This certainly is a pretty unusual list of constitutional diseases in twenty-four deaths, but is doubtless dependent on other causes than their occupation.

But with reference to the amount of hazard involved in accepting these men as risks for life insurance, so far as their likelihood to receive fatal accidents in the line of duty goes, seven such deaths in 3584 members in Chicago and six such deaths in a membership of 3300 in New York ought not to cause the rejection of these men as a class.

GLASS-BLOWING.

State Medical Examiner Reeve, of Wisconsin, has called my attention to the dangers that attend men employed in glass-blowing in their labors. He says that they work, as we all know, in apartments in which they are subject to the dangers incident to rapid changes of temperature in highly heated rooms, and that their labored exertions in blowing leads to emphysema of the lungs and to other lung troubles.

Dr. Langland of Wisconsin, who had recommended some of this class of men, wrote in connection therewith that "these applicants claim that their occupation is not detrimental to health when ordinary precautions are taken and whiskey left alone; intemperance they say is very prevalent among glass blowers, and the cause of early breaking down of health in quite a number of their members."

It is quite likely that the latter gentleman is right about the cause of a large mortality among glass-blowers, but his remarks seem to indicate that it is a general belief that the mortality is large among them, and care must therefore be taken in allowing them to join our ranks.

With the view of ascertaining what can be learned from our own experience about these men, I have looked over our entire list of deaths since the foundation of the Order, and found that we have lost but five members from among those connected with this industry, and two of these were superintendents who cannot have been exposed to the personal risks which the laborers incur. These superintendents died, the one of cholera morbus, the other of intussusception. In the other three cases the men were glass-blowers and two died of phthisis and one of typhoid; the latter had been a member but sixteen months, one of the phthisical men was a member forty-six months and the other more than eight years. I have no means of ascertaining how many men in this kind of work have already joined the Order, but from my recollection the applications have not been frequent. I trust the medical examiners will scrutinize each case before admission and take note of all facts bearing upon the subject and kindly report to me, as far as possible, the history of all glass-blowers who die in the Order.

AIMS OF THESE REPORTS.

It should be noted that although the primary object of these reports is to inform the officers and members of the Supreme Council, as well as the whole membership of the Order, as to the results of

the year in a medical point of view, what the medical examiners have done or what they have failed to do, yet the reports have a still farther work to do which is nearly as important, and that is to serve as a medium of communication between myself and the other medical examiners, and thus enable me to give them such advice and suggestions as seem to me necessary to make the work uniform and the decisions alike in all the jurisdictions; hence if in some of these pages I seem to use medical terms too freely it will be only done for the purpose of making the point clear to medical men.

ALBUMINURIA.

I have written so much in my last two reports regarding the safety of admitting to the Order persons who have had albuminuria that I would not dwell farther on this topic were it not for the fact that at the meeting of the British Medical Association in Leeds, England, in August last, the subject was freely discussed by some eminent practitioners who have heretofore published articles on the subject.

Dr. George Johnson, the author of a book on "Diseases of the Kidneys," 1852, and of "Lectures on Bright's Disease," 1873, has always consistently taken the ground in various articles published in medical journals that albuminuria is pathological and never physiological, in other words that it is an indication of disease and does not occur in health; still he too states that acute Bright's disease is essentially a curable disease and that albuminuria may disappear in from a few days to many months, and he has seen cases of complete recovery after albuminuria had continued for one, two, or even three years, and he has published one case in which complete recovery occurred after seven years of persistent albuminuria, consequent on scarletinal nephritis. In almost every instance intermittent albuminuria, or as it is called, functional albuminuria, may be traced back to some recognized cause, such as acute nephritis. While these forms of albuminuria may be curable under suitable dietetic, medicinal, or hygienic treatment, yet in such cases the albuminuria is liable to prove persistent, and a persistent albuminuria ultimately results in a fatal degeneration of the kidneys.

He says that he supposes that no medical officer would advise that an applicant with a decided trace of albumen in the urine should be accepted at the ordinary rate of premium.

Dr. F. W. Pavy, after alluding to the well known fact that Weston, the pedestrian, had temporary albuminuria after an attempt to

walk 115 miles in 24 consecutive hours, and that candidates at examinations after severe mental strain sometimes have albuminuria, and that cases of transient albuminuria may follow sudden immersion in cold water, thinks that cases of temporary albuminuria may be accepted in life insurance upon the payment of additional premium.

Dr. Maguire said there were two classes of functional albuminuria, the first of high arterial tension, which is frequent in applicants with a family history of Bright's disease; the second with low arterial tension, who were usually men of weak frames and especially weak circulation. In the former class the albumen may be easily made to disappear under suitable treatment, but when present at the time of examination for insurance the life should be rejected. The second class if accepted at all should be received only at an increased premium.

H. Pye Smith (referred to in last year's report) says that casts may be absent in cases of renal cirrhosis or may be present in cases of temporary renal congestion. He would for practical purposes of prognosis compare albuminuria with hemoptysis; it is always serious, though it does not always indicate organic disease. Even if there are indications of structural lesion of the kidneys the prognosis may be good, as Bright's disease like phthisis may be curable. When *believed* to be functional, it is better to defer the applicant for assurance rather than to attempt to determine what is often an insoluble question.

Dr. Gairdner of the University of Glasgow said that the presence of serum-albumen in the urine even casually, as shown by the usual tests, must be regarded as a danger signal, and he thought that the only result that must follow in cases when the risk seems good but albumen is found to be present is that judgment must be postponed weeks or months. Circumstances may show that the occurrence is purely casual and almost accidental, or that a longer period of probation may be required, or the case one that must be rejected.

A. Rabagliati said the specific gravity of the urine should be one element in making the decision, or indications of gout, or the presence of casts; but he should not agree with those who are disposed to take a favorable opinion of cases in which even a trace of albumen was present. In 3246 deaths in the Scottish Widows' Fund, 7.8 per cent. were due to urinary diseases, and 4.3 per cent. to diseases of the kidney and nephritis. The average age at deaths of albuminuria was 57 years. He would rate up young lives moderately

when albumen was present, rating up lives under 40, but leaving or rejecting absolutely those over 40 or 45.

C. R. Drysdale believed that in life assurance the medical officer of a company must judge whether the applicant has temporary or permanent disease. In the latter case he cannot approve, in the former delay is advisable before reaching a decision.

Dr. Saundby, believing that whilst there may be certain cases of albuminuria safely insurable, says the following features should reject: 1st. A history of Bright's disease in a parent or any two near relatives. 2d. A personal history of past acute nephritis. 3d. A history of plumbism or gout. 4th. Cardiac hypertrophy, hard pulse, frequent nocturnal micturition, or retinal change. 5th. Where the age is over 40 years. 6th. When the urine shows casts. 7th. When there is chronic dyspepsia. He disagreed with Dr. Pollock in his "Medical Hand-book of Life Assurance,"* who says that albuminuria, formerly existing as a result of acute nephritis from cold or exposure, with an interval of perfect health for years, need not disqualify the proposer.

Dr. Eddison, of the Leeds Infirmary, believed that every case which showed albumen by the ordinary tests, should certainly either be refused or postponed for later examination for six months or a year, and then rejected if the presence of albumen in the urine persisted, no matter how apparently otherwise healthy the applicant may be.

Now I have taken up a good deal of space in quoting these opinions to show how difficult or impossible it would be for those whose applications come to us with the odium of having "traces of albumen" to pass all the tests which the association of physicians believe should be passed before the applicant should be received. I have explained previously that every person who cannot be received into an insurance company without being "rated up," as it is called, that is paying higher premiums than others of his age, ought, for that very reason, not to be admitted into the Arcanum at all. That is, that we ought not to take any who are not (so far as can be seen at least) as good risks as those with whom they are to be associated, who will have to pay for the deaths of these unfavorable risks when they do die.

The Arcanum's examination for kidney diseases includes ordinarily only an inquiry into the specific gravity, the presence of albumen, the

* Referred to subsequently in this report.

presence of sugar, and the reaction. If in any of these the candidate shows any inclinations of disease, he fails to reach our standard and should not be admitted.

It should, perhaps, be added that there are certain of the new tests for albumen which are claimed to show albumen in smaller quantities than our old tests, heat and nitric acid. With regard to some of these there is a doubt in the minds, even of chemical experts, whether the cloudy band which is said to indicate the presence of albumen always does indicate it, and it is thought to be sometimes produced by something else; and this belief was frequently alluded to in this discussion. I quoted last year the opinion of Professor Edes that an albumen which was indicated only by some of these newer tests, and could not be demonstrated by the proper use of heat or nitric acid, was not of much significance, and this is no doubt true as a rule. Its constant presence as shown by these finer tests should no doubt be heeded, but need not positively reject, if in all other respects the candidate seems unexceptionable, and albumen cannot be shown by carefully conducted tests with nitric acid. A low specific gravity too is a danger-signal, when there is any reason to apprehend Bright's disease; age is another: a gouty history or a history of any lead disease are still others; and all must be borne in mind.

DYSPEPSIA.

Hardly a day elapses without my cautioning some medical examiner that a person who suffers from dyspepsia is not so good a risk as one who does not, and that it may be necessary to reject an applicant on this account. It would hardly seem to be necessary to say to physicians that one is not in good health whose digestive organs are not capable of performing their full functions without suffering inconvenience or requiring medical treatment. It is very true that there are many persons who suffer more or less frequently from want of perfect digestion at all times, but are in spite of these symptoms, sufficiently well to allow them to attend to the calls of business and society without succumbing to their maladies or discomforts. These persons are for the most part those who eat too much, drink too much, or work beyond their strength; and the mere statement of the causes of their dyspepsia must show to one who thinks that these causes may, besides giving discomfort, lead to sickness and thereby to premature death. It must also be borne in mind that whilst such persons may bear very well the labors and

fatigues of every day life whilst everything is passing off harmoniously, yet that if the time comes when some intercurrent disease like pneumonia assails them, they will not have the stamina to withstand its attack, and they will become the early victims of "la grippe" or similar affections which are dangerous only to the weak.

So much on general principles is apparent to all, but beyond this every educated and observant physician must know that these symptoms of indigestion may point to disease of the stomach as caused by cancer or dilatation of the stomach, or may result from that weakness of digestion observed in early phthisis, or to the acid eructations of incipient gout, or to the catarrh of the stomach, either acute, sub-acute, or chronic of Bright's disease, or to the flatulence, nausea, vomiting, and perhaps jaundice of cirrhosis or any chronic form of liver disease.

The entrance of dyspeptics into the Order, even of those whose dyspepsia is so slight as hardly to receive mention in their applications, is fraught with danger, except when the medical examiner is familiar with and fully remembers the symptoms and progress of the various chronic disorders which are sometimes ushered in or pointed out by indigestion and dyspepsia. The Supervising Examiner ought not to allow any such cases to meet his approval until he has made pertinent inquiries into the applicant's state and symptoms.

Men with dyspepsia are certainly not first-class risks and may be at the gate-way that leads them to chronic disease of the stomach, lungs, kidneys or liver. We have insured already too many such applicants.

BOOKS ON MEDICAL EXAMINATIONS FOR LIFE INSURANCE.

Every medical examiner in the Order should have in his library for frequent reference at least one good work for instruction on the principles on which physical examinations for life insurance should be made, and the character of risks estimated.

For this purpose Allen's "Medical Examinations for Life Insurance" and Sieveking's "Medical Adviser in Life Assurance" have been long in good repute, and probably are still most in use. The former is, however, a little behind the times, and always gave attention to details rather than principles. The latter, on the other hand, though better written and broader in its treatment of the subject, hardly gives sufficient attention to details. Both are, however, valuable and hardly to be dispensed with by an examiner.

During my summer vacation I made pretty diligent inquiry among medical centres as to what books on this subject there were in the field, and would like to call attention to some of them. Mention should perhaps first be made of the "Life Insurance Examiner," by Charles F. Stillman, as being one of the fullest and most ambitious works of the kind now extant. It is brought well down to the present time, gives a thorough treatise on the examination of urine, both chemical and microscopical, as well as very full methods for physical examination of the chest, and seems to me to err (on the safe side, perhaps) by being too elaborate and lengthy, and, therefore, too expensive. It is a quarto book, published by "The Spectator Company," New York and Chicago.

There is a French book, "Traite Complet de L'Examen Medical dans les Assurances sur la Vie," which I have found excellent, though the author remains anonymous. He is stated to have been for a long time the director of one of the largest insurance companies. He enunciates the principle which I have not seen elsewhere stated, though it is almost self evident when stated, that in general "one should refuse an applicant who will be obliged sooner or later to undergo a surgical operation." The book is well written and contains a great amount of interesting information. Published by L. Warnier, Paris.

The best book for general purposes, I think, is a recent one called "The Medical Hand-book of Life Assurance," by Dr. J. E. Pollock and Mr. James Chisholm, Actuary. It is published by Cassell & Co., contains about two hundred pages, is well up to the present condition of modern medical knowledge, does not dwell much on methods and seems to be thoroughly digested. One may not always coincide with its conclusions on every point, but they are always worth considering. It is similar in style to Allen's book, but better written.

Finally my attention has just been drawn to a new book, either in or just out of the press, whose prospectus only has been seen, but which seems to promise to be a work containing much valuable information. It is called "How to examine for Life Insurance," and is written by Dr. John M. Keating, President of "The Association of Life Insurance Medical Directors." The advertisement seems to indicate that it will be worthy of study, and that it will be a valuable work of reference. It is published at the price of two dollars, by Bahl & Fulton, Lock Box 207, Philadelphia, Pa.

THE HAMILTON RESERVES.

Up in Hamilton, Ontario, are some members of the Arcanum who are talking of seceding from the rest of the Order and setting up a little dominion of their own. They have published a manifesto declaring that whereas the longevity in Ontario is superior to that in the United States, and whereas her medical examinations are less lax than in those outside of Ontario, and whereas the Councils of Ontario are putting more money into the Supreme Treasury than they are taking out, that therefore it is incumbent on them to withdraw from their less deserving brothers.

They fortify their statements with extracts from my reports, which are accurately quoted, though sometimes rather ingeniously dovetailed together.

On looking into the facts I find that for the three years ending February 28, 1884, no State had a lower death rate than Ontario, except Missouri, that for the next year none did better in this respect except Illinois and New Jersey, that during the next only *eleven* did better than she, Missouri, Illinois and New Jersey still leading her; the following year she came forward again, Illinois and Connecticut, however, still in the van, but during the next twelve months she fell back, Illinois still ahead of her, together with Ohio, Indiana, Massachusetts, Michigan and Rhode Island; the following year she gained one and outstripped Illinois, but was led by Michigan, Rhode Island, Wisconsin, Connecticut and Maine. This year she is again well to the front, Indiana, Maine and Connecticut being, however, successful competitors.

From all this it appears that Ontario is, no doubt, a good and healthy province to reside in, but it is also apparent that she does not surpass *all* others, and if we take one other fact into consideration, which the Hamilton brethren have not referred to, namely that in each of the years above mentioned there have been besides those states which had fewer deaths than Ontario, certain other states which had no deaths at all, notably Minnesota, Kansas, Iowa, Colorado, Vermont and others, which though having a smaller number of members than Ontario ought not certainly to be ignored in such a comparison, it will appear that the phrase used by the committee of Hamilton, "the superior longevity existing in Ontario as compared with the United States" should read "as compared with *some* of the United States."

The second claim of "lax medical examinations by medical

examiners of the Order outside of Ontario," being virtually a claim that the examinations made by the medical examiners of Ontario were better than those made by medical examiners in the United States, I do not intend to investigate very closely, knowing quite well that the medical examiners of Ontario would make no such claim, and knowing that there are excellent examiners in both sections whose relative merits have not been and cannot be fairly tested. I need not say that as a whole I have been well satisfied with the skill and capacity of the medical gentlemen of Ontario.

The following extracts, however, from the report of the committee from Hamilton are so utterly unfair and misleading that they can only proceed from ignorance or something worse, and I feel personally aggrieved by them as a supervising examiner. They say "when we find men admitted again and again whose near relatives died of that fell disease." Now in one year which he quotes, ten out of eighty-two consumptives had had consumptive relatives, in another year eight out of fifty-four had a similar history, in still another there were nineteen out of eighty-six with consumptive family history, in a fourth there were twelve such cases out of a hundred and one. Now this is a *very* small percentage of such cases among consumptives and is quoted by me for that reason. If the committee thinks these results inexcusable, would they suggest that we reject *every* applicant having any history of consumption in his family? If we do we will reject hundreds who are now admitted, and not only admitted but are found to be good risks — all this is a question for the supervising examiners to settle. The subordinate examiners do examine and do recommend such applicants, examiners from Ontario as well as from the States; the supervising examiners reject many such, but they do try to give the benefits of the Order to as many of them as they think will outgrow their family tendencies. Applications are referred to me from Ontario as well as from all other jurisdictions in which the applicants have lost a brother or sister, perhaps, from consumption; now it would be comparatively easy to reject all such, but if we had always done so we should have kept out hundreds of men who are now valuable members of the Order, and the Order would have been just so much the weaker for it. Hundreds of these men have proved to be good risks and were properly admitted.

They say still farther "when we find men admitted who are below the normal weight in many cases." Now there is but one inference to draw from such a remark, which is that in the opinion

of these gentlemen, men below the normal weight ought never to be admitted; that is that no man six feet high ought to be admitted unless he weighs 180 pounds, and that no man of five feet and eight inches ought to be admitted unless he weighs 156 pounds; 180 and 156 pounds being the normal weight for men of those heights respectively. Not only is this a fair inference to be drawn from the paragraph, but it must also be inferred that in the opinion of these gentlemen the medical examiners of Ontario do not recommend for membership any who have lost any relative by consumption, or any who are even a pound below the normal weight, an opinion in which they are very much mistaken, I am glad to say. When the Arcanum keeps out of its ranks *all* who have any family tendency to consumption, and *all* who are beneath the normal weight, they will lessen our numbers in vast proportions, and even if they lessen our rate of consumptive deaths (which I very much doubt), they will not, I believe, lessen our total mortality.

The committee, in the course of their remarks, make some pretty caustic comments on the fact that men "in a considerable number of instances die of phthisis within one year after admission," but do not mention any who have died of this disease in Ontario, except one who had been a member nearly four years, and two who had been members more than three years before their decease. They have not inquired whether any died within a year.

The inquiry would have shown them that since the establishment of the Royal Arcanum in Ontario, 73 of its members have died in all, and that 16 of these, more than 20 per cent., had been members less than a year. Of this sixteen who died within a year, two died from casualties, three from pneumonia, one each from typhoid fever, peritonitis, Bright's disease and diabetes, two from brain disease, two from heart disease and three from consumption. Two of this sixteen belonged to Kanawha and Regent Councils, whence this report emanates, (one, however, being caused by an accident).

Dr. C. T. Campbell, the Provincial Medical Examiner, has answered their statement in a more judicial way and on broader principles than has been attempted by me, in simply examining as I have done the figures and criticisms based upon my reports.

I am very glad to agree with him that the death rate in Ontario is below the average, and that for the most part the selection of risks in Ontario has been very careful. I am not prepared to say that it has been more careful than in the average of the States, for this is not a question that can be settled, as he points out, by a brief time or any small number of deaths.

But he replies very sensibly I think, that, even if all the claims made by the committee were wholly true, that even then their conclusions would not be justified, nor would it follow that it would be for the interests of Ontario to withdraw from the Order.

May we not rather hope that the organization there will continue to be the gem of the various jurisdictions, that its health and happiness will continue to be our model, that its examiners will continue to strive to lead the way for all the rest, and that whenever we look up into the firmament we may still see the same cold, pure diamond surmounting all the rest of the stars in the crown of the Royal Arcanum.

In conclusion, we sincerely trust that Ontario will continue to maintain her favorable rate of longevity, that her medical examiners will continue to do their work thoroughly and well, and that above all and especially that the day of pestilence and desolation will never come when she will be obliged to draw more from the Supreme Treasury than she pays into it.

STATE MEDICAL EXAMINERS.

During my summer vacation Dr. Hanscom, the State Medical Examiner of Massachusetts, performed the duties of my office in addition to those of his own State, and, I am glad to say, very satisfactorily to all with whom he came in contact. I certainly have every reason to be grateful to him for the promptness, the care, and the good judgment he displayed in all his official acts, as well as the courtesy and patience with which he kept up the correspondence of the office. I found on my return that harmony and pleasant relations between the medical men had been in no case interrupted.

My relations through the year, as in former years, have been uninterruptedly social and friendly with all the State Medical Examiners, and I have been indebted to them all for valuable suggestions and have had many opportunities to observe the close and careful scrutiny which they have given to the cases upon whose merits they have had to decide; matters requiring professional learning and rational judgment are daily and hourly laid before them, and it has been a great encouragement to me to find that they do not act with too slavish reliance upon rules, nor so independently as to set at naught the teachings of our experience.

New State Examiners have been appointed in Rhode Island and Nebraska, both of whom are a credit to our medical corps. Dr. Kenyon of the former State had had a long experience, and I was

wholly and heartily glad at his appointment by the Supreme Regent. Dr. Carter of Nebraska had had less experience in our Order, but has applied himself diligently and studiously to a study of the proper management of his office. I regret to say, however, that the latter gentleman has just felt compelled to resign on account of being obliged to remove from the State.

SUBORDINATE EXAMINERS.

The frequency with which the rapid growth of the Order has required the appointment of new medical men as examiners has occasionally placed us at a disadvantage for a time at least, partly because it is not always possible to obtain the services of the man whom we should prefer, partly because the flattering reports we get regarding these new medical officers are not always sustained by the results of their work, and they turn out to be less competent than we thought we had good reason to expect, partly because in all occupations we find men who do not try to do their work with that spirit of thoroughness and minuteness which are so necessary in examining men's lives for insurance, and partly, as it sometimes appears, because the deputies in forming new Councils would rather have the assistance of a young, enthusiastic physician than an old, conservative one, and select, therefore, a doctor who will bend all his energies towards getting men in, and will not be too conscientious in investigating the conditions which may result in keeping them out.

In those, however, who have been long in our Order and who have a reputation to uphold as men of good care and proper judgment, a reputation dearer to them than their fees, we can place great reliance, and feel an intense satisfaction in knowing that when they cordially recommend a candidate as a good risk they are not misled by haste, deceived by carelessness, or imposed upon by fraud. The risk may possibly prove to be a poor one, but we know that the investigation was close and that all the appliances of scientific research were called into play in testing the man's real state.

For one I feel great pride in our medical examiners as a body and thank them sincerely for earnest purposes, skilful investigation and honest opinions.

THE POSITION OF THE MEDICAL EXAMINER-IN-CHIEF.

The Medical Examiner-in-Chief does not like to seem to urge again his own self aggrandizement, but is firmly of the opinion that the system of administration of the R. A. will be distinctly benefited

by having the medical department recognized officially in the Supreme Council, and the chief medical officer made a member (by virtue of his office) of that august body. In this way and in no other can the sixteen hundred medical officers of the Arcanum receive an official recognition and have an official representative in our ruling body. I trust that at the coming session the necessary steps will be taken to do a long-delayed act of justice to the medical department of the R. A.

CONCLUSION.

In ending this report permit me to say that it is in no merely formal or official way that I state how cordially and without exception I have been supported in doing the duties of my office by Supreme Regent Watts, nor how intelligently, from a medical point of view, he has favored the rigorous care and watchfulness by all the examiners, so necessary in accepting only the best men for the Order. Our medical men need to feel that they will be upheld if they do their duties fearlessly and with an earnest and honest purpose simply to make thorough examinations and to form judicious decisions; and that they need not deviate one iota from the paths of simple integrity and honest professional duty to win the favor of those above them or make themselves popular in their own neighborhoods. They have felt that in the hands of Supreme Regent Watts they could feel surest of approval by neglecting no duty and by manliness. I am confident that they all join with me in expressing our warmest thanks to him for his encouragement in all these matters.

My thanks are due, as they are on every returning year, to Brother Robson, the Supreme Secretary, for courtesies and attentions and a compliance with my requests for information, which assists me materially in the performance of my daily duties, not less than in the preparation of these reports.

The Committee on Finance of the Supreme Council are also gratefully thanked for their assistance in helping me to send to all the Medical Examiners my yearly statements and suggestions, and in meeting the necessary expenses of my office.

Respectfully submitted in V. M. C.,

JOEL SEAVERNS, M. D.,

Medical Examiner-in-Chief, R. A.

