

Science AND INVENTION

With an open gauge in a central part of Edinburgh, Dr. W. G. Black last year collected dust and soot indicating a total fall of twenty-four pounds per one hundred square feet.

Nature's infinite variety is well illustrated in the collection of photographs of snow crystals made during the past 20 years by Mr. W. A. Bentley of Vermont. He has now more than 1,000 photographs of individual crystals, and among them no two are alike.

A relation between the character of dreams and the intensity of sleep has been shown by the experiments of N. Vaschide. In profound sleep the dreams refer to latent recollections of long-past events and matters seemingly having no connection with the present; but the dreams of light slumber are inspired by recent occurrences and excitements, and are sometimes connected with what is transpiring around the sleeper.

Coal workings around Cheadle, in North Staffordshire, England, have been traced back as far as the reign of Richard III. The early mining is explained by local geological conditions, as the coal seams—instead of being hidden under drift as in other parts of England—were brought to notice through dark streaks turned up by the plow. A late discovery is an old level that must have been driven at least three hundred years ago for draining a coal tract.

After a series of experiments with carrier-pigeons for conveying intelligence, the German naval authorities have decided to erect permanent pigeon stations on the coasts of the North and the Baltic seas. Every warship, except torpedo-boats, leaving Kiel or Wilhelmshaven will hereafter carry a consignment of pigeons, to be released at varying distances from the land stations. It is estimated that the birds have sufficient endurance to fly home over a distance of about 180 miles from land.

After so much has been said of the excellence of applied science in Germany, it is gratifying to learn from Lieutenant Carden, who has returned from an inspection of the iron, steel and machinery establishments of Europe, conducted in the interests of the St. Louis Exposition, that even in German shops the high-grade work is done with American tools. For general work, he says, German tools have taken the place of English tools, which, ten years ago, were employed in every shop of importance; but for work requiring great precision and excellence, there is to be found, in nearly all the leading shops, a group of American tools.

In the new fire-alarm system of Emile Guarini of Brussels, automatic signals are sent to the engine house by wireless telegraphy. The rise of the mercury in a thermometer acts upon a relay, and sets in motion a wheel which makes and breaks the electric circuit by a series of contacts. A series of impulses is thus sent through an induction coil and the usual transmitting apparatus. The receiver at the central station or engine house includes air and earth conductors, coherer, battery and Morse instrument. The same receiver can serve a number of transmitters in different places, and as the contacts on the wheel can be varied, the exact location of the fire can be indicated.

NICKNAMES

Given Often for Absurd Reasons, and Generally They Stick.

"Wonderful how nicknames stick to a person," said the observant man. "There were two nice little women in our village who came to call on us one evening, and we offered them popcorn which the children had just brought in from the kitchen. They refused, but not so emphatically as to keep us from giving them two heaping plates of the corn. We kept refilling the plates and they kept crunching all the evening. There was something so funny about it that I called them 'the popcorn ladies,' and the name has stuck to them so that the whole village knows them by it.

"I once knew a man who talked incessantly in a high-pitched voice and a bright girl dubbed him 'the chirper.' The name was quickly passed around among the young people, and now the greater part of his friends know him by that name. A very dignified young woman of my acquaintance goes by the name of 'Whont' to this day because when she was a very little girl she used to call herself 'Mrs. Whont' when she played grown-up ladies, and the family picked it up. She simply can't shake the absurd name.

"More than one red-haired man is known by the name of 'pink,' and philosophically accepts the title. I have an acquaintance who holds a responsible position who is known by the name of 'Dotty.' It seems that one day a mischievous girl discovered that

he had three very prominent dimples. She promptly dubbed him 'Dotty Dimple,' and now he is known to all his associates as 'Dotty.' Another man of my acquaintance is always called 'Bluebeard' because he has such a very white and thin skin that if he does not shave daily his beard shows blue through it. That name, too, came through a woman's quick wit.

"An old lady friend of mine is still called 'Peachy' because when she was a young girl she had a complexion like peaches and cream. Her brother promptly dubbed her 'peachy,' and 'Peachy' she will remain to the end of her days. In a certain household a very feminine little woman is still called 'The Boy,' because when she was a young girl she went through a very serious illness which made it necessary to cut her hair short. Her younger sister said she was 'The Boy' of the family, and the dainty lady is still called by that absurd name.

"An effeminate man was once called 'Viola' by one of the boys in the office, and now we know him by nothing else. Another one of the boys in the office is always called 'Chester,' and although he got angry at first he has cheerfully accepted the name now.

"Our bookkeeper is always putting in his car when it is not at all necessary, and I think now he will be known until the end of time as 'General Butts.' A friend of mine who is always called 'Cheerful' doesn't know whether he is called that because his friends believe he has a sunny disposition or because they consider him a cheerful idiot. But, at any rate, he can't shake the name."—Philadelphia Ledger.

FIRST PLANTING OF SPONGES.

Successful Experiments Made by the Government on Florida Coast.

Not content with utilizing all the available resources in the United States for the purpose of supplying the needs of the people of this country, Uncle Sam has invaded the sea, says the Philadelphia Ledger. The government has gone in for sponge culture. The supply of sponges has never equaled the demand, and we have been importing most of those required for the domestic trade. According to the enthusiastic trade. According to the enthusiasts of the United States Fish Commission, the American invasion of Europe soon will add sponges to its list of commodities.

Successful experiments have been conducted, and the actual work of planting sponges off the coast of Florida is being done under the supervision of Captain James A. Smith, of the Fishhawk. The sponges used in the propagation are of the sheephead variety, the most valuable in the world, and which fill every commercial requirement. Dr. H. F. Moore, assistant Commissioner of Fish and Fisheries, devised the method of planting.

The sponges are cut into small pieces from one to two inches in diameter. These small fragments of the living sponge, which are dark in color, the pores filled with fishy matter, are firmly fastened to pieces of coral, rock or terra cotta brick and dropped overboard. Thin aluminum wire is used for fastening them to the objects. The use of the aluminum wire is the solution of the difficulty which confronted the experimenters. The pieces of sponge have one outer skin intact, with the outer edges raw. The latter, however, quickly heal. The aluminum wire will, of course, pierce the sponge and form a small bore, or hole, through them. The wire corrodes; but this is an advantage, for it gradually wears away, leaving the sponge free of any foreign substance.

Most of the difficulties attending the culture have been met in attempting to find something to bind the sponges to the rocks which would last long enough for the growth to attach itself naturally to the new bed. The aluminum wire does this. Wood, string, copper and iron wire and various other substances were attacked by the salt water and animal life and rendered useless.

Sponges are being planted at Biscayne bay, Anclote Keys and Key West. An effort will be made to put the new industry on its feet so that private capital will become interested in carrying it on. There is every reason to believe that the venture will be successful and that in a short time all the sponges needed in the United States will be raised in Florida waters.

Had Experience.

Law seems to make its votaries suspicious beyond average men. An instance of this was noted at the Democratic Club the other night. A group of men who were dining there fell to discussing the advisability of husbands having no secrets from their wives.

"What do you think?" asked Michael Harris, turning to "Abe" Levy. "Should a husband tell his wife everything?"

"Why should he?" responded the little lawyer; "the average wife probably wouldn't believe it."—New York Evening World.

No power on earth could cause us to be impressed by a man who carries his handkerchief in his coat tails.

BRAIN POWER.



John Bull—No wonder the bloomin' Americans get ahead; look at the power plant.—Minneapolis Journal.

BUSINESS AND RELIGION.

The Two Are Combined in This Many-Sided New York Church.

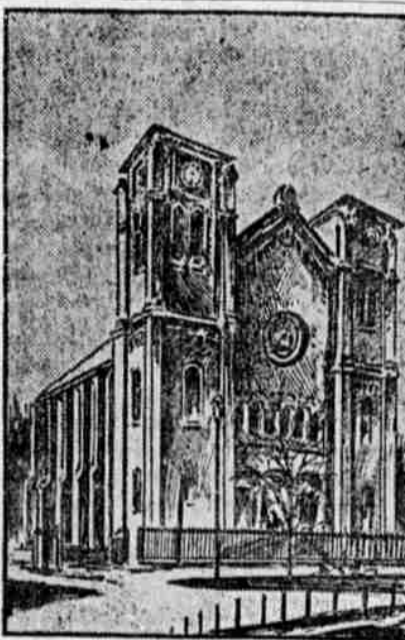
A novel kind of church work is that done at St. George's, Stuyvesant square, New York, into which David Graham Phillips gives the readers of Harper's an insight in a recent number of that publication. He says the conduct of this church is like the management of a huge industrial enterprise, a railway or a factory, requiring unusual business aptitude, technical skill and financial and executive ability.



REV. DR. WILLIAM S. RAINSFORD.

ty and, as it is but one of several of its kind, it stands as a type of the modern church. In his last year book the rector, Rev. William S. Rainsford, says he needs at least \$40,000 a year more than he can collect from his congregation to maintain the church and its extensive plant. In twenty years it has spent \$2,250,000 and at least four-fifths of this went into the plant, which also requires the free services of more than 200 workers.

The altar is there. Its influence permeates the vast whole and a staff of assistants aid the rector in spiritual and religious work by day and by night. But the rector is also general superintendent of a plant which is



ST. GEORGE'S CHURCH.

carried on almost exclusively by laymen. The entire membership of St. George's Church is organized into sub-associations for the development of intelligence, skill and character. Singing, sewing, acting, tailoring, manual training, shooting, kindergarten work, social entertaining, housekeeping, plumbing, carpentering, gymnastics, wood-working, cooking, care of babies, dressmaking, millinery, embroidering, debating, public speaking, basket-weaving—these and many other activities are engaging the energy and

enthusiasm of the 8,000 members of the church. The plant, of necessity, occupies a large area, the floor space befitting a great factory or combine of factories. There is the church proper, steeples and with two massive towers, whose clocks seem to be keeping time upon its tollers, warning them that a moment is approaching when a great whistle shall blow the close of the day's work. In the church proper the pews are free—no one can have the same seat, except by accident, two Sundays in succession. And the crowds that gather hear sermons that are also lectures on various phases of the practical life—addresses by the general superintendent to inform or to encourage or to get aid for or from his staff of workers. Behind the church is the rectory, the residence and office of the general superintendent, the headquarters or general office of the works. Behind the rectory, facing as it does upon East 16th street, is the big Memorial House, the main building of the great industrial and social character factory. Across the way is the Deaconess House, a sort of headquarters for the women superintendents and their staffs, and including an admirably equipped infirmary. Through East 16th street, three blocks farther into the East Side, is the Industrial Trade School. And finally there is the Seaside Cottage, where the society takes its summer outings—daily excursions, vacation stops. In buildings, real estate, machinery, etc., this plant represents an investment of upward of a million and a half dollars—and it rents its quarters for the Industrial Trade School.

In the Memorial House is the shooting range for the Boys' Battalion—a military organization modeled on the Seventh Regiment. On the first floor are the clothing and relief departments, where poverty is dealt with on a self-respecting basis. Here also is a circulating library. On the second floor is the Sunday school room, where on one day in seven 2,000 scholars assemble, with 150 teachers. The other six days this room is used for lectures, classes, schools of manual training, meetings, dances, etc. On the third floor is the men's club—a general room, a library, a billiard room, gymnasium, bath room, lockers, etc. The fourth and fifth floors are the clergy house and the battalion armory. The plant is unceasingly active. The crack of rifles, dance music and the steady beat of dancing feet, chorus singing here, a man lecturing there, the tramp, tramp of military drill, the click of billiard balls and the clash of gymnasium rings are heard constantly.

There is no side of life upon which St. George's does not seek to touch. Are you out of work? There is its employment bureau. Are you sick? There is its medical department and infirmary. Do you need a lift over an impossible place in the road? There is the relief department. Do you wish to improve your mind? Library, reading room, lectures, debating society. Is it the physical that you seek? Gymnasiums, military drill, baths, addresses on health and sanitation. Do you wish to learn a trade? Manual and industrial training for both sexes. Housekeeping, cooking, sewing, the care of home and family? You need look no farther. Are you in search of amusement? Billiards, chess, cards, in the Men's Club; dancing, receptions, tea, fairs, plays, germans, parlor games. Do you wish merely to sit quietly and reflect? St. George's Church, large and calm and thought-inspiring, always open.

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