Scientific.

THE SUN.—The *Mechanics' Magazine* gives a summary of an interesting paper by Mr. Faye, upon the physical condition of the sun, deduced from the observation of the solar spots made by Carrington. This is expressed in the following propositions:

1. That Zollner's theory, which views the sun as a solid body covered with a layer of incandescent liquid, is entirely improbable, and, indeed, impossible.

2. The speed of rotation of any point whatever on the sun's surface is always expressed by one and the same formula.

3. There do not exist on the sun's surface any sensible currents which are at all analogous to the "trade-winds."

4. The absolute absence of currents is only explicable by the presence everywhere of ascending currents of great intensity, proceeding from the sun's center to its surface.

5. The existence of such currents is an imperative proof that the body of the sun must be in a gaseous state, and is an immense sphere of aeriform matter of an enormous temperature, but which is continually cooling by the action of the ascending currents.

6. The sun is absolutely spherical.

PHILOSOPHY OF RAIN. — Three-fourths of the surface of the earth is a great reservoir of moisture. Evaporation on all this surface is constantly going on. The atmosphere absorbs, and the winds carry this vast accumulation of moisture to the dry land.

The absorbing power of the atmosphere depends on its temperature. The warmer it is, the more moisture it will hold, till it reaches the point of saturation, or dew point. Now if warm, moist air is cooled, the surplus water resolves itself into drops and falls to the earth in the form of rain or snow; or, if near the earth, in the form of dew. High mountain ranges, being usually covered with snow, are condensers of moisture on a grand scale. This is why no rain reaches the plains of Utah. It is all condensed by the Sierra Nevada mountains, and falls on the Pacific slope. All forms of moisture—rain, snow, fog, dew, etc., down to the sweating pitcher on our table—are all manifestations of the same principle.

The annual fall of rain on the earth is very uniform, and we suffer not so much from a want of moisture, as from an unequal distribution. Evaporation is greatest in the tropics, on account of the greater heat; and greater in the southern hemisphere than in the northern, because of the larger proportion of water south of the equator than north of it; but the currents of air which carry moisture north and south, cross each other near the equator, giving us the greater evaporation of the southern hemisphere, consequently the larger rain-fall by four inches.

SINKING OF BODIES IN THE OCEAN. —Doubts about the sinking of bodies in the ocean can only be entertained by those who imagine the water is more compressible than the bodies sinking in the same. Now the reverse is the case. Water at a depth of 8,000 feet is only increased one-hundredth part in its density or specific weight, while cork, wood, or other porous bodies, will at a much less depth become so much compressed as to be unable to even re-ascend to the surface. They have become heavier than water, and, consequently, will float no longer, and this is called water-logged. We have heard people who even went so far in their error as to assert that, at a sufficient depth, the density of the water is such as to prevent even stones from sinking further; the absurdity of this notion is evident from the fact that in this case the whole ocean bottom would be floating.

THE SPECTROSCOPE AND NEBULAR HYPOTHESIS.—Prof. Kirkwood says that the spectroscope has demonstrated the present existence of immense nebulous masses, such as that from which Laplace supposes the solar system to have been derived. It has shown, moreover, a progressive change in their physical structure, in accordance with the views of the same astronomer. In short, the evidence afforded by spectrum analysis in favor of the nebular hypothesis is cumulative, and of itself sufficient to give this celebrated theory a high degree of probability.

POWER OF THE SUN'S RAYS.—Mr. Siemens, the well-known English telegraphist, has invented a photometer which has proved that light penetrates to a depth of one hundred fathoms below the surface of the sea. Hitherto it has been supposed that thirty fathoms was the farthest depth to which the sun's rays could reach, but an apparatus, of which the main feature is chemically prepared paper, has proved that the sun is more than three times as powerful as was supposed.

Horticultural.

For the Willamette Farmer.

BLACKBERRIES.

Few fruits are more healthy, rich, and delicious, than blackberries. For pies, jams, puddings, preserves, and to eat with sugar, sugar and milk, as also for wine of a rich, high flavor, for the sick, I know of none that equals it. Dried blackberries will cure the most obstinate cases of bowel complaints. For children, nothing is more healthful. And yet how few grow this superior fruit! Strange, that people will not live on the best when it is so easily procured. What can be more refreshing than a bowl of rich, ripe, delicious blackberries? What a regalia for the boys and girls to feast in, is a patch of blackberries!

Kittatinny.—This is the *best* of blackberries. It is large, and of excellent flavor. It is a strong grower, hardy, and very productive. This variety continues in bearing from three to five weeks, according to the richness, and moisture of soil, and care bestowed on it. A rich, moist soil, fair to sun, is the best location for blackberries. They are fine for market, and for home consumption few equal this kind. It is stated to be a hybrid between the common blackberry and the dewberry. In proof of which, occasionally a cane trails along the ground. Be its origin what it may, it is our best blackberry. It takes its name from the Kittatinny mountains, where it was first found.

Wilson's Early.—This variety is early, large, sweet, and good. Grows and bears well. It only continues in bearing about two weeks, and is generally gone about the time others commence bearing. It is worthy a place in every garden.

Lawton, or *New Rochelle.*—For size, yield, lusciousness, and beauty, it is almost unequaled; and it makes a most magnificently rich, heavy wine. Now, I don't want folks to go to growing Lawtons for wine, and get *drunk*—no, not drunk, but "gloriously refreshed"—for this would be making an evil of a good thing. Nay, rather, let us grow this excellent fruit for market, and especially for home consumption.

Dorchester.—This is a long, beautiful, and sweet berry, and an abundant bearer. It is quite early, and ripe as soon as it turns black. It's not bad to take.

Newman's Thornless.—This is a medium sized, good berry, hardy, productive, and its greatest recommendation is its comparative freedom from thorns. This is a ladies' blackberry, for they don't like to be pricked by thorns. Those who do not want to be scratched by thorns in gathering berries, should plant Newman's Thornless. Every farmer, and every gardener, should grow all of the above splendid blackberries. Why don't they? Ah! To grow blackberries successfully, the following is the best method: Select a moist, rich place, fair to the sun—plow it deeply and harrow well—plant, in rows, eight feet apart, and six feet in the rows—cultivate well, in hills. After the canes are fully grown, or at least before the sap rises in the spring, cut back to within three or four feet of the ground—cutting out all dead canes also. By cutting back so low you make the canes stiff, and prevent their straggling, or falling in the rows. You thus avoid the necessity of poling, or tying them up to stakes. Besides, being low, and in hills, you can get all round the vines to pick the berries, and thus avoid being picked by the thorns, as well as giving bigger, richer fruit.

PHILO-RUBUS.

AMONG the ladies who graduated at the New York Medical College for Women, March 29th, in New York city, was Mary P. Sawtelle, of Salem, Oregon.

The Horse.

THE ARAB HORSE AT HOME.—A correspondent writing from Egypt to the *Spirit of the Times* says: The Arab rarely exceeds 14½ hands high, though some are 15, and a very few exceed even that. They have wonderful endurance, not much speed except for short distances, and are extremely docile, and easily managed. The stallions are never altered, are exceedingly compact in form, with splendid heads and necks, beautiful prominent eyes, round bodies, and fine loins. Their legs and hoofs are harder and more durable than the thoroughbred horses of England and America. They are not good trotters; their principal gait is the walk or canter, and they are frequently taught a sort of amble, called in Mexico "sabre paso." They are great weight carriers. Col. Jenifer, inspector general of cavalry, to whom I am indebted for much information concerning the Arab horse, informs me that he has seen a horse 14 hands high frequently carry a soldier with his equipments, weighing together 250 pounds, and with apparent ease. In the cavalry service the horses are all stallions.

WHITE FEET.—A veterinarian thus explains how to produce white feet in horses: Take a piece of osnaburg the size of the white on corresponding foot; spread it with warm pitch, apply it around the foot, tying it afterward to keep it in the right position; let it remain on three days, by which time it will bring the hair off clean and make the skin a little tender; then take of elixir of vitriol a small quantity, anoint the parts two or three times; or use a common weed called Asmart, a small handful, bruise it, and add to it about half a pint of water; use it as a wash until the soreness is removed, when the hair will grow out entirely white.

FOUNDER.—In a case of chronic founder, trim down the feet; cut the heel as low as you can without bleeding, and apply the following mixture: Corrosive sublimate, 1 ounce; gum camphor, 1 ounce; oil origanum half ounce; turpentine, one pint.—Apply to the bottom of the feet; heat in with a hot iron. Be careful not to get the mixture on the hands. Feed one tablespoonful of Jamestown (Jimson) seed every other day for six days; omit four days, and then repeat, alternately, until a cure is effected.

VORACITY IN HORSES.—A subscriber to *Hearth and Home*, who has a horse thin in flesh, but with a voracious appetite, which prompts him to eat the litter, asks what to do about it. This inordinate appetite is a symptom of disease in the digestive organs, or of the presence of worms. If no worms have been observed, the first may be supposed to be the cause. A simple remedy is to feed to the horse a handful of wood-ashes, one ounce of sulphur, and an ounce of common salt, mixed in his feed every other day.

LEXINGTON.—The venerable race-horse Lexington, the sire of more winners than any horse of his day, either in this country or Europe, has been entirely withdrawn from the public, and his name does not appear in the list of Woodburn stallions this season, for the first time in many years. The old horse is still vigorous for one of his age, but at twenty-two it is time for a horse to retire to private life.

M. J. CARTER writes to the *Rural New Yorker* that if those who have crib-biting horses will nail a sheep-skin, wool side up, wherever there is a chance for the horse to bite, he will not do very much cribbing in the stable.

LAST Sunday Henry Ward Beecher preached about profanity. "He was sorry to say that women swore—women of culture and eminent in society, women that he knew—and there is a tendency in that direction. He spoke of the alarming prevalence of the vice, and wondered that women, in whose name all that is pure and good is associated, would become so degraded and so loathsome; that a mother addicted to profanity would dare look upon her innocent children. Among children the evil was widely spreading, but he hoped he was mistaken in its extent.

A doctor was very much annoyed by an old lady, who always stopped him on the street to tell him of her ailments. One day she met him when he was in a great hurry. "Ah! I see you are quite feeble," said the doctor. "Shut your eyes and show me your tongue." She obeyed, and the doctor moved off, and left her standing.