Rural Economy.

AMONG THE BUTTER-TUBS.

At one of our up-town [New York] hotels, t fall, a gentleman sat placidly eating his ner, when a waiter suddenly approached d deposited before him a plate of butter. e gentleman's countenance underwent a id and astonishing change. He paused th suspended fork for a moment, then shed the plate from him with very evi- nt scorn, and said sternly, "I told you— BUTTER." The waiter retreated a little comfited, and a moment afterward said, our hearing, "I know where that gentle- n's from, *certain*." "Indeed! where is t?" we asked. "From Philadelphia," iter answered, emphatically; "because *they* er eat any butter here." "Never eat y butter here!" We pondered upon this gular fact in epicurean annals, in doubt ether to ascribe it to excessive frugality, excessively bad taste, either of which ght prevail to an unlimited extent in the ity of Penn.

Shortly afterward we found ourselves un- xpectedly in that same city, and early one sunny October morning we went to market. It was a new experience; we passed through it with doubt, with wonder, with incredulity. Never had there been such a going to mar- for us before! We entered spacious halls, h arched domes and fretted windows, of ltless architectural beauty and finish, and eat in all their arrangements as a lady's lor. There were rows of white marble nters, and spotlessly clean wooden stalls, ped with their tempting display of fruits vegetables. There were apples, fragrant mellow, as if they had ripened under a ical sky; hives of clear, sparkling honey; t jars of snow-white lard; sausages that Weller could eat without a pang (before terward;) wonderful clusters of grapes, rich golden cheeses. There were, too, s of ruddy-cheeked farmers, young and gentlemen in dress and deportment, re- sentatives of the industry and wealth of adjacent counties. There were even mers' wives and daughters, placid ma- ns and sober but beautiful maidens, clad Quaker garb. Verily, it was *almost* Ar- ia! But at last we reached the crowning y of that feast of good things. We saw s of wood absolutely spotless, bound with ps of brass absolutely dazzling, filled h little rolls of butter, cut to weigh a f or quarter pound, stamped with vari- pretty figures, and enclosed each in a nty little linen napkin. One of those ious little rolls we tasted. Our new ex- ience reached its climax. Was THAT ter? No! it was the essence of June rnings caught and imprisoned in glowing bules, the fragrance of clover fields ripen- into sweetness in the brooding sunshine, warm delicious flavor of new milk foam- in the overflowing bucket. Our eyes ed involuntarily, and we saw the low wn "spring-house," with the clear cool er flowing over its stone floor, and the ing pans filled with yellow wrinkled am, and dripping with moisture. Higher higher our fancies soared. We thought Ganymede. But the "beautiful boy" s not before us. In his stead was a sober aker gentleman, clad in gray, who would ve resented such an allusion as heathen- in a supreme degree; and yet—and yet O Jupiter! thy nectar rare has come wn to us moderns, and the fortunate chil- en of Penn spread it on their—daily bread. *N. Y. Independent.* J. E. S.

FARM LANDS CAPABLE OF ÆSTHETIC TREATMENT.

Judicious location of a farm-steading, with view to profit simply, will be always near e centre of the lands farmed: this is agree- le, moreover, to every landscape-ruling in e matter. The ricks, the chimney, the rn-roofs, the dove-cots, the door-yard, with skirting away of shrubbery and shade- es, if only order and neatness belong to em, as good economy would dictate, form charming nucleus for any stretch of fields. there be a stream whose power for me- anical purposes can be made available, conomy dictates a location of the farm ildings near to its banks: taste does the me. If there be a hill whose sheltering ope will offer a warm lea from the north- esters, a due regard for the comfort of la- orers and of beasts, to say nothing of early garden crops, will dictate the occupancy of such sheltered position by the group of farm uildings: taste will do the same. If such ope has its rocky fastness, incapable of llage, and of little value for pasture, conomy will suggest that it be allowed to velop its own wanton wild growth of for- t: a just landscape taste will suggest the me. If there be a broad stretch of meadow of marsh land, subject to occasional over- w, or by the necessity of its position not pable of thorough drainage, good farming ll demand that it be kept in grass: good ndscape gardening will also do the same. gain, such rolling hill-sides as belong to st farms of the East, and which by reason their declivity or impracticable nature are t readily subject to any course of tillage, ll be kept in pasture, and will have their tle modicum of shade.

The value of a sheltering belt of trees is t sufficiently appreciated as yet by prac- al farmers; but those who are not insensi- to the quick spring growth under the lee a northern garden-fence will one day learn t an evergreen belt along the northern e of their farms will show as decisive a n in their fields or their orcharding.

THE ENGLISH SPARROWS.

The New York *Evening Post* has a corres- ndent who writes:

Many thanks to the Commissioners of Central Park for introducing this useful bird into our city four years ago. The sparrows are daily fed and well provided for, and they have greatly increased in number. They are also fed daily in four other parks up town, where they are numerous and happy; but, not a bird-house is visible on one of the five hundred trees in Washington Park. Will not some lover of birds see to this at once, and have at least three hundred erected?

Flocks of one thousand birds can often be seen in Central Park, and their pleasant chatter is delightful. About fifty were seen in Fifth avenue and Twenty-ninth street one morning this week, by an early equestrian. They have been seen forty miles north of this city, and if gentlemen would invite them to their residences in the country, let good bird-boxes be placed in every prominent fruit or shade tree with some oats or corn-meal, rice, &c., &c., in each compartment, and I will engage that the sparrows will repay their kind friends this winter, or early next spring and abide permanently. We have no other bird so destructive to the measuring worms, caterpillar race and insects, even to the mosquitoes. Jersey City and four of our parks, have been kept clear of worms the past summer by these little stranger birds. It is reported that the owls are making sad havoc with the sparrows in Jersey City. 'Shoot the rascals.'"

Scientific.

SCIENTIFIC LECTURES BEFORE THE YOUNG MEN'S CHRISTIAN ASSOCIATION.

PROFESSOR F. V. HAYDEN—THE PLAINS.

The Hall of the association was filled with an eager and attentive audience to listen to Professor Hayden's account of his recent scientific explorations on the plains of Kansas, Colorado, Montana and Dacotah. The whole valley of the Missouri came under review. The learned lecturer gave a complete account of its geography, its inhabitants, its plants, flowers and trees, its animals and finally its geography.

The general appearance of the country was described as a rolling prairie, one wave following another, much in the manner of the waves of the ocean solidified. The absence of trees, except near the water courses was mentioned. The grasses were described—upon which the Buffalo feed for fully ten months in the year, the grass drying into hay as it stands on the plains. The lecturer spoke of the vast herds of buffalo, the antelope, the prairie dog and the extensive villages in which he lives, also the grouse and wild turkey. As to the Indians who inhabit this region, Professor Hayden said that they had never, in fifteen years, while travelling among them, betrayed the confidence he reposed in them. He had, time and again, lain down to sleep near their villages, totally unprotected, when he would not have been at all surprised, had they attacked and murdered him and his party. He had always treated them kindly, and had never failed to receive similar treatment at their hands.

The geology of the district was the next topic. The upheaval of the whole Rocky mountain chain was described,—the mountains being of primary formation. Passing to Pike's Peak district, he said, the Peak itself was of granite, and thrust through the later formations. Around the granite, were the *azoic* rocks, containing the gold quartz of region. Upon the upper part of the Missouri valley are extensive tracts of lignite, or brown coal—and again, on the lower part of the river, from Leavenworth, eastward, we find another formation of bituminous coal. The south-western portion of Dacotah and the western part of Kansas, known as the bad lands, are the most barren of all the district, yet not devoid of grass. They abound in myriads of fossil remains, telling of the ancient sea of which this was once the bottom—numerous tortoises, much like those of the present day. Also a species of hog, that in later ages roamed these plains in tens of thousands, was described. Specimens of remains, which the Professor had brought with him, were exhibited. To describe what is in the plains now is comparatively easy work; but to reconstruct the district, as it existed in the former geologic eras, is a different business altogether—involving, as it does, research and labor that lead us among the sublime manifestations of the great Creator of the universe. The Professor was full and complete in his description, for the reason that many of the young men before him would no doubt in future years be finding their way out on these plains in search of business and of fortune. He is an enthusiast in his scientific researches. He displayed a fund of information gained by his observations that is most interesting and entertaining to his audience. He will lecture again on the *Indian tribes* of the district, and give prairie life in full detail, which cannot fail to be highly interesting. He believes in our young men and in their Christian association, and is contributing his share toward their mental improvement.

PROFESSOR R. E. ROGERS ON CHEMISTRY.

A brilliant lecture was given before a crowded audience on the philosophy of combustion by Professor Rogers. He began in the most elementary way, describing matter and the forces which operated upon it—showed that the solid and liquid were held together by cohesion, but that gases were apt to separate and expand. The action of forces upon matter, when a change took place in the substances acted upon, was called chemical action. The attraction of cohesion holds solid and liquid together; but a stronger attraction than cohesion existed between some substances, and when *they* were brought together new combinations resulted. Now, when the union of different substances is so violent as to cause light and heat, we call it combustion.

Numerous experiments were shown at every step of the explanation. Fulminating powder was exploded by a hammer;—vessels of solution of litmus were turned red by acids, and blue again by alkalies. Then a candle was burned under a receiver—and its dying flame watched. The change in the air fully described—the moisture deposited inside the receiver fully accounted for—and the whole theory of the union of carbon and oxygen fully explained. Phosphorus was burned by being merely brought in contact with iodine. The fact that nothing was absolutely *lost* by combustion was then stated; that the old elements merely went into new combinations. For every six pounds of coal burned in a stove twenty-two pounds of carbonic acid gas went up the chimney;—and beside that increase of weight, a certain weight of ashes always remained. Finely divided iron was then burned, and by a delicate balance, it was proved to grow heavier as it burned, quite contrary, certainly, to our generally received idea of combustion.—The galvanic battery was next explained; the fluid being the result of chemical union between an acid and a series of zinc plates, and the result being the galvanic fluid, by which combustion was readily produced. The partial combustion of platinum wire was exhibited, and then followed a series of the most brilliant experiments with the celebrated Ruhmkorff coil, which is the most powerful generator of galvanic electricity known. A rapid series of sparks eight or nine inches long were given, which set fire to paper held in the range; an exhausted glass tube, three or four feet long and three inches in diameter, was attached between the poles, and a bright ribbon of lightning as broad as one's finger and three feet long, of a bright purple tinge lighted up the darkened room. Then the fluid was passed through various tubes filled with different gases, which changed the color of the light, in each, to green, orange, violet or blue. The rapid report of the sparks, the brilliant succession of colored illuminations, made a display, of which words cannot convey any adequate idea. The class was loath to have the accomplished professor leave off his lecture. It lasted through nearly two hours, but many wanted two hours more.

Professor Rogers, too, has a high opinion of the association and of the work it is doing, and voluntarily lends his valuable assistance in adding interest to its classes.

CONSTITUENTS OF THE SHOOTING STARS.

We come finally to the question, what is the material, what is the mineral constitution of these strange bodies? We have already observed that they sometimes split into pieces high in the mid-air, and occasionally strew the ground in their fall. We shall not now stop to give a catalogue of instances; they may be found elsewhere, and specimens may be seen in almost every museum of any consequence. On submitting them to chemical analysis they are found to consist most frequently of iron in a metallic and malleable, and not in an oxidized state; the iron is in general mixed with nickel, and there are various compounds of magnesia and silica, and in some instances just those very ingredients which are seen in the trap and basaltic rocks of our own earth. These fiery messengers, then, bring with them tidings from the chill, distant regions of space, that matter therein abounds similar to the matter which constitutes what lies below the crust of our own planet. But not only so, the positive handling and the actual analysis of this interplanetary, or, it may after all occasionally be, this interstellar matter, serves only to confirm what modern skill has been able to detect regarding the material constitution of the stars, nay of the very sun himself. It might seem a bold and a strange assertion to state that we possess any certain knowledge of the mineral constitution of the bodies so inconceivably remote from us that we have no means to measure their distances; and if we had the means, we possess no arithmetic which could convey any intelligible conception of the number of the miles. But so it is; and, as certain as it is, that a well instructed observer, by analyzing light, can detect the material nature of the source from whence it comes, whether it may be from the combustion of iron, or nickel, or magnesium, or sodium; so certain it is, that the light from the sun and from the stars indicates the combustion of these very metals, in those bodies which otherwise we must have considered, for such purposes, hopelessly remote. It is not a little satisfactory, then, to find that so soon as we are unexpectedly able to *handle* masses of matter, which are the neighbours and the congeners of the sun and of the stars, rather than of ourselves and of our own planetary home, we find all our scientific conjectures verified, and we extract the very iron, and the very magnesium, and the very materials from the meteor planets, which we saw on fire with our own eyes in the mid-air and which we shrewdly guessed constitute the fires of the centre of our universe, and of those lesser lamps which are too remote even to feel the might of his influence. Thus suns and stars and comets, and nebulæ, and the meteoric dust which is sometimes spread upon our fields, are all bound together in one common material relationship.—*Good Words.*

PROPOSED ENLARGEMENT OF THE WATER SUPPLY OF GREAT CITIES.

The principal cities of the civilized world are now either enlarging their water works, or looking for an additional supply from new sources. The following statement of the present and proposed works of several cities, will enable us to form an idea of the merits of the Perkiomen scheme, as compared with those of Paris, London, and New York:

Paris has a population of 1,600,000, and an average daily water supply of 32,563,000 gallons per inhabitant, furnished by aqueduct, by pumping, and by artesian wells. This supply is being enlarged from several sources, and when the new works projected and now in course of construction, are finished, the city will have a daily supply of 105,400,000 gallons, or sixty-six gallons per inhabitant.

London has a population of 3,200,000, and an average daily water supply, furnished by seven companies, of 108,500,000 gallons, or thirty-four gallons per inhabitant. The new works, to bring in the head waters of the Severn, will furnish, as it is proposed to construct them, 120,000,000 gallons per day, or thirty-seven and a half gallons per inhabitant, and, when the full capacity of the works is used, 220,000,000 gallons per day, or sixty-eight and three-quarters per inhabitant. There is another project for supplying London from the lakes of Cumberland and Westmoreland, at a distance of 240 miles. By this scheme it is proposed to furnish 250,000,000 gallons per day, or seventy-eight gallons per inhabitant.

New York has a population of 800,000, and an average daily water supply by the Croton aqueduct, of 35,000,000 gallons, or 43¾ gallons per inhabitant. When the improvements now being made to these works are completed, 60,000,000 gallons per day will be furnished, or seventy-five gallons per inhabitant.

Philadelphia has a population of 750,000, and an average daily water supply of 35,000,000 gallons, or forty-six and a half gallons per inhabitant, furnished by fifteen pumps propelled by water power, and ten by steam. The new works proposed; viz:—bringing in water from the Perkiomen, will supply 75,000,000 gallons per day, or 100 gallons per inhabitant, and when the full capacity of the works, as projected, is required, 150,000,000 gallons per day, or 200 gallons per inhabitant, will be furnished.

The supply of these four cities, when the projected new works and the improvements in the old are completed, will be, per inhabitant:

Paris, an average of	- - -	66 gals. per day.
London (from the Severn,)	- -	68¾ " "
London (from the north county lakes),		78 " "
New York, from present works,	-	75 " "
Philadelphia, from the Perkiomen,		200 " "

—*H. P. M. Birkinbine.*

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