



# Problems of Operating Men

Edited by  
James T. Beard



## Zinc Chloride as a Wood Preservative

Claim of Little Resistance to Solvents Yet to Be Proven—  
Numerous References to Results of Zinc Treatment—Corrosive  
Effect on Iron Disputed—Manufacture of Zinc a Great Industry

**MY** ATTENTION was recently called to an interesting article that appeared in *Coal Age*, Nov. 17, p. 793, regarding the use of different preservatives to increase the strength and life of timber, besides rendering it more resistant to fire.

Of special interest was that portion of the last paragraph on page 793, which reads as follows: "It (zinc chloride) does not resist the action of solvents and is decomposed in the presence of lime in the soil. It can be used only in places that are permanently dry."

Allow me to state that, in my opinion, the question of zinc chloride offering but slight resistance to the action of moisture and water is, as yet, wholly a matter of conjecture, as the fact has not been definitely proven. Indeed, a paper prepared by C. H. Teesdale and S. W. Allen, appearing on page 222 of the 1919 Transactions of the American Wood Preservers' Association, describes some tests that prove the contrary of such claim.

Again, we find, in the 1916 Transactions, page 181, that the Committee on Specifications, while suggesting zinc chloride treatment for "arid and semi-arid regions" and deprecating the same "in situations where the treated timber is in permanent or intimate contact with either stagnant or flowing water," adds, "since there are conflicting data regarding the leaching of zinc chloride from timber, and since reliable statistics regarding its value in moist climates are not available, we would strongly recommend that definite service tests be made, by the association, in the Southern and Eastern States to determine the actual life of zinc-treated materials in humid conditions."

### SENTIMENT VEERS TO ZINC TREATMENT

More recently, wood-preserving engineers have been slowly swinging around to the opinion that zinc-treated ties should give as good service in wet climates as creosoted ties. Reliable information in this regard, however, will not be available for from three to five years longer.

The paragraph next following the one to which I have referred reads: "Pine ties impregnated with zinc chloride lost from 80 to 85 per cent of the original salt, three years after im-

pregnation; and beech ties, under the same treatment, lost from 90 to 95 per cent."

In my search of literature on this subject, I have not been able to find any reference to such large losses. On the other hand, on page 75 of the 1915 Transactions of the Wood Preservers' Association, there appears a description of tests made by F. J. Angier, under most rigid conditions. It is there stated that he only succeeded in leaching out a maximum of 30 per cent of the original zinc chloride, from the timbers tested.

On pages 77, 78 and 79 of the same Transactions, will be found statements confuting the notions so largely prevailing, in regard to the alleged corrosive effect of zinc chloride on iron. In addition to what is said in those references, we can state, as manufacturers of zinc chloride and accustomed to shipping this solution in tank cars and iron drums, that it is our experience that the only corrosive action occurs when the solution is slightly acid

or, in other words, contains minute quantities of zinc chlorate. Solution prepared from fused zinc chloride never contains any chlorate.

Regarding this point, the Forest Products Laboratory remarks: "The consensus of opinion, among those who claim experience, seems to be that if the zinc ties are properly seasoned before being placed on the track, the corrosion is of no appreciable consequence."

### VEGETABLE FIBER UNINJURED

In reference to the damage to vegetable fiber caused by zinc chloride, Dr. H. B. Luther, Massachusetts Institute of Technology, has proven that specimens stored at ordinary temperatures "show no appreciable difference in strength, between treated and untreated timbers."

In view of this and other testimony, I feel that the observations made in the article to which I have referred, are of undue breadth. As a representative of an industry that provides 35,000,000 lb. of zinc chloride, per annum, to the wood-preserving industry, I regard it as a matter of fairness that these statements should be corrected or at least qualified.

FRANK G. BREYER,

Chief of Research Division,  
The New Jersey Zinc Co.

Palmerton, Pa.

## Slab Mining in Room-and-Pillar Work

Greater Efficiency in Mining and Loading Coal from a  
Continuous Face—Better Facilities for Ventilating, Haulage  
and Concentration of Work—Cost of Timber Increased

**A**TENTION is again drawn to the need of providing a greater length of coal face where coal loaders are employed, in the description of the American system of mining given by M. Martin in *Coal Age*, Oct. 13, p. 589.

The system described by Mr. Martin, however, is essentially the same as that formerly described by Carl Scholz in *Coal Age*, Vol. 19, p. 261. Both of these systems come under the general head of slab mining.

Briefly described, they consist in driving pairs of entries across a block of coal between two pairs of cross-headings and separated by a solid pillar of coal. In the American system described by Mr. Martin these pillars have a thickness of 50 yds. The distance between the cross-headings is 500 ft. This leaving a 50-ft. pillar for the protection of the heading gives a coal face 400 ft. in length.

In general, it can be remarked that

this system of working out the coal by slabbing presents features that promise greater efficiency both in the mining and the loading of the coal. A mining machine is used to undercut the coal and this is followed by a coal loader capable of loading 150 tons of coal per day, in a 6-ft. bed. Certain types of these loaders are designed to work in seams less than 30 in. in thickness.

Without a doubt, as long as this method could be maintained, good results would be accomplished in ventilation, haulage and concentration of work. In working out a width of 75 ft. on each side of a pair of entries, as in this case, where the coal pillars are 150 ft. wide, it would seem that the cost of timber would be greatly increased. As each cut is made, the track is moved forward to be in readiness for the following cut.

In a previous letter appearing in *Coal Age*, Aug. 25, p. 301, I have offered a