of decaying wood and some is light enough to float on water. A loss of 36 per cent. of the mine wet weight and considerable shrinkage in volume was found after drying a sample on the water bath. Especially when wet it readily stains the hands, this possibly giving rise to the name.

The soot is found in elongated, flattened to cylindrical masses, not limited to any portion but most frequently found in the upper part of the coal. The shape of the inclusions suggested vegetation that had resisted alteration, but the lack of contact markings or of definite structure discouraged such a conclusion.

While sometimes in contact with bright coal, the inclusions are usually surrounded with a bony or pyritiferous material. The study so far made suggests the contained pyrite (and surrounding pyrite when present) as responsible for the soot. As particles of unaltered coal occur mingled with pyritic matter in the soft organic mass, it seems probable that the original coal has been altered to this condition by the presence of the pyrite and circulating ground water, which have destroyed the structure and changed the physical characters of the coal. The change might be brought about in part by physical shattering of the coal as the included pyrite was altered, as well as by chemical action. In several ways the soot behaves like the adjacent unaltered coal, including its manner of coking under the blowpipe flame. Unlike the action on coal, the action of nitric acid on either the raw soot or on the washed gritty residue is strikingly vigorous. This is believed to be due to either the finely divided or disintegrated state of the pyrite.

Samples were shown to Mr. David Reger of the State Survey, who states that he has noted occurrences of similar nature in several coals found in West Virginia, but has made no special study of them. Dr. I. C. White, head of the survey, kindly offered the services of the survey chemist, Mr. B. B. Kaplan, in making an analysis. The report of this analysis, just received, tends to confirm the writer's conclusions. The following results were obtained for the "darker" specimen "which analyzes as though it were a crushed bituminous coal":

Moisture	17.15 per cent.
Volatile matter	39.74 per cent.
Fixed carbon	30.31 per cent.
Ash	12.80 per cent.

No quantitative analysis for sulfur or iron was made, but attention was called to the probably high content of each. "The brown variety behaves more like a crushed coal that has been exposed." This statement would suggest that the disintegrating chemical action had proceeded farther in the case of the lighter color.

The readiness with which most of the pyritic matter settled out of the mass when washed with water may imply that it is foreign and probably feasible to reduce in unaltered coal by modern crushing and washing methods when its content becomes too high.

The amount of "soot" in this mine is too small to have any economic significance, but the occurrence seems sufficiently interesting to warrant some discussion as to its presence in other localities.

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WEAK LEGS IN CHICKENS

DURING the past few years a number of investigators have attempted to use young chicks as experimental animals in the study of nutrition problems. Some have reported favorable results while others have been unable to grow normal chicks in confinement even when feeds were used that had proved to be adequate for rats and other experimental animals. The chicks usually developed a condition known as "weak legs" which is characterized primarily by improper bone development and the failure to develop secondary sexual characteristics.

Experiments which we are now conducting show this condition to be identical with rickets in mammals. The lesions are the same and the conditions under which it is produced are the same as those which cause rickets.

These experiments show that young chicks receiving a standard scratch feed and mash supplemented with sprouted oats and fresh buttermilk will develop rickets (weak legs) if they are kept in a room where the light is filtered through glass, while chickens receiving the same treatment but exposed to direct sunlight a few hours each day will develop normally. Ultraviolet light was found to have the same beneficial effect as sunlight. It was also found that cod liver oil, which has been shown to contain a substance which will prevent rickets in mammals, would prevent this condition in chickens.

A complete report of this experimental work will appear in *Poultry Science* in the near future.

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NITROGEN LOSSES FROM COMPOSTS

THE loss of nitrogen from compost and manure heaps is the avenue for waste of the greater part of this element in feeds. Even under most careful handling this waste is not readily controlled, because while mechanical safeguards against leaching, etc., may be employed, there still remains the considerable loss through the atmosphere due to biological agencies.

The value of nitrogen fertilizers in fixing the or-