

tirely luminous. The phosphorescence, which is under control, has the bright greenish color of the glow-worm's light, and when in glow its secretion is luminous, making a luminous trail. At night stamping on the ground or slight pressure causes the creatures to come to the surface and light up.

Tests of molybdenum steel by a St. Petersburg chemist show that it resembles tungsten steel, but is made softer by annealing and harder by high heating. It stands fire and tempering better, showing no fissures where tungsten steel very often does.

A few years ago chemical analysis was relied on to determine the fitness of water for drinking, and sufficient dilution of poisonous matter was regarded as making it harmless. This is changed. The problem is now looked upon as a biological rather than a chemical one, and the purity of the water is judged by the character of the organisms it may contain, the fact being recognized that even the minutest possible quantity of foreign matter—if it be a disease germ—may be sufficient to start an epidemic. The danger consists not in the quantity of such organisms but in their power of growth under certain conditions. Typhoid fever, cholera and certain forms of dysentery are the chief diseases whose infection it is generally admitted can live in water, but Dr. M. A. Veeder, of Troy, N. Y., states that during the last ten years he has maintained that the term malaria, meaning bad air, is a misnomer, and that diseases of this class are very largely, if not exclusively, conveyed in water. Admitting this, drinking water brings two classes of danger. Water taken from near human habitations may be contaminated with typhoid and diarrhoea from excreta, and that from virgin soil and undrained districts may bear the germs of malaria. Shallow wells in alluvial soil also may yield malarial infection. In many localities safe water can only be had by purification, and for this an intermittent filtration—taking advantage of a recently discovered antagonism between what are known as nitrifying organisms and disease germs—may be better than sand filtration alone, the water being allowed to stand in the filter until introduced nitrifying organisms have had time to destroy their foes. For home purification of water, boiling is most convenient. Dr. Veeder's plan is to allow the boiled water to deposit its sediment in a stone jar, then to transfer it to air-tight glass fruit jars, and store in a cool cellar or an ice chest. Such water is clear and palatable, and keeps long.

A communication to the Paris Academy of Medicine states that not less than 95 per cent of the native children of Peking are affected by threadworms. Other small intestinal parasites are equally common in adults, as a result of the use of polluted drinking water and of raw vegetables from sewage irrigated fields. The European residents, who use comparatively pure water and cooked vegetables, being almost entirely unaffected. Tapeworm, on the other hand, is found in 20 per cent of the Europeans, while it is very rare in the Chinese.

Movable bubbles are often seen in quartz, and other crystals, but the appearance and disappearance of inclusions of this kind is a bit of nature's magic not often observed. An interesting experience with a cerulean blue sapphire is given by Mr. W. S. Beekman in *The Microscope*. This was a beautiful gem of nine carats, but it had a flaw, and one morning he was astonished to see a moving bubble in this flaw as he picked up the stone. He hastened away to show this phenomenon to a friend. He could find no bubble for his friend, and at home he

sought it again in vain, then tried to reason that it had in some way worked out of the stone. The search was resumed in the evening. Turning on the light, there again was the bubble, but it was falling to pieces, and in a few moments had disappeared! Its vanishing was a trick of temperature. Between 85 and 86 degrees Fahr.—which is the critical point of carbonic acid when under a pressure of 90 atmospheres—the bubble changed from a liquid to an invisible gas.

The firing of a candle through a door or pine plank will no longer excite our wonder. A more striking illustration of the penetrative power of light matter at high velocity has been furnished by Capt. Cooper Key, R. A., as a result of experiments on firing gas in mines. For a bore-hole was employed a special gun, which was charged with high explosive, tamped by pressed cylinders of raw dry clay three inches long and about two inches in diameter. The blasting acted in various mixtures of air, coal-dust, gas, etc., and to stop the course of the plug and break it into dust a cast-iron target plate, one inch thick, was placed 25 feet in front, at an angle of 45 degrees. After three or four shots the inch iron plate was penetrated by the clay plug, weighing  $7\frac{1}{2}$  ounces.

The beaver appears to be gaining slightly in Norway, where it was once very numerous, as Prof. Collett estimates the present number at one hundred, while there were about sixty in 1880. A few specimens of the European species are still found in some districts on the Rhone, the Elbe, and the Danube.

The cause of the deterioration of paper is to be investigated by a committee of the London Society of Arts. Much of the paper now made cannot be expected to endure many years.

### PRIESTHOOD MEETING

The monthly Priesthood meeting of the Salt Lake Stake was held in the Assembly Hall Saturday, Elder Angus M. Cannon, president of the Stake, and counselors, presiding. Singing Prayer by Patriarch Wm. H. Walker. Singing.

The roll was called and responded to by one High Councilor, five Patriarchs, Elder Elias Morris, president of the High Priests' quorum, fourteen presidents of Seventies, and seven home missionaries. All the wards of the Stake were properly represented excepting the Second and Thirteenth city wards, and Farmers and Granger of the country.

The First, Second, Eighth, Tenth, Eleventh, Thirteenth, Fourteenth, Sixteenth, Seventeenth, Eighteenth, Nineteenth, Twentieth, Twenty-fourth and Twenty-fifth quorums of Elders were represented by their presiding officers. Members of the Lesser Priesthood were in attendance from the Fourth, Ninth, Thirteenth, Fourteenth, Nineteenth and Twenty-first city wards, and Sugar House, Mill Creek, Big Cottonwood, South Cottonwood, Granite and Crescent wards of the country.

The Sabbath schools of the Stake were represented by Superintendent Thomas C. Griggs, and the Young Men's Mutual Improvement association by Superintendent Richard R. Lyman.

Upon the recommendation of their respective Bishops twenty-one young men received certificates authorizing their ordination to the office of Elder, each whom promised to honor and magnify his office and calling.

Elder George Goddard recommended congregational singing.

Elder Charles W. Penrose endorsed the remarks of the previous speaker and said Bishops should not disturb

the Sacrament by giving out notices during the passing of the same, but rather just previous to administration. He suggested that the time be economized in passing the Sacrament, by the assistance of the Deacons. He was pleased to see so many young men recommended to be ordained Elders but cautioned the Bishops to use great discretion in giving recommends, as the responsibility rests upon them. Young men sent on missions should be good men; men who can truly represent Zion.

Elder Elias Morris urged a fuller attendance of High Priests at their monthly meetings and asked Bishops to assist in bringing about the desired result.

Elder Joseph E. Taylor suggested that Bishops divide the honor of administering the Sacrament, blessing of children, etc., with those holding the proper authority in their wards. Permission had been given the joint M. I. A. to hold their sessions in the evenings of the Fast days. Sacrament should therefore be administered in the afternoon of that day. Members should not be recommended to the house of the Lord unless they were tithe payers.

Elder John Wells explained the object of the Industrial Bureau to furnish work to the unemployed and made some suggestions for systematic work to be made in this Stake.

Elder Angus M. Cannon announced that the Stake conference would be held on the 11th of December next. He felt pleased to hear the remarks pertaining to the object of the Industrial Bureau. He said that blessings awaited those who labored for the welfare of their fellowman.

The meeting adjourned to the second Saturday in December (11th prox.) Singing, "Lord dismiss us." Benediction by Bishop Samuel A. Woolley.

### AMONG THE TENNESSEE MOUNTAINS

[Frank Chambers in the Independent.]

The strange and queer are typical of the Tennessee mountains. It is the country of the one-roomed log cabin. Archeologists are continually digging up new and fearful discoveries from the bowels of the mountains. It was once the home of the cliff-dwellers, and the clay eaters thrive there now. Much of the money given by Southern churches for home missions goes to the Tennessee mountains. A Baptist missionary made the startling statement that there were a half million people living in the Appalachian belt who had no Bibles. Some of them never saw a Bible.

The home mission societies have established four schools within a short time. These are well equipped central schools, designed as foci for denominational colleges. Small day schools, taught in log cabins, are located in remote and isolated valleys and coves of the mountains. In county after county, extending over great stretches of country, the one-room cabin home, lighted by the open door, where men, women and children cook, eat and sleep, is the rule; and such living does not produce the best class of citizens.

Six thousand of the children of the southern Highlanders are in school, while over 400,000 of them have no chance of securing an education. There are 2,600,000 southern Highlanders in the mountains of Tennessee, North Carolina, Kentucky, Georgia and Virginia. They occupy 194 counties. Between 1730 and 1750, 240,000 people came from Ulster county, Ireland, to the Carolina shores. They formed the first republican government in America in 1769, calling it the "Wautanga association." Today the Highlanders are