

THE KNITTERS.

One day I chanced to happen in Upon a fine hotel, A very goodly company Within its walls did dwell. I saw them playing on the links And on the putting green; The girls in coats of many hues, It was a pretty scene. A sound of music filled the air; Unto the porch I went, And then I saw the women all Upon some work intent. Each in her lap a work-bag held, All filled with colored wool, And now and then from out it came A paper with some rule. And everywhere, indoors and out, I saw the women sitting; I asked what 'twas engrossed them so; The answer came, "they're knitting." They knit all through the morning hours And scarcely stop for tea, And even in the dining-room Their needles oft you'll see. At evening, when the ballroom's gay, Around the wall they sit, And while the merry dance goes on They knit and knit and knit. And even at their games of bridge (Now this I call quite funny), They keep their work-bags close to hand To knit while one is "dummy." And when unto their rooms they go, If you could only peep, I haven't doubt you'd find Them knitting in their sleep. They chatter, chatter as they knit, While seams they bind together, And guests may come and guests may go, But they knit on forever. E. S. W. S.

"FASTER THAN THE FASTEST PONY."

Sunday morning, June 25, 1876,—the centennial year,—broke brilliant and cloudless over the Big Horn Range and all the adjacent Indian hunting-grounds. If ever the heavens spoke of peace and good-will toward men, it was here and on this perfect day. Away to the east, along the Atlantic seaboard, the church-bells were calling to early worship. Here, halfway across the continent, with Cloud Peak towering, a dazzling white sentinel, over miles upon miles of glorious landscape, there reigned impressive Sabbath silence. It was barely five o'clock—"mountain time." It was still deep shadow among the cotton-woods in the winding ravine, where a dozen brown-faced, bearded men stood eagerly watching the movements of two of their number, who, following a half-breed scout, were slowly, cautiously nearing the crest of the eastward bridge. The arms and accoutrements, not the dress, the saddled horses grouped in the shelter of the flannel-shirted backs, as a supporting squad of troopers ran forward a dozen rods or so, then as suddenly halted, knelt and waited. And then, without moving the glass from his eyes, the elder of the two officers, after long survey, drawled in disgust: "Not a blessed thing in sight." But the younger, laying a hand on his senior's arm, then pointing far to the south-east, answered: "It." "It" was the broad trail from the Red Cloud Reservation, near the south-east corner of Wyoming, along which, by hundreds, the young braves of the Ogallala, Brule and Minneconjo bands had for weeks been flocking to the support of crafty old Sitting Bull in the far northwest. And "it" was what a veteran cavalry regiment had been called up from Kansas and sent by General Sheridan to find. When they had found "it" they were to "break up the business." Other veteran regiments, under General Cook were hunting for Sitting Bull along the northeast base of the Big Horn, others still, under General Terry, were marching to hem him in from the northeast, and yet another column, under General Gibbon, was closing in from the west. It was a powerful combination in point of numbers. It might have succeeded—but for one fatal move. "Well, there'll be no more joining S. B. by this route," said the younger officer, turning and pointing straight to south, where, long miles away, a dust-cloud was rising over the divides and ravines. "Yonder comes the regiment." "I know," was the answer, as the elder turned and gazed thoughtfully away north-westward over intervening miles of silence to where the wooded crests of the Cheetish barred the horizon, "but I wish we knew what was going on up there—today." Not until nearly fourteen days thereafter did we know, when, with his face pale with grief, our chief scout and trusted friend, "Buffalo Bill," started the drowsy camp with the direful news: "Custer and half the Seventh Cavalry wiped out." For that beautiful, peaceful Sabbath was the fatal day—and Custer's the fatal move. All the nation knows the story now, although not until the morning of Ju-

ly 5th was it flashed by wire all over the land. In profound ignorance of what had happened were the government, the press, the bereaved sisterhood at Fort Lincoln, praying for the safety of loved ones who had been stripped, scalped, mutilated long days before. Not until the Far West, her decks laden with wounded, reached Bismarck at dawn of the 5th, had an inkling of the truth reached the people of the States. Yet as far east as St. Paul and Minneapolis the Indians knew, and one old Mendota Sioux had told his staunch friend, the adjutant at Fort Snelling, who for the first time declared his informant a dreamer—or a liar. He was stunned three days later to find it all true. The marvelous system of signals by which the Indians rushed important tidings—on smokeless or smokes by day, and fires by night—had done it all. The incident is recorded and vouched for in the army text-book, Colonel Wagner's "Service of Security and Information." But here is Colonel Rodman's own story of the affair, told me the first long years ago, and repeated in writing for me only a few months before his lamented death. "Blind" was the pathetic name the old Indian bore, and blind he was, and for that reason, perhaps, more dependent than his fellows upon pale-face friendship. They lived at Mendota, a large band of Sioux, peaceable since the lesson given them in 1862, but doubtless sympathetic with their savage tribesmen on the far frontier. Blind had learned that food and kindness and welcome ever awaited him over at the fort. Blind had gradually attached himself especially to the adjutant, and from having been first led to the adjutant's quarters, had taken to groping his way hither, unaided, yet ever made welcome. Time and again did Rodman find the grateful Indian squatting in a certain corner of the little army parlor, patiently awaiting the coming of his friend and the cheery greeting, "How, Kolah!" Rodman had even learned to talk a little in the Sioux tongue, and to supplement this with some practice in their wonderful sign-language. This day, Monday, July 3rd, he had not thought of Blind's coming, for only two days before he had seen him safely across the south shore of the Minnesota.—The St. Peter of territorial days, and with him went a stout bag of bread, beef and coffee, and sugar in abundance, enough to keep the old fellow in comfort until mid-week. Yet here he was again, and two hours earlier than usual, and what was odd indeed in any Indian, quivering from intense excitement. Rodman's first thought was that Blind had met foul play—had been robbed of his treasures. But Indians do not rob their own people. They have not yet achieved all the customs of civilization. Before the adjutant could question the old son of a Sioux chieftain started him with his abrupt announcement. Speaking hurriedly, dramatically, in his native tongue, using as far as possible only those words to which his friend could understand, but accompanying every other with an expressive sign, Blind burst impetuously into his tale: "Heap battle—heap Sioux—heap soldiers—heap many sleeps (nights between marching days) up Elk River (the Sioux name for the Yellow Stone) and Greasy Grass (the Little Big Horn)—fight two days—heap soldiers—plenty white chiefs killed. Indians all know, Indians dancing, singing now (pointing to where Mendota lay, perhaps two miles straight-away South). More soldiers going—more battle soon—any day!" And here he ceased, fairly shaking from emotion. Now an officer of Rodman's own regiment had gone with Terry's own column, commanding two fieldpieces, yet such was Rodman's incredulity that he thought only of how to soothe the old Indian. This took all of his persuasive powers, for Blind made it clear that he feared there would be an outbreak among his fellows at Mendota; whereas Rodman only smiled, and finally sent him home. But on the awful morning of Wednesday, when the telegraph broke the news, and the "extras" down from Minneapolis and up from St. Paul later gave the official details of the tragic death of so many well-known and beloved comrades,—the army was smaller, then,—old Blind was sent for and told to repeat his story, and then asked this question: "How on earth could all this have reached you Indians at Mendota forty-eight hours before the telegraph could tell us?" And Blind answered, "Indians have no lightning string. Indians use Indian runner, mirror flash, fire arrow—fire and smoke. Indian tell that story faster than the fastest pony." Ex.

Huge Commercial Orchard Planned at State College.

State College, Pa., Feb. 28.—A sixty-acre fruit farm with the complete equipment of a commercial orchard is planned for the department of horticulture at the Pennsylvania State College. The new orchard, supplementing the present experimental tracts, is to be established to enable students to obtain practical instruction in modern methods of fruit growing.

Glee Club to Make Records.

State College, Pa.—The male quartet of the Pennsylvania State College glee club has arranged with the Edison Phonograph company to sing selections for several records. C. C. Robinson, Penn State's musical director, will have his club sing for the records while they are in New York city for the annual Intercollegiate Glee Club Contest, March 8.

—If you find it in the "Watchman" it's true.

The History of a Great Invention.

The history of inventions which have blessed the world is replete with prodigies of trust, faith, hope, perseverance and toil. Mr. George Westinghouse, the famous inventor, recently gave the history of his air brake for railways. It has been my privilege frequently to visit the great manufacturing plant of the Westinghouse Company and see the wonderful processes of manufacture of many devices and inventions of modern times. Mr. Westinghouse said that his first idea of a braking apparatus to be applied to all the cars of a train came in this way. He was traveling between Schenectady and Troy in 1866, and was delayed for two hours as a result of a collision between two freight trains. The loss of time and the inconvenience suggested to Mr. Westinghouse that if the engineers of those trains had had some means of applying breaks to all of the wheels of their trains, the accident might have been avoided and the time of the passengers saved. His first idea was to connect the brake levers of each car to its draft-gear, so that an application of the brakes to the locomotive would thereby apply a braking force through the couplers and levers to the wheels of each car. There was a chain brake used at that time by a railway, and Mr. Westinghouse was advised by the inventor to give up the idea, telling him that nothing better could be invented. But Mr. Westinghouse would not be discouraged and was more determined than ever to carry his ideas through. He was a young man at this time, working in his father's shops. He subscribed for a monthly paper of first-class mechanics that he read an account of the tunneling of Mount Cenis by machinery driven by compressed air, which was conveyed through 3,000 feet of pipes. This was the depth of the tunnel at that time. This account of the use of compressed air suggested to the mind of the young mechanic that his break apparatus could be operated by means of compressed air. He immediately prepared the drawings of his invention. In 1867 he filed a caveat in the United States Patent Office to protect his invention. In the meantime the young man moved from Schenectady to Pittsburgh. He had no money to finance the proposition, but he found a man who was willing to defray the cost of constructing the apparatus necessary to make a demonstration. The trial apparatus was ready in the summer of 1868. Officials of the Pennsylvania and Panhandle railroads were invited to inspect and witness the operation. One superintendent offered to have the apparatus placed on one of his trains so the appliance was moved from the shop and connected with a train made up of a locomotive and four cars. Upon the first run of this train, the engineer, on emerging from the tunnel near the Union Station in Pittsburgh, saw a horse and wagon standing upon the tracks. The instant application of the air brakes prevented what might have been a serious accident, and the value of this wonderful invention was proved. The air brake started from this moment on a successful career, and has been a great blessing to mankind. By its use many thousands of lives and much valuable property have been saved. Mr. Westinghouse has added great improvements, year after year, until now an immense train of 100 steel cars, heavily loaded, can be taken over the highest mountain, and safely handled by the automatic air brakes. A diplomat in Washington, D. C., in speaking before the International Congress, said that he felt safe in saying that the air brake had saved more lives than any general had ever lost in a great battle.—Ex.

Bird Life in Alaska.

Persons with a fancy for ornithology may be interested in the fact that Alaska has few birds in winter aside from grouse and the innumerable flocks of ptarmigan to be found throughout the Territory. These latter are numerous at all seasons, but are to be found only at high altitudes in summer. Geese and swans are seen by the million from the June to October, but seldom later. Ducks are fully as plentiful, but with the coming of fall they also migrate South. For some reason an occasional duck winters in Alaska, but a goose never. Most of the birds which nest north of the Circle spend the rest of the year in South America, some, like the Alaska night hawk, going so far as the Argentine, while the tern is not satisfied until he reaches the Antarctic regions. This means that most Alaska birds travel annually, coming and going, from 14,000 to 20,000 miles, not counting the distance covered in side trips for food and other purposes while on the way. From the middle of May until the first of July the birds return to Alaska in countless myriads, those which travel both day and night arriving first, while the observers of union hours who fly exclusively on either day or night shifts, come straggling in a few weeks later.

Spark From Man's Body Causes Garage Fire.

When a resident of Dubuque, Iowa, wearing a fur coat, and rubber boots, walked hurriedly to his garage on a cold morning recently, he did not realize that his movements were storing up a dangerous amount of electricity in his body. But the fact was that the friction of his arms against the coat caused a certain amount of static electricity to be generated, and this was stored in the man's body because it was insulated from the ground by his rubber boots. When he sought to prime the motor of his car with a mixture of gasoline and ether, using a metal squirt can—probably of copper, which is a good conductor of electric current—the can was brought so close to the motor that a spark was produced between it and the priming cup, igniting the gasoline. The can exploded, throwing the flaming liquid over both man and car. The man escaped with severe burns, but the car and garage were completely destroyed.—From the March Popular Mechanics Magazine.

Pageantry, a Civic Pastime.

The South Bend pageant condensed 240 years of intensely interesting local history into a three hours' performance. It lent itself wonderfully to dramatic presentation and had all the elements of a fascinating historical novel. All of the characters of the early priests and missionaries were taken by the faculty and student body of the great University of Notre Dame. Five hundred Indians from the Order of Red Men of Mishawaka and South Bend, led by a score of real Sioux warriors from South Dakota, staged a thrilling fight of 1676 between the Iroquois and Miamis, traditional enemies. Ladies from the auxiliary Order of Pocahontas dressed and painted as squaws, and the youngsters became Indian children. All other episodes were staged by local clubs, military societies, schools, lodges and individuals. Five make-up artists from the Chicago Grand Opera company transformed the pale faces into the aborigines of the forest. In the wealth of scene and story nothing gave a more powerful tugging at the heart-strings than the prologue which just preceded the great fight, "Father Marquette passes on his last journey, 1675." The intrepid missionary with the hand of Death upon him, was making his painful way through the wilderness, leading a party of a guide, with two companions following, carrying his canoe. They stop to rest, then pursue their slow journey to the landing, followed by the searchlights, while the band intoned the mournfully pathetic "Angelus" of Massenet. Marquette, then in his 38th year, died a few weeks later near St. Joseph, where he is buried. His headquarters, at St. Ignace, Upper Michigan. Another scene of the mournful splendor was "The departure of the Pottawatomies, 1840," where, after the United States government had sold their lands, they were driven out to the Southwest by United States troops. Rounded up by the soldiers and led by Father Badin, with crucifix raised aloft, the whole tribe with bowed heads and broken hearts slowly took their departure in seemingly countless numbers. The gorgeousness of Indian costumes, from chiefs who led, to the squaws bringing up the rear, presented a scene of aboriginal tribal splendor never equaled in American pageantry. Under the wonderful effects of search and spotlights they disappeared in the far distance. Their camp fires which flickered on the great field of woods and shore died out, and we came back to earth again to realize that it was not fiction but a cruel injustice in our last century's history. And then on down the path of the 19th century the dress parade marched, showing the first settlements, the burning and rebuilding of Mishawaka, the growth and development of the two cities, with a wealth of local incidents and celebrities, bringing the story down to the present. One of the most significant features of the South Bend celebration, in addition to the folk dances of all nations at the daily band concert on the court-house plaza, was the pageant of nations. In this 15 nationalities participated—French, English, Irish, Dutch, Belgians, Scotch, colored, Danish, Italians, Russians, Swedes, Germans, Filipinos, Hungarians, Polish. While the band played their national airs in turn, they marched by Miss Columbia, guarded by the Army and Navy, deposited their native country's flag, took up the Stars and Stripes and marched on singing "My Country, 'tis of Thee." It was a polyglot transformation sermon that thrilled. —March "Popular Mechanics."

Accessories to a Gentleman's Dress.

Before winding up their affairs the tailors, at a convention in Philadelphia recently, handed out some advice on ornaments. The man who wears gold ornaments is only giving expression to his vulgarity, according to fashion molders. The real thing nowadays is platinum. Pearls also are in vogue. For evening dress, studs and cuff links are the proper thing, or they may be of platinum with pearl trimmings. For business dress, scarfpins are outcasts. Their use is no longer indorsed by the tailors. It's the height of vulgarity to wear a scarfpin with a soft collar, they assert. Philadelphia has long been recognized as one of the fashion centres of the country, according to Thomas Fern, who maintains an elaborate merchant tailoring establishment at No. 1307 Walnut street. "The men of this city are as well dressed as any city in the world," said Mr. Fern. "In fact, Philadelphia is looked upon as being one of the few style centres of the American continent."

A trench coat, planned and executed by Mr. Fern, attracted considerable attention at the show of the tailors' convention. This garment was pronounced the finest of its kind on exhibition. The coat was made of Oxford gray cloth. Great lapels and a deep collar gave it a military air. It has a belt back, and the skirt hangs freely from the hips. Mr. Fern also exhibited a dress suit, a tuxedo and a double-breasted sack suit.

Like other tailors at the convention, Mr. Fern predicted higher prices for clothing during the coming spring and summer. The increase will be due to the scarcity of wool and linen. Since Belgium was overrun by the Germans, said Mr. Fern, the linen industry in that country has been practically at a standstill. The same condition is true of Ireland, he continued. The linen business also was hard hit by Russia entering the war, said Mr. Fern. Russia, he said, raises a great amount of flax, but with the beginning of hostilities the industry was paralyzed.

—With 700,000,000 tons of lignite coal in the soil, North Dakota is not experiencing any fuel shortage. Lignite, which is now used almost exclusively for domestic, commercial and industrial purposes in Central and Western North Dakota, sells from \$1 at the mine, in carload lots, to \$3 the ton, placed in the individual consumer's bin, a ton at a time.

FOR AND ABOUT WOMEN.

DAILY THOUGHT There never was a contest of which woman did not sit at the springs, so is she the source of all super-human efforts exhibited by men.—George Meredith. There is nothing better for cleaning shiny serge than ammonia if used in the right way. First brush the clothes well; then take a lump of ammonia, which can be procured from the druggist, and pour one pint of boiling water on it. Then take an old stocking (this is better than anything else, dip it in the ammonia water and rub it backward and forward on any part of the suit which is greasy or water, using a brush. The suit should then be hung out to dry in the shade. When ironing use hot, but not boiling, water to wet the cloth. Lay it on the suit and press with a hot iron until dry. Then wet the cloth again and iron lightly the second time. Do not dry the cloth when ironing the second time, as it is this treatment which gives it the dull, new finish. Be very careful to brush out the whole of the ammonia water before drying. Bottled ammonia is not strong enough to clean the suit properly. You women who live in the country will find that a can or two of paint and a bolt of pretty chintz will do much to transform your porch furniture. If you have no comfortable chairs for piazza use, do buy one or two. They need not be expensive pieces, but be sure they are comfortable and have pretty lines. The wicker or reed furniture is really the most attractive for verandas, and it is not at all expensive. You need not worry if you have two or three pieces of one kind and a couple of pieces of another variety. After you have given them all a coat of the same paint and made chintz cushioned seats and backs for them, they will look enough alike to fool any casual eye. Besides, no one expects rigid formality in porch decorations. If your house is white or gray you will find that green porch furniture will look best. Give all the chairs, tables and settees a coat of green enamel paint. The chintz for green furniture should contrast with it, and a figure with a good deal of red in it will be found most effective. You may be wiser to have a cheap upholsterer make the seat cushions and backs if you are afraid to tackle so tricky a job. Have them made with some white goods as a cover. Then you can yourself make slip covers for the chairs for them. The reason why it is better not to have the chintz put right on as the first cover of the cushions is because it may slip very quickly, being where the street dust can easily reach it. If the chintz is made into slip covers they can be removed and washed when soiled. If your house is any other color except white or gray, brown porch furniture is prettiest. So you can paint your furnishings brown and use almost any gayly colored, pretty bright chintz for cushions. A few don'ts might well be conspicuously posted in many a mother's mind: Don't consider it necessary to systematically underrate your child. Your adult friends will know you do not mean it, but the child will not, and probably more characters are weakened by the lack of self-confidence engendered by such a process than by the vanity which follows the silly bragging of overfond parents. Don't think that the moment you are alone with your boy or girl you must find fault or endeavor to improve the occasion by a little moralizing, no matter in how loving a spirit. This is the hardest don't of all, for no one is so anxious to help a child toward perfection as is the parent, yet it surely leads to an avoidance of the moments alone together, which should be times of happy confidences. Don't correct the child before others. Never mind if a well meaning relative does say, "My dear, I am surprised that you do not show more force of character; your children are suffering from a lack of discipline." Pass the matter over until you and the small offender can have it out alone. If the circumstances are such that it cannot be passed over, take him out of the room. Lastly, laugh often with, but never at, your child. This takes self-denial, but it pays. Make up your mind that whatever others may say, he can depend upon you for a quick, sure understanding, without quibble or joke at his expense. This does not mean that he must not take his share of harmless fun. It is wholesome, and too much sheltering would make him over-sensitive; but the mother who lets her child know that she never makes fun of him will be surprised at the confidence with which he relies upon it.—Nella Foss Ford, in "Mother's Magazine." When frying eggs place a cover over the frying pan. This cooks the egg evenly and without turning. Poached eggs should be done the same way. Apple parings and cores should be stewed to a pulp and then strained. This will make a jelly which, spread on apple tart, will greatly improve it. It can also be used for flavoring tapioca pudding. Orange peel and lemon peel may be used for flavoring sauces and stewed fruit. They can be dried and kept in a glass-covered jar until used. If potted cheese gets crumbly or dry in the pot, mix into it a tablespoon of boiling water and, have the spoon hot before measuring the water. Mix thoroughly and the cheese will be freshened and improved. Put the shoe on the last, take a flat-iron not too hot and a piece of wax; cut it in chips, put the wax on the sole of the shoe, then iron the sole with the wax on it; put enough wax on so it will be all soaked in the leather. This is a very handy way of preserving your shoes when you don't wear rubbers. —Put your ad. in the WATCHMAN.

FARM NOTES.

After making a 10-year test in three orchards, that differed considerably in climatic and soil conditions, the New York Agricultural Experiment Station has concluded that dwarf apple trees are not to be recommended for the professional grower. In these tests the station found that while there is a possibility of the dwarf trees bearing a little earlier than the standard trees of the same varieties, the amount of fruit so produced is too small to make the difference in bearing age of the two classes of trees of commercial value. Ten years, however, is a rather short period in testing productiveness thoroughly, but, nevertheless, there were no indications during that test that pointed to the possibility of a larger number of dwarf trees on an acre yielding more fruit than the proper number of standard trees. Another fact against the dwarf system was that the fruit was no larger, handsomer or better flavored than that of the full-sized trees of the same kinds. In favor of the dwarf trees it may be said that their small size makes it possible to grow more trees, and, consequently, more varieties, if desired, on a given area, besides being more ornamental than standards. These are facts that appeal rather strongly to the amateur grower, but they have no commercial value to the professional orchardist. Growers of fruit for market find several objections to dwarf trees that forbid their adoption. There is great confusion in apple stocks in this country, as well as in Europe, and it is difficult, and at times impossible, to get trees of the dwarfing stock desired. This is a distinct detriment, for a half-acre tree, where a true dwarf is wanted, would be about as much out of place as would be a standard. Usually dwarf trees sell at a higher price per tree than standards, which gives a very high acre cost, since four to nine times as many trees would be needed for an acre as standards. In very cold climates dwarf and semi-dwarf trees, especially the former, are very liable to winter injury or to winter killing. The union between stock and scion is not as good with dwarf trees as with standards, consequently more dwarf trees break off and are lost. To maintain the trees as dwarf require watchfulness and labor, since the scions frequently throw out roots if the union is at or near the surface of the ground. These roots must be removed or the trees quickly cease to be dwarfs. The rooting system of dwarfing stocks is relatively shallow, which results in several disadvantages: The dwarf trees are easily blown over, particularly when heavy with fruit; they suffer more from drought than do the deeper-rooting standard trees, and they cannot be so thoroughly cultivated to conserve the moisture because of the shallow-rooting habit; in cultivating root injuries are frequent, leading to lessened vitality of the tree, to ready entrance of disease and to the formation of suckers, a vexatious trouble of dwarf stocks. Suckering is due also, no doubt, to the fact that dwarf stocks are usually propagated from cuttings or layers. To maintain the trees as dwarfs some summer pruning is necessary, and it has been found impossible during the ten years to find a method and a time that will assure satisfactory results from summer pruning. On the one hand, the results for which summer pruning is done—maintenance of dwarfness and promotion of fruitfulness—do not always follow; and, on the other hand, positive harm often results because of the weak, sickly second growth which often is an after-effect, and which nearly always succumbs to the following winter. In these tests clean cultivation, with cover crops, usually legumes, was adopted as the method of tillage in each orchard, which was followed throughout with slight changes, as conditions demanded; and the trees were sprayed whenever necessary. Much time and labor had to be given each year to removing suckers and scion roots, operations essential to keep the trees true to type and to maintain their vigor. Pruning also was a perplexing problem, since the severe trimming of the trees at setting made it difficult to secure good heads in many cases. The winter pruning was not unlike that of standards, though more heading back was needed to restrict the size of the trees. Summer pruning is a necessity in the successful culture of dwarf trees, but no satisfactory system was developed by a series of experiments in the three orchards extending over ten years in time. The usual orchard mishaps occurred, like failure of trees to grow, girdling by mice, injury by stray animals, death from blight or from unknown causes, but the percentage of loss was small from these incidental perils of all orchard culture; but it was large from those apparently due to the dwarfness of the trees. Many trees winter killed; many failed to make a good union, with death or failure as the result; and the surface-rooting habit caused an unexpected number of deaths and failures. At the end of the tests the number of missing or replaced trees was quite too large for profitable orcharding. Contrary to what has been generally claimed for dwarf trees, ten years from bud proved too short a time to give satisfactory data regarding productiveness. This is in part, undoubtedly, due to the whip-pruning of trees at setting, the severe pruning necessary later to secure good heads, and the experiments in summer pruning. There is no question but that the eye always favors the dwarf trees. Such trees are seen loaded with fruit, and the conclusion follows that they have come in bearing earlier and are more productive than larger trees, which really bear more fruit, either per tree or per acre, though seeming to carry less. Dwarfs are much more spectacular than standards, hence, in part, their reputation for early and productive bearing. Colorful, Ooo. Dots, immense in size, appear on some new silks.