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'Miner's Con in Joplin Zinc Mines

the insurance investigation of eleven years ago this Company came, not only unscathed but with the commendation that would be the pride of any man in any vocation of life? Hardly, because they built this great business to help men of my kind to come up from the ranks—at twenty years of age I was working for \$6 a week. They didn't grow from the top. They went from the bottom and grew up, and God alone knows the number of children they have kept out of orphan asylums, the number of women and men they have kept away from

the doors of charity organizations. To sum up I will just use a few words of poetry to explain to you what was the foundation, in my judgment, of the Metropolitan Life Insurance Company:

"They were manned by men with integrity,
With temperance no pleasure could seduce,
A meekness no trouble could arouse,
A patience neither insult nor loss could overwhelm,
An integrity no money could buy or interests change."

interested in a community health problem which definitely affected the mortality and morbidity of its Groups.

A memorandum which embodied the suggestion for a cooperative experiment reached the PRESIDENT. "Would the Metropolitan be willing to contribute an annual sum for a clinic in the Picher mining region to study silicosis, its effects and to formulate remedial measures?"

"Yes," was the reply, and the Metropolitan agreed to contribute an annual appropriation of \$8,000, provided the United States Bureau of Mines contributed \$8,000 and the local operators, \$16,000.

Company Works to Control "Miner's Con" in Joplin Zinc Mines

GO to any of the "hard-rock" mines of the world, in Canada, Australia or the United States, the South African Rand or the "big hill" in Butte, Mont., and watch thousands of miners going to the mines where gallows frames and mine houses, skeleton-like structures, stand over well-like shafts; watch them enter the cages which drop hundreds, sometimes thousands of feet underground, and follow them to the slopes and raises where they extract gold, lead, zinc or copper from the veins of ore that thread the earth.

Some of the miners walk slowly, hesitatingly, and once in a while they stop for a rest. These are the men whose lungs have been "dusted." They have "miner's con" or "silicosis" as the doctors call it, because of the silica in the dust. Some of these men, too, have tuberculosis as well.

The miners work in a dusty atmosphere, for it is hard to ventilate underground, and hard rock dust arises from blasting, traveling and boulder popping. Much of this dust is controlled by water, which is used in drilling and in wetting down muck piles.

Inhaling the tiny particles of silica dust injures the lungs, which, irritated and inflamed, become fibroid. A scar-like tissue develops which has none of the normal elasticity of the lung. Breathing is impaired, and as the disease attacks both lungs, there is a gradual lowering of vital power. Shortness of breath, coughing, loss of weight and weakness cut into a man's capacity of work when "miner's con" or silicosis attacks him.

"Miner's con" is not infectious, nor is it contagious. It carries a great menace, however, because the injured lung, together with lowered vitality in the whole body, afford an ideal condition for the development of tuberculosis. It is well known that men with dusted lungs are unusually susceptible to tuberculosis. When this happens, not only is the miner threatened with early death, or at least a more hopeless future, but he is a source of

danger to others, his fellow workers, his family and the community. This infection is a factor of prime importance to the health and hygiene of the community.

The hazards in hard rock mines are so great that when a worker wants insurance he pays extra for it: page 391 of the Metropolitan rate book tells the story—"Joplin, Mo. lead and zinc mines, sheet ground miners; special class B; no disability, no double indemnity."

Several years ago the operators in this particular section, which centers around Picher, Okla., and extends up to Joplin, Mo., made a study of Group insurance. One clause appealed to them particularly, considering the conditions they faced in the mining industry in the Joplin sector. Group insurance could be bought without a medical examination, regardless of age. Many operators bought Group insurance, conscious of the fact that Group policies gave the miners a necessity which cost so much under ordinary circumstances they couldn't buy as much protection as they needed.

Another thing that appealed to the Joplin operators was the effective work the Metropolitan had done along lines of health and sanitation. Many of the operators bought Metropolitan Group insurance, and about a year ago the Metropolitan initiated a special health service, a cooperative experiment similar in aim to other investigations made by the Company in Framingham and in Thetford Mines.

ABOUT a year ago the Policyholders Service Bureau learned the United States Bureau of Mines would be interested in expanding the Bureau of Mines clinic in Picher and in making a more intensive study of health conditions, so the United States Bureau of Mines, the Metropolitan, and the operators in the tri-State region, combined forces and enlarged the existing clinic. As many of the operating mines in the lead and zinc field are covered by Group policies, the Company was vitally

THE clinic was financed for a period of three years. It offers free medical examination to all the miners in the district. Its general purpose is to examine miners and diagnose their cases, and to carry on educational work tending to eliminate silicosis and tuberculosis.

The building which houses the clinic was built by the mine owners, and Dr. F. V. MERIWETHER, of the United States Public Health Service, assisted by a staff of Government physicians, is conducting it. On some days they examine eighty men, and they expect to examine 14,000 before their work is through. Two clerks interrogate the miners and fill in the information on an examination card. The miners go to the X-ray room where their chests are X-rayed by one of the best machines purchasable, operated by a skilled technician. Late in the afternoon Dr. MERIWETHER holds a conference with the other physicians, the X-ray films taken the day before are put on view and are read in conjunction with the man's history of clinical findings, and a final diagnosis determined. Each physician has a special field of interest in the investigations and is gathering data for his particular branch of research.

Assistant Medical Director LANZA, who was largely responsible for bringing the Metropolitan, the operators and the United States Bureau of Mines together in establishing the Picher Clinic, says that the cooperation of the operators and miners augurs well for the investigation. "The miners and their families are practically all of American stock. They are intelligent, independent and industrious. They are efficient and individually take out more rock than any other miners in the country. Many of them prosper, and it is a common saying in southwestern Missouri that every miner is a prospective operator. The wages are good.

"It is to the interest of the miners, of the operators and the Metropolitan, incidentally, since the Company has Group insurance on most of the miners in the region, to have a high degree of sanitation and good health in the region.

"Lack of funds have prevented making investigations of silicosis comparable to

MEMORANDUM

THE PRESIDENT:

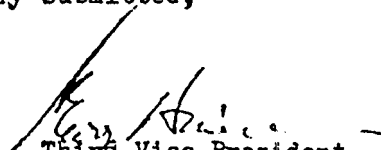
The attached memoranda relate to a project for studying and eliminating the prevalence of Tuberculosis among miners in zinc mines in the Joplin zinc field. You approved, in principle, the project on my memorandum to you of October 8.

We have further discussed the matter with the United States Bureau of Mines and have received from them, after this discussion, a draft of co-operative agreement between the Department of Commerce and the Metropolitan, which is the customary basis upon which the Department enters into projects of this character.

Dr. Wright's and Dr. Lanza's memorandum of January 18 attached, comprehensively covers this subject. The agreement and that memorandum requests an appropriation from the Metropolitan for this purpose of \$8,000 a year for three years. The direct and collateral results to be obtained from this undertaking, in my judgment, not only warrant the expenditure, but make it desirable. It also should prove financially profitable.

I, therefore, respectfully request your authorization to proceed in the matter and to execute the agreement, after submission to our General Counsel.

Respectfully submitted,


Third Vice-President.

January 20, 1927.

MEMORANDUM

TO: Mr. Brune, Chief Vice-President

FROM: Mr. A. J. Lanza, Chief of Mines

DATE: January 15, 1927.

SUBJECT: Conversation with Mr. A. J. Lanza, Chief of Mines, on January 15, 1927.

This memorandum is supplementary to that of September 23, 1926 regarding health conditions in the Joplin lead and zinc mining districts. The President indicated to you his willingness to consider a definite proposal for the maintenance, in cooperation with the Bureau of Mines, of a clinic in this region.

On December 10, 1926, Dr. R. K. Sayers, Chief Surgeon of the U.S. Bureau of Mines, visited this office and the question of cooperative activities in the Joplin district was thoroughly discussed between Dr. Sayers, Mr. Brune, Dr. Lanza and Dr. Wright. It was agreed that on his return to Washington, Dr. Sayers would have prepared a contract outlining terms on which cooperative work between the Metropolitan Life Insurance Company and the U.S. Bureau of Mines might be undertaken.

The occupational disease present with unusual intensity in the Joplin district is "Silicosis" or "Miners' Phthisis". It has been intensively studied in the past few years. The first investigation of silicosis in the United States was carried out by Dr. Lanza, then Chief Surgeon of the Bureau of Mines, in the Joplin district in 1915. Later Dr. Frederick Hoffman's book on "Mortality from Tuberculosis in the Dusty Trades", served to draw further attention to the general question of the dust hazard among industrial workers and its relationship to tuberculosis. Investigations, mostly of a preliminary nature, were carried on by the U.S. Bureau of Mines, the U.S. Public Health Service, Professor Winslow and a small group of assistants (U.S. Public Health Service) at Yale; and Dr. Pancoast, Dr. Linds and the Phipps Institute group in Philadelphia.

This investigative work has made increasingly apparent the importance of silica-laden dust as an industrial health hazard. Such dust not only produces true silicosis, which is itself disabling - but also, for reasons which are not yet entirely clear, greatly predisposes its victims to tuberculosis. The fact that deaths of miners are reported as due to tuberculosis has served to mask the importance of the underlying factors of silicosis as a predisposing cause of tuberculosis. Silicosis is found among hard rock (metal) miners, occasionally among coal miners, and also among pottery makers, cutlery makers, quarrymen, subway construction workers in New York City, and among the multitudinous occupations which involve grinding through the use of a sandstone or other grinding wheels. In the light of our experience in the Joplin district with both Life and Health claims, the importance of silicosis from an insurance standpoint is apparent. We insure all but one of the larger mining groups operating in this field, and insure other properties of this exception elsewhere. We have numerous Industrial and Ordinary policyholders who must incidentally bear the effects of this industrial situation.

Group Life. In September 1920 the first Group Life coverage was placed on miners in this territory. All told, 24 life contracts have been written, for the most part in 1925. Two groups have cancelled. At the end of 1926 there had been 22 policies issued, with a total of \$1,000,000 in coverage.

deficit was incurred on all but six small contracts, a total deficit of \$117,650, to which may be added \$508 paid in dividends to ten groups. The Actuarial Commission has estimated that the loss would have amounted to \$1,100 had the Groups been written upon the current rates (non-participating).

11 of the Groups are now paying a premium varying from standard plus \$1.00 to standard plus \$10.00. Should the previous experience continue, assuming no change in rates on Groups now in force, the estimated loss for 1927 is \$1,100.

The men insured are young: 37% of the 11 years exposed were at age 30 or less; 67% at age 40 or less; 87% at age 50 or less. The claim rate, ages 21 to 25, is 55% of the expected; at ages 26 to 35, 33% of the expected; at ages 36 to 40, 20% of the expected; and for all ages, 21% of the expected. It is almost axiomatic that these young miners die within ten years of their going underground.

Of the one hundred death or permanent total disability claims incurred, 52 (27 death, 25 P.T.D.) have been for tuberculosis (23) or other respiratory diseases. Fourteen have been for accidents, 9 of occupational origin, or a total of 61% all claims incurred attributable to working conditions.

Group Health 1. The experience under Group Health policies is scarcely less disastrous. Since August, 1924 there have been placed 21 Group Health contracts (2 have been cancelled) with a mean number of life years exposed (December 31, 1926 or date of cancellation) of 2,232; lives in force 1,455. The actual deficit at the end of 1926 was \$11,011 on an earned premium of \$35,591. Six Group Health contracts only showed a surplus. Dividends amounting to \$907 were paid to six Groups, including 4 of those showing profit.

The Actuaries estimate that upon the basis of the 1926 minimum rate the loss would have amounted to \$13,157. Almost all of the Groups are now upon a rate of from \$1.00 to \$1.75 per \$10 of weekly benefit, but even upon this basis the estimated loss for 1927, with present experience, amounts to \$7,164.

We have in a few years incurred a total loss of almost \$25,000. The rates have been, generally, advanced. There is in sight an annual deficit of over \$10,000 on less than 2,500 lives, with the only real hope of betterment lying in improvement of the health situation and in the institution and operation of proper mechanism for the control of health and permanent total disability claims.

The mining companies in the "Joplin Field" are eager to remedy the situation. They have organized the 11-State Lead and Zinc Producers' Association which has accomplished excellent results in the way of safety and underground sanitation. This Association employs a competent and well trained safety engineer who is in charge of the safety activities for the district and who has about 20 inspectors under him who visit the mines constantly and whose efforts are directed toward safety and dust control. With this phase of the industrial health situation coming under control, through the initiative and enterprise of the companies themselves, the cooperative project herein outlined becomes worth while.

One of the duties of the Bureau of Mines (Department of Commerce) is to investigate health conditions in the mining industry. For the past two years the Bureau of Mines has maintained a medical office in Picher under the direction of Dr. Sayers, with a physician, x-ray equipment and a clerk; the intent of the Bureau's work is investigative rather than remedial. Its activities consist of making physical examina-

tions of miners, including X-rays of the chest and in giving the miners advice based upon the results of the examination. Examination is voluntary on the part of the miners and due to the tact and energy of Dr. Morrinether, physician in charge, one or two of our Groups have brought practically 100% of their employees to be examined. Lack of means and of personnel have prevented the accumulated experience of this office, in the form of health records and X-ray plates, from being compiled.

The Federal Bureau of Mines would welcome the cooperation of the Metropolitan in an effort to control the critical situation in the Joplin field. It is proposed that the Metropolitan Life Insurance Company and the U.S. Bureau of Mines enter into a contract (to be locally renewable annually) to carry on a health project among miners centering around Picher, Oklahoma, for a term of three years. The purpose of this project is to improve health conditions in the Joplin district, by giving direct health service to the miners; and to study the various aspects of silicosis and tuberculosis so that we may crystallize our experience in definite form and make a contribution of undoubted value to the knowledge of tuberculosis and allied respiratory diseases, among industrial workers.

There would be a clinic which would make physical examinations of miners, including X-ray examinations. It is estimated that eventually between 12,000 and 15,000 men would be examined twice a year. Advice and help to the miners would be coordinated with the Metropolitan nursing service. Three definite results would be forthcoming:

1. Men with tuberculosis would be excluded from underground work and one of the prime sources of infection thus abated.
2. Men with dust affected lungs would be excluded from underground work and the chief contributing cause to tuberculosis thus eliminated.
3. New men would not be hired unless they have sound lungs, and the periodic examination would prevent them from becoming seriously affected. All of this would be supported by the continued improvement of underground working conditions.

The accumulated clinical experience and the results of investigative work would be available to the Metropolitan, and form the basis of reports to be issued by the Bureau of Mines in which the role of the Metropolitan would receive its due credit.

Physical examinations would be voluntary, but after about half the mining population is examined, and when it may seem desirable, effort will be made to enact laws providing for these examinations.

At present the office of the Bureau of Mines in Picher is in a small building which is also used by the two Metropolitan nurses. The Bureau will put this building in good shape and increase it to sufficient size so that it will be ample to carry on the work without further alteration, keeping in mind possible future expansion. Dr. Sayers proposes to add another physician to his staff and to hire the most competent X-ray technician that he can find. His minimum expenditure will approximate \$8,000 a year, but it is his purpose to supplement this with additional funds. The single item of X-ray films will involve ultimately an expenditure of \$10,000 to \$12,000. The Metropolitan would contribute an equal sum budgeted as follows:

Physician	\$8,000
Technical Assistant	1,800
Stenographer	1,200
Supplies	2,000
Total	\$13,000

It is probable that the mining companies in the Tri-State Zinc and Lead Association would also give financial support. The Association does not wish to participate in the management of the project; they prefer to be in the position of being able to state to their employees that the Metropolitan Life Insurance Company and the officials of the U.S. Government jointly advise them and their employers to do thus and so.

The State of Kansas has already requested that the Bureau of Mines prepare mining laws and regulations for that state. Dr. Sayers stated that the same sort of request will be forthcoming from the State of Oklahoma. This gives fairly definite assurance that at the termination of our activities they could be continued under official auspices.

Dr. Sayers and Dr. Lanza could visit Joplin early in February to determine what assistance might be expected from the mining companies. If such assistance is not available, the cooperative project could and should, we believe, nevertheless, go ahead. With the help of the Actuarial Division and the Statistical Divisions, records would be devised so as to make possible the collection of information considered desirable to meet insurance needs.

Our past losses under Group Life and Health contracts have been great, those under Ordinary and Industrial policies not determined but presumably great also. The prospective loss is large unless there be instituted sound measures to remedy responsible conditions. A most favorable plan of cooperation with the U.S. Bureau of Mines is presented, the cost to be \$8,000 annually for three years. This would be the most complete and far-reaching project in industrial hygiene ever undertaken in this country.

.....
Wade Wright, M.D.
Assistant Medical Director

.....
A. J. Lanza, M.D.
Assistant Medical Director

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fine work.
ask
11/11/27

* M E M O R A N D U M *

TO: Dr. Wright

FROM: Dr. Lanza

DATE: March 31, 1927.

SUBJECT: Progress of work at Tri-State Lead and Zinc District.

I was in the vicinity of Picher, Oklahoma from the 11th to the 21st of March, visiting various mine operators and endeavoring to secure their participation in our cooperative venture with the U. S. Bureau of Mines. The first four days Dr. R. R. Sayers, Chief Surgeon, U.S. Bureau of Mines, was with me and I was in constant contact with Dr. F. V. Merriwether, who is in charge of the Bureau of Mines clinic there, and with Mr. Ageton of the Tri-State Zinc and Lead Producers Association. The present mining field extends from Miami, Oklahoma, 10 miles south of Picher, Oklahoma, to Baxter Springs, Kansas, about 12 miles north, the greatest concentration being around Picher. *K*

After a preliminary visit to some of our Groups, a meeting was arranged with some of the larger operators. This meeting was held on March 15 at the office of the Tri-State Lead and Zinc Producers Association, and representatives of the following mines and local organizations were present:

The Cortez-King Brand Mining Company
Consolidated Lead and Zinc Company
Crystal Mineral Trust
Federal Mining and Smelting Company
Beck Mining Company
Vinegar Hill Zinc Company
Black Eagle Mining Company
Anna Beaver Mining Company
L. & C. Mining Company
Golden Rod Mining and Smelting Corp.
Eagle-Picher Lead Company
Commerce Mining Company
Rialto Mining Company
Tulsa Lead and Zinc Company
Ramage Mining Company
American Zinc Institute
Tri-State Lead and Zinc Producers Ass'n.

Both Dr. Sayers and myself addressed the meeting, making explanatory statements and answering questions. We asked for the cooperation of the mine operators. The response was unanimous and gratifying. After a general discussion, the chairman, Mr. Davis of the Vinegar Hill Zinc Company, nominated a committee to confer with Dr. Sayers and myself to perfect plans. This committee consisted of Mr. T. M. Mendelari, representing the

TO: Dr. Wright

SUBJECT: Tri-State Lead and Zinc District.

Consolidated and the Eagle-Picher interests; Mr. A. T. St. Clair, representing the Federal Mining and Smelting Company; Mr. H. C. Mills, representing the Golden Rod Company; Mr. J. A. Robinson, the Commerce Mining and Smelting Company; and Mr. S. H. Davis, the Vinegar Hill Zinc Company. To this committee was added Mr. Scott Thompson, a Miami attorney, who is the Acting Chief Justice of the Supreme Court of Oklahoma. All of the above committee represented Group policyholders, except Mr. Bendelari - (the Metropolitan, however, covers the Eagle-Picher properties at other places).

I travelled over the entire district interviewing the principal mine operators and explaining our plans. Among others, I interviewed Mr. Dike, representing the Interstate and Woodchuck Mines; Mr. Wallower, the head of the Golden Rod Company; Mr. Coleman, of the Commerce Company; Mr. Barton of the Kansas Exploration Company (St. Joseph Lead Company); Mr. Filius of the Anna Beaver Company; Mr. Childress of the Childress Lead and Zinc Company; Mr. Wolf of the New Chicago Company and Mr. Johnston of the American Zinc Company.

Every person we interviewed promised the support of his company and there was no question but that the fact that the Metropolitan was actively concerned in this venture helped to put it over. I was impressed with the general appreciation of the attitude of the Metropolitan, to which several of the managers of the larger companies referred in a very complimentary manner. The managers of the four or five largest companies stated that they would be glad to underwrite the whole business themselves if the smaller companies were unable to come in.

After several meetings of the committee of five, a general meeting was again held at which plans were presented and adopted. The operators decided to contribute a sum equal to that put up by the Bureau of Mines and the Metropolitan, so that their contribution would be \$18,000 a year, making available \$36,000 a year to carry on the work. This money is to be raised by assessing the companies on the basis of \$3 per man per year of the average annual payroll, provision being made for corrections and readjustments at the end of the year. Necessary legal documents were prepared by Mr. Scott Thompson, and the next move in order at the time when I left was to secure the signature of the various companies to an agreement with the Tri-State Lead and Zinc Producers Association which acts as the agent of the operators. The Tri-State Association will in turn make a contract with the Bureau of Mines similar to that now existing between the Bureau and the Metropolitan.

Work will immediately be started on the construction of suitable quarters to house the clinic, it being necessary to increase the size of the present quarters. Plans for this were drawn up by Dr. Sayers and myself. The clinical staff will eventually consist of the medical officer in charge, 4 assistant physicians, an X-ray technician, a laboratory assistant and two

TO: Dr. Wright

SUBJECT: Tri-State Lead and Zinc District.

clerks. It will take at least six weeks before the new quarters are completed and the personnel will be gradually increased as circumstances may require.

In the meantime the various companies will sign their agreement. At the last meeting of the operators, managers representing a total of 6,400 employees definitely stated that they would come into this project on the basis of \$3 per man per year. The committee itself thought it best to raise the per capita assessment from \$2 to \$3 so that they would be certain not to have a deficit and the agreement therefore provides for pro rata return of surplus funds at the end of each year.

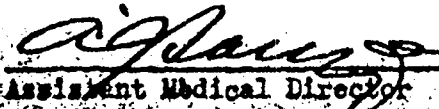
Comments

I visited some of the representative mines of the district and find that underground working conditions are a great deal better than they used to be. Wet drilling is now the rule, and constant attention is given to allay injurious rock dust and to the promotion of safety. The Tri-State Producers Association has a very competent safety engineer and has about 20 men in the various mines whose duty it is to constantly check dust conditions. The fact that many of the mines in this district are being gradually consolidated under 4 or 5 large companies tends to promote good working conditions and increased attention to ventilation and sanitation. A movement is also on foot to provide sanitorium facilities.

Dr. Merriwether has made about 3,000 examinations to date, and is experienced in this type of work. He informed me, confidentially, that he had recently examined the entire personnel of two mines belonging to one of our groups, totalling 800 men and found 22% tuberculous and 58% // with silicosis.

I expect to visit Ficher from time to time so as to keep in active touch with the work.

The two Metropolitan nurses in Ficher are doing very good work and are very well thought of by the mine operators. They will continue to have their office in the same building with the clinic.


Assistant Medical Director