

methods and ordinary results will not do, for we are to enter into competition with the most enlightened orchardists from the best fruit regions in America. This is a matter that should interest not only the farmers, but also every business man and every woman who is jealous of the fair name of Utah. There are many persons living in the cities who may, with little effort, produce fruit of surpassing excellence, fit for a place in the Utah exhibit. None will be barred from the competition, and each exhibition will be given full credit in the display.

It is probable that the exposition commissioners for Utah will very soon make known some systematic plan for collecting, naming and shipping the fruits intended for exhibition. In the meantime, the State board of horticulture will gladly confer with any who may desire suggestions regarding cultural methods calculated to produce the best results.

Let the citizens of Utah but give this matter the attention it deserves, and the verdict of Omaha will substantiate the oft-repeated assertion, "Utah fruit is the best in the world."

J. A. WRIGHT,

Secretary Utah State Board of Horticulture.

Messrs. Thomas Judd, St. George, and C. H. Blomsterberg, Provo, will gladly assist any persons within their districts.

#### SCIENTIFIC MISCELLANY.

Aluminum is a source of stored energy whose use, as described by Herr Goldschmidt to the German Electrochemical society, has given astonishing results. When mixed in a sand-lined wooden bucket with an oxygen compound, such as iron oxide, the aluminum can be ignited with a match, after which it burns quietly, giving forth an intense heat, which may reach 3,000 degrees C. This supplies an economical furnace for brazing or hard soldering. It can be used also for welding, for producing pure wrought iron, for making a variety of alloys, and for obtaining certain pure metals free from carbon that have been hitherto almost impossible to produce. A mass of metallic chromium weighing 55 pounds has been obtained in this way. The slag is of interest, being artificial corundum of extraordinary hardness, and containing minute artificial rubies.

The efficacy of harmless preventive inoculation as a means of stopping the spread of diphtheria has been satisfactorily tested by Dr. Karman in a Hungarian village. In the previous five months nearly 20 per cent of the villagers had been attacked and eight had died, six not having been subjected to serum treatment. Among the 114 children on whom preventive inoculation was tried there was, during the next two months, no case of diphtheria, although the epidemic continued in surrounding villages.

The idea that pepsin aids digestion is pronounced by Dr. Kellogg a delusion. Indigestion is attended by a lack of gastric juice and not of pepsin, and the continued use of the latter tends to unfit the stomach for making it. An English physiologist found that a guinea pig given pepsin gained for a few weeks then lost rapidly.

The rate at which the world is being transformed by science is hard to realize. A French writer finds that, if a man should now awaken from a trance that began at the close of the Paris exposition of 1889, we should have to explain to him these sensa-

tional discoveries and advances in mechanics and physics alone: 1—The bicycle, which is revolutionizing our habits, and which existed nine years ago only in rare and crude specimens. 2—The horseless carriage, moved by petroleum or electricity, with perhaps an even greater future than the bicycle. 3—The electric railways, which in the next century will modify the working of the great trunk lines. 4—Polyphase currents enabling us to transmit and distribute natural motor forces at great distances. 5—The Laval steam turbine, a practical means of using steam at high pressure. 6—The interior-combustion motor of M. Diesel, the most economical means known of converting heat into work. 7—Calcium carbide, giving acetylene, one of the illuminants of the next century. 8—The cinematograph, with whose wonders we have been recently saturated. 9—The Roentgen rays, which are revolutionizing the healing art. 10—Liquid air for industrial purposes. 11—Color photography. 12—Wireless telegraphy, a process full of promise. 13—Cold lights, obtained by luminescence of rarefied gasses traversed by the electric current. 14—High-frequency currents, with which Tesla and D'Arsonval have made such marvelous experiments.

Liquid hydrogen, now producible in any quantity, is found by Dewar to have a boiling point of about 240 degrees below zero C, and the unexpected density of about six-tenths that of water.

The soft, flexible rice paper of the Japanese has been recommended for such purposes as the water and ice bags of the sick-room, the claim being that this material supplies a satisfactory substitute for rubber at a sixth of the cost. Some air cushions exhibited to the Berlin Society of Internal Medicine by Prof. Jacobsohn were capable of supporting a permanent weight of over 300 pounds, while being air-tight, flexible, very light, and remarkably durable. They were made of several layers of the paper, joined by resin, with an outside finish of Japanese lacquer.

Holiday scientific excursions are being introduced into Russian schools. This summer, for instance, fifty pupils of the Ekaterinodar gymnasium will make a mountain trip of fifty days, collecting natural history specimens and ethnographical data, taking photographs, sketching, and getting the physical benefits of life in the pine forests of the Caucasus.

An extraordinary case is reported by a French medical man named Donilot. A man who had lost his right eye some years before, while still a child, fell from a cherry tree, his face striking upon a sharp stick in such a way that the nose the cheek and the left eye, with the eyelids and the eyebrow, were horribly mutilated. The attendant surgeon believed the eyeball had been completely torn away, the patient, of course, being left sightless. A year afterward the man was surprised to notice that he could distinguish daylight and the colors of flowers through his nose, and his vision improved until he was able to see all objects below, though still insensible to light from above. A simple explanation is found. The blow, falling obliquely upon the eyeball, must have permitted the escape of the humors of the eye and pierced the orbit, but without injuring the membranes, particularly the retina. On healing, there must have remained in the bony case behind the

closed lids a small opening putting the eye cavity in communication with the nasal fossae, thus permitting the light to reach the retina through the nose. It is pointed out that this served as experimental proof of the theory comparing the retina to a dark-room screen, on which images of outside objects are formed, even without refracting lenses, when the light rays come through a very narrow opening.

A British estimate is that ten horse-power per ton of coal per week may be regularly obtained from the waste gas of a blast furnace, so that, if 10,000,000 tons of coal are used annually in English and Scotch blast furnaces, then 2,000,000 horse-power has been running to waste. A fourth of this supply would run England's cotton mills. A considerable beginning in utilizing the waste has been made, and it is found that no great outlay is necessary, the only cost being for gas engines, holders, scrubbers and pipes. The gas, which has too small heating power for steam boilers, is very suitable for gas engines.

A proposal to celebrate this year the 700th anniversary of the discovery of coal in Europe—a discovery claimed to have been made in 1198, near Liège, Belgium,—has brought out evidence from Dr. F. Buttgenbach that the first find was really made in 1113, in the basin of the river Worm, north of Aix-la-Chapelle.

#### A VISIT TO WASHAKIE.

On Monday, June 15th, the day following the close of the Malad Stake conference, President Lorenzo Snow, Elder Fred A. Mitchell and your correspondent attended a meeting at Washakie, the Indian settlement. It is situated about two miles south of West Portage, in Malad valley. The school house was scrupulously clean, and its seating capacity was completely occupied by the congregation, fully one-half of which was composed of Lamanites. The white people were non-residents, having come over, for the occasion, from West Portage, and included members of the choir of that place.

The Indians were fairly well dressed and had a tidy and decidedly cheerful appearance. The opening singing was done by their choir. While the music was far from classical, it was pleasant to the ear, and the choristers seemed delighted at having the honor of rendering it. The opening prayer was offered, in the Indian language, by a stalwart Lamanite. The remainder of the proceedings were conducted by pale face musicians and speakers. The occasion was novel and interesting to your correspondent, who has always entertained a sympathetic sentiment toward the Indian people and one of abhorrence for the numerous outrages which have been perpetrated upon that unfortunate race.

There are 250 Indians in Washakie, under the vigilant and fatherly watch-care of Bishop Moroni Ward. About one half of them have abandoned their wick-i-ups and dwell in houses. The principal reason why all are not living under shingle roofs, like the white man, is because about nine years since their sawmill was burned down, and thus their chief source for obtaining building materials was cut off.

Some of them still have recourse to hunting to enable them to procure the necessities of life, but the great bulk of their subsistence is derived from 1,500 acres of land, which is held by individual ownership. Only 300 acres of it is below the canal, and most of the farming is therefore done without irrigation. The products are mostly wheat, barley, lucern and potatoes, and the cereal yield ranges all the way from