September 29, 1933

Dr. A. P. Cole
Berkshire Building
Elm Street
Cincinnati, Ohio

Dear Dr. Cole:

At the request of the Ohio Industrial Commission I have recently examined your patient Mr. Chris Schwartz in relation to the background of his disability. Having come to the conclusion that his original attack of lead intoxication is probably responsible for his present condition, and having so reported to the Commission, I have thought it well to let you know my findings for such use as you may wish to make of them.

Analysis of the blood, urine and faeces showed that their lead content is at present well within the limits for normal persons. The findings were as follows: Blood 0.03 mg. Pb per 100 cc., urine 0.07 mg.Pb per liter, faeces 0.41 mg.found, equivalent to 0.06 mg. per gram of ash. These results indicate, as would be expected after more than five years, that Mr. Schwartz no longer has abnormal amounts of lead in his body.

He has a slight anemia (4 million RBC) and urinary findings indicative of a progressive degeneration or sclerotic kidney process (numerous casts of all types).

As to the condition of his hands and particularly his legs, he has, I believe, either a partial and permanent injury to the peripheral nerves, with changes in sensation, and vasomotor paralysis, or a lateral sclerosis of spotty character in the spinal cord. In either case it is impossible to rule out the effects of lead, and since he has had ample time to recover as fully as is possible, further improvement of his condition cannot be expected to take place. X-Ray examination of his hands and feet shows that there are no arthritic changes in the bones and joints.

I have concluded therefore that Mr. Schwartz has a cdrtain degree of permanent disability, and that it is due in all likelihood to the residual effects of a lead intoxication of which there are now no other evidences.

Very truly yours,

Our copy

Claim No. O.D. 4800 September 23, 1933
Name: Chris. H. Schwartz

Address: 1640 Jonathan Avenue
Cincinnati, Ohio

## Relevant History

### Present Complaints

Continuous pain and swelling in legs from knees down, and in hands particularly across knuckles, stiffness of joints especially of legs, weakness, inability to get around rapidly, incapacitation for work, nycturia, loss of appetite, tendency to insomnia.

### Occupational

Outside and inside painting, mostly inside, for past 25 years using lead paints the greater part of time. Little or no exposure to benzol.

### Family History

Mother died of "lung fever".

### Onset

Began with pains (aching) in legs up to knees almost 6 years ago. Hands normal at first. Later developed weakness of extensors of hands and feet, with partial recovery after 3 months. No loss of appetite, no diarrhea, no colic, slight constipation, loss of 15 to 20 lbs. Slept poorly for a time, and was disturbed by dreams.

### Previous Illness

Denied. Generally good health until onset.

### Improvement

Improved rapidly for a time. Little change during past year or two.

### Comment

Patient is apparently truthful. Is quite cooperative. Still hopeful of recovery.

## Positive Physical Findings

### Appearance

Aged and sickly man (age 62) with well developed senility of skin and body, but with normal mental reactivity. Skin has somewhat cachectic appearance. The hands are puffy and mottled from the wrists downward, and the legs are in a more advanced but similar condition from the knees down. The telangiectatic and varicose appearance of the lower legs contrasts strangely with the essentially normal appearance of the upper leg. The chest is asymetrical posteriorally due to over development of right latissimus.

Sensation in the lower legs and feet is greatly impaired, except for pain, which is considerably intensified. Ordinary tactil sensibility is greatly diminished, tactile discrimination is very po and thermal sensibility e present is much diminished. Painful stimuli produce extravagan reflex activities, and undue sensations of pain. Patellar respons can be elicited with great difficulty an irregularly. Achilles res nse very slight but present.

General Central Nervous Syst m Reaction.

The gait is halting and at first suggests ataxia, but is nchanged by walking with ey s clos d and is apparently due largely tiffness. There e slight inaccu acies in coordination in walking fth closed eyes, d in performing the usual tests, but there is ap parently no true omotor ataxia. Romberg sign is present.

Discussion of Find gs

One's first impression of this pat ent is that he has tabes dorsalis. However, the absence of the characteristic eye findings, the presence of a slight patellar re ponse he lack of bladder sympt together with the absence of true a axia d to the conclusion that either the luetic process must have be ested before it reached usual picture, or that some other condition must account for his ner lesions. Indeed there is so little evidence of localized spinal cor lesions that one is compelled to recognize that the symptoms might b explained largely by damage to peripheral nerves. The presence of absence of actual arthritis is also important. The responsibility f the present disability therefore would appear to be covered by the following possibilities or combinations of them; arrested spinal cor syphilis, lateral sclerosis, residual injury arising from peripheral neuritis, spinal cord changes due to anemia, arthritis. Laboratory procedures are required for differential diagnosis.

KE 0065951

Claim No. C. D. 4800

Eyes, Ears, Nose, Throat.

The pupils react sluggishly especially to accomodation. Vision greatly impaired for near objects, audition is diminished on the left because of impacted cerumen. There is slight congestion and edema of the nasal and pharyngeal mucosa (cold). Teeth are all missing. The anterior cervical glands a palpable and hard, but no tender.

Extremities.

The hands are stiff, and painful when strongly contracted. There is edema of the soft tissues at the knuckles, which interferes with maximal flexion. There is slight diminution of sensation simil o that described below for the legs and feet. The impairment is le ronounced in the hands.

The lower legs are ttled, congested, cyanotic, swollen an cold as compared to other tissues. The superficial veins are disten and tortuous, but the color change is largely capillary in origin. The pulse is distinct and apparently normal in the dorsal artery of foot. The joints are prominent and movements of the feet, and more especially of the toes, are painful and greatly limited.

The microscopic findings in the blood were as follows: R.B.C. 4,070,000, Hb. 11 mgs., Stippled erythrocytes 54 per 50 fiel W.B.C. 5,900 with 72.5% Polys., 7% band forms, 5% Eosinophiles, 0.5 Basophiles, 12% lymphocytes and 3% Monos.

There is no basis for a conclusion that the nervous lesion are due to anemia. The slight anemia has none of the characteristi of any specific clinical type. The stippling here has no specific diagnostic significance in view of the long interval since lead ex It is probable an expression of bone marrow changes in the legs wh the blood supply is abnormal.

The urine is alkaline to Methyl Red, faintly and to litmus Albumin and sugar are absent.

Microscopically numerous hyaline and granular casts, occas pus cells and erythrocytes are found in the uncentrifugalized sampl

Further Discussion.

The moderate secondary anemia may well be associated with the presence of general degenerative processes such as are occurri obviously in the kidneys and in the g ral muscul ture. They are remarkable in a man of 62 years of ag The sharp y localized dis of the hands and legs is most logical ined in the absence syphilis or localized circulatory dis due o residual effe peripheral neuritis, possibly associa som degree of lator cord injury. With the history it may be reasonably assumed that l absorption and intoxication provided the background of the nervous lesions. In the opinion of this examiner, this man's present cond

Claim No. O. D. 4800

Laborat Findings

X-Ray examination of the bony structures of the hand and feet show that no bone or joint lesions are present, but only soft structures are involved.

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| | b | orman test and the Meineke turbi |
| were ne | a | nal fluid showed no incr as gl |
| ineress | s | the gold curve was in t |
| spinal | W | was negative. (A com un |
| physici | t | t revealed that in the |
| Wassorm | e | ago he had been given |
| treatme | h | mprovement whatever). |
| be rule | o | ture. |

It would not be expected that lead would be excreted in abnormal amounts after years of freedom from exposur . ver analyses were carried out in order to make sure of this t. The findings were as follows: Blood - 0.03 mg.Pb per 100 cc. ine - 0 gs. per liter; Faeces 4/ mg.p sample, equivalent to 0 gs. per gram of ash. Th results, a expected are within normal limits. They do not in a way exclude he diagnosis of lead poiso ng, bec of the long interval s nce exposure.

Claim No. O.D. 4800

is largely attributable to the irreversible nerve damage brought about by an episode of lead intoxication. The lead absorbed is now largely or wholly dissipated, and he shows only the normal lead output, but the injury is permanent and improvement as to the disability of the hands and feet is not to be expected.

Robert A. Kehoe, M.D.