

## AGRICULTURAL.

### THE RIPENING OF CREAM

At the late (Winter) meeting of the New York Dairymen's Association, Prof. L. B. Arnold pronounced the proper ripening of cream as essential to the making of perfect butter. In explaining the two kinds of changes which go on in cream when ripening, and which are induced by two distinct causes, the change most readily noted is the development of acidity, which is the result of fermentation pure and simple, and is brought about by the growth of organic germs whenever the cream is warm enough to allow them to sprout and grow. The only direct effect of the fermentation is to change the milk sugar in the cream into an acid. The acid, when formed, coagulates the albuminous matters in the cream, separating them into a solid curd and serum. This facilitates churning, but has no effect whatever upon the fatty parts of the cream until the acid becomes strong enough to begin to cut the butter flavor, which is thereby reduced, to the injury of the butter.

It is generally supposed that souring develops butter flavor. No greater mistake could be made. It has no influence upon flavor at all until it becomes strong enough to commence injuring it. Butter flavor is increased while the cream is ripening, but it is effected by the action of the air upon the fat in the cream, and not at all by fermentation. If a sample of sweet cream is divided, and both parts are kept at a favorable temperature for ripening, and the air is excluded from one and a free exposure given to the other, both will sour at the same time, but flavor will only be increased in the one exposed to the air. Churning in two parts will show this.

The free oxygen of the air under favorable conditions oxidizes at least some portion of the milk fats, with the result of developing butter flavor. Oxidation is most effective while the cream is sweet and at the churning temperature, or about 60 degrees. What is wanted, therefore, for highest flavor, is to give the sweet cream the longest and fullest exposure to the air at a proper temperature.

Those butter-makers who add sour milk or buttermilk to hasten the souring cannot have butter which reaches the highest perfection in flavor. The sooner the minds of dairymen are disabused of the idea that the ripening of cream and the development of high flavor in butter lie only in the souring of the cream, the better it will be. The importance of atmospheric influence in the ripening of the cream must be recognized by those who wish to produce the finest quality of butter.

The most advanced butter makers maintain the perfect exclusion of the low cooled milk and cream from the air. Whenever warm air or air comparatively warm comes in contact with colder milk or cream or water, or any other liquid, the warm air, touching the cooled liquid, is condensed, and deposits moisture in the form of dew on the surface of the cold liquid. With the dew thus deposited go all the impurities the air may contain. In the case of milk and cream, these deposits impair, in a marked degree, the flavor and keeping quality of the butter made from them. It is not essential that air should be excluded from milk until its temperature falls to the temperature of the surrounding air, but when it drops to that point, exclusion from air is important.

Churning should be done at the first appearance of acidity. Do not wait until the cream gets intensely sour and stale. In churning, the butter should be granulated in the churn, instead of being gathered into a lump. It should be cleansed of buttermilk by washing and not by working. After lightly salting, it must be worked into a solid condition with the slightest working that will effect that end.

Ninety-six varieties of grapes were planted six years ago in the grounds of the Ontario Experiment Farm. The location is 1,200 feet above sea level. The following are now recommended in the Report of the Fruit Growers' Association of Ontario, as the best; hardiness, yield and flavor considered: Black: Wilder, Worden, Moore's Early Concord, Barry. Red: Delaware, Brighton, Lindley, Agawam. White: Niagara, Lady, Martha.

The largest sale of cattle ever made in Kentucky by one man was made on July 13, by C. Alexander, cashier of the Northern Bank. He sold from his 22,000 acre farm 550 head of fat cattle to M. Kahn, of Ohio, for M. Goldsmith of New York. They will be shipped to London, England.

### TEST OF A JERSEY COW.

A. D. Baker, in an interesting letter to the "Country Gentleman," says:—As I have become quite interested in Jersey cattle, I will report a test I have been making with Jua of Springbrook, No. 36776. She came in the 25th of April, and the last of May I tested her for seven milkings. She made 9 lbs. of unsalted butter. Her feed was grass and 4 quarts of corn, oats and bran, equal parts, in two feeds night and morning. I tested her again, commencing June 21, for seven milkings. She made 7 1/2 lbs. of unsalted butter, and it was drained dry. She had no grain since June 8th. I think without grain is the true test of the butter capacity of a cow. In her last test I forgot to mention she gave 110 lbs. of milk. The weather was excessively hot, so much so that the cows ate but little in the day time. I think she could be forced up to 25 or 30 lbs. per week, but I do not wish to do it, for she is a good breeder, having had all heifer calves.

I think the Jersey breeders should have a standard registry the same as the trotting horse has, and let the standard start at 14 lb. without grain. Then when one wished to purchase a good cow they would know where to find it. I think of coupling Jua with one of Exile's sons, and if she continues to have heifer calves I will soon have a herd of cows worth caring for. I wish that breeders would test their cows and report through your valuable paper.

### PRESERVATION OF EGGS.

At the London Dairy and at the Birmingham Fat Stock Show, during the last two years, prizes have been offered for the best preserved eggs, says an exchange. These, as well as many private tests, have shown that the lime water system is, all things considered, the best. A pound of lime should be stirred with a gallon of water, and the eggs, perfectly fresh, immersed therein in barrels or jars. This excludes air and any germs that might cause mildew or mould, and prevents evaporation, so that the contents of the egg are not reduced in bulk. It is important to have a considerable excess of

lime to replace any that may become carbonated. The vessels containing the eggs should be kept in a cool, well ventilated place.

A very successful variation in the process consists in imbedding new-laid eggs, warm from the nest, in a thick paste of lime and water. Eggs thus prepared, for six months could hardly be distinguished from those newly laid. The contents of eggs evaporate rather rapidly through the shell; and the object of the preserver must be to prevent this evaporation, and at the same time to allow for the expansion and contraction of the natural air-space in the egg, due to changes of temperature. The plan of coating the shells with wax or melted paraffine fails in the latter particular. Strong brine fails because the contents of eggs preserved in it become much reduced in bulk.—[American Stockman.]

### SHEEP SHEARING MACHINE.

An Australian correspondent tells how a gentleman, who owns a sheep station near Murrumbidgee, in New South Wales, has now in operation, in his shed, a sheep-shearing implement which is driven by compressed air. "It resembles a pair of ordinary horse-clippers, and can be comfortably held in the hand. The motive power causes a small piston in the base of the handle of the machine to work backwards and forwards with extreme rapidity. This piston sets in motion a bar, which, working upon a pivot, causes the cutting teeth of the machine to oscillate very rapidly over the rigid teeth of the comb below. The cutting action is thus precisely the same as with horse clippers. A rigid metal pipe runs along the length of the shed, and each machine is connected to it by a flexible india rubber tube. The air is turned on, and the upper teeth of the implement work rapidly over the comb; the operator seizes his sheep and applies the machine. As the teeth of the comb run through the wool close to the skin the cutters sever the fibres quite evenly, and the whole fleece seems to peel off as if by magic. There is no chance of the animal being cut, as with shears. The fleece is much more closely, as well as evenly, taken off than by the old method, and less liable to be broken and the labor involved is much less."

### POULTRY NOTES.

Is there a better cross for the table than the Indian Game and the Plymouth Rock? Stephen Beale recommends a Dorking cock with Brown-Red Game hens.

Eggs are not used in the farm house as much as they ought to be. This is due largely to the want of variety in cooking them. There are many other ways of preparing eggs besides frying and boiling them. When eggs are cheap don't glut the market with them but use them yourself.

Now is the time to kill and eat spring chickens. This is the season of hard work on the farm and the farmer and his family should have the best of food. Chickens no longer command a fancy price, and now is the time to eat them. They are no more expensive than roast or corned beef and are vastly better food at this season.

We have two adjoining yards, one containing ordinary barn-yard fowls, made up of Brahmas, Plymouth Rocks and Cochins; the other of thoroughbred Wyandottes. The cross-breds or scrubs produce nearly a third more chicks and eggs than the others and do not receive nearly so much attention. The Wyandottes are probably inbred too much, and this is probably the trouble with the breed. There are few if any better table fowls than the Wyandottes, and they are excellent layers. They are, however, very delicate, and often deformed and unhealthy.

### NOTES.

It is not too late to drill some sweet corn for fodder. If you get your early potatoes dug in July, harrow the ground thoroughly and plant your corn. You will be certain to get some forage, unless winter sets in early in October.

It is said that tile enough has been laid in Illinois to reach three times around the globe, costing between \$10,000,000 and \$15,000,000; and the experiments of the State University professors go to show that the best crops are found in the best-drained soil.

Nearly all strawberry growers agree that good wood ashes can be applied to the strawberry plants with benefit. One hundred bushels can be applied to the acre with profit, under ordinary circumstances. They should be thoroughly incorporated with the soil on the surface.

No country home is what it ought to be without good gardens, both vegetable and flower. The best part of the family living comes from the kitchen garden, and the amount of enjoyment that the whole family derives from well kept beds of flowers, is not to be reckoned in dollars and cents.

State Geologist Thompson, of Indiana, insists that farmers should protect their birds in every possible way. Everybody knows, he declares, that we have 100 insects harmful to our fruit trees, vines, vegetables and cereals to where we had one thirty or forty years ago. Why? Largely because the birds are one-tenth part as numerous as they were then. You cannot have a healthy apple orchard without plenty of birds. The same may be said of cherry orchards and the whole catalogue of fruit trees, vines and vegetables as well as of the stable cereals.

Ralph Allen says: "Dairy farming furnishes a constant source of income. It enriches the land more rapidly than any other branch of animal husbandry. It may be carried on with small capital without danger of being smothered by larger establishments. It is profitable on high-priced lands, where other cattle would not more than make a good rent. In short, dairy farming, like every other branch of agriculture, has advantages peculiar to itself, which make it in many places and under many circumstances a desirable and remunerative employment."

J. A. Dawson, of Picou, N. S., was reported at a meeting of the Nova Scotia Fruit Growers' association, by the Secretary, as having tried with entire success the application of salt water to the bark of apple trees for destroying the bark louse. One pint of salt is dissolved in two gallons of water. A single application is made about June 10, with a stiff paint brush. Care is taken not to wet the leaves, as the salt will destroy them. It has the merit of being very easily tried. It is obviously important to apply it at the right time or early in June when the eggs are hatching.

## FIGHTS WITH PIRATES.

### Cleaning Out a Couple of Big Free-booting Gangs That Infested the Chinese Seas.

From the year 1852 to 1854 the Chinese sea, from Shanghai in the north to Singapore in the south, was infested with pirate craft, says a writer in the New York Sun. As for that matter, the sea had been the cruising-ground of pirates for a score of years previously, but I mention these two years for particular reasons. One was that I was engaged in a vigorous warfare against them, and the other that the close of 1854 witnessed the death of the leading spirits and broke up piracy as a trade.

In those far back days comparatively nothing was known of China outside of a few seaports. Treaties were of little account, consuls were few and far between. Every merchant ship was expected to defend herself and the captain of every man-of-war had authority to bombard any town which refused to renew his water and provisions. All nations were trading with China, but aside from a few seaports all China hated all other people. At the docks at Hong Kong I could drink tea with the Chinese merchants. Half a mile away the people would have cut me to pieces. While the country wanted to sell its products it hated the men who bought them. While it wanted the goods of other countries it despised the makers and shippers. There is no doubt that the Chinese government tacitly encouraged piracy and, could the great mass of the population have had its say, not a single foreigner would have ever been allowed on land on the coast.

In the year '54 there was an association at Canton called "The Foreign Traders." It was composed of Americans, Englishmen, Germans, Frenchmen, Spaniards, and Russians, and numbered over sixty representatives. The capital represented amounted to millions, and the object was threefold. We had more power with the Chinese government than any foreign minister. We had rules and regulations regarding the tea trade. We could carry a point by protests and threats. Every pound of tea from a district five hundred miles square had to pass through our hands. We filed many protests against the pirates and the laxity of the government in hunting them down, and were finally officially informed that we were at liberty to take any steps we deemed best in the matter. That meant we could fit out a craft and go for the rascals right and left handed. We had been anticipating this, and had a craft ready at Hong Kong. She was an American schooner of excellent model and large spread of sail, and we knew that she could outtail anything, native or foreign, we had ever seen in those waters. We armed her with a long tom and four 24 pounders, having bought the salvage of a French man-of-war. Then we picked up a crew of fifty men—all foreigners and sailors—and when we went out of Hong Kong we were prepared to give the pirates hell. I was purser of the schooner, which was called the Rsvengo, and her captain was an Englishman named Wetherbee, who had served as a commissioned officer in the regular service. The first lieutenant was an American, and the other officers were divided up among the other nationalities. We flew the association flag, and while we had liberty to go for pirates, we were warned that any mistakes would be made to cost us dearly.

The two boss pirates of that date were Shung-Wong and Chin-Lung. The first had a fleet of seven or eight craft, and haunted the sea from Spingapore north to the Tong-Kin islands. The second cruised from thence as far north as Shanghai, having his headquarters at Formosa island. He was reported to have a fleet of nine craft. That both were monsters we had a hundred proofs, and that both had grown rich and powerful it was easy to show by the long list of missing vessels hanging in the headquarters office. While we had kept our movements as secret as possible, we had no doubt that government officials had given us away, and that the pirates would be on the watch for us. To deceive them as far as possible, we ran to the south for three days, and spoke and reported to four ships bound for Canton. Then we ran toward the Philippine islands until we had a good cding, when we headed up for Formosa to get acquainted with old Chin-Lung.

During the next three days we did not sight a sail of any sort. Then early one morning we fell in with a lot of wreckage which showed us that a trader had been overhauled and burned. We were now to the east of Formosa, and fifty miles off the coast. Men were set to work to give the schooner the appearance of a vessel in distress, and under a light breeze we made slow headway towards the island. It was about 4 o'clock in the afternoon before anything approached us, although we saw a number of native craft at a distance. Then a small junk came out from a bay about five miles off and headed directly for us. Everything aboard of us seemed to be at sixes and sevens. A man was lashed to the mainmast, to represent the captain, everything aloft was askew, and the seven or eight men on deck were seemingly drunk and having a high old time. We had a man aloft to play a part, knowing that he would be hailed in English. Both of the boss pirates had Americans and Englishmen with them—rascals who had deserted their ships and voluntarily adopted the life of a pirate—and one of them was always put forward to hail a ship. The junk came steadily forward to within hailing distance before she came up into the wind. This was proof, whether she was honest or not, that our appearance had deceived her. The men on deck yelled and shook their fists as drunken men might do, but at the first opportunity a voice hailed us. "Schooner ahoy! What schooner is that?" "The Revenge, Capt. Thatcher, bound to Shanghai," answered the man aloft.

"What's the matter aboard?"

"Crew in a state of mutiny for the last three days. They have lashed the captain to the mast and driven me aloft."

"What's your cargo?"

"General merchandise?"

"Any arms aboard?"

"Only a few muskets."

There were a dozen men aboard the junk, but they dared not attempt to board. They chattered away among themselves for a while, and then the spokesman called out: "Very well, we will bring you help."

With that the junk headed back for the bay, accompanied by the yells and curses of the apparently drunken crew. We had a native aboard called Shin Lee. He had been in headquarters office for several years, and could be depended upon. He gave it as his opinion that the junk was a spy boat sent out by the pirates, who never attacked a vessel by daylight without taking all due precautions. He said we would see the pir-

ate fleet come out in case no sail appeared on the horizon, and his words were speedily verified. We had been gradually edging inshore, and were not over five miles from the land, when we caught sight of five junks coming out after us. There was a good working breeze, and now, as was only natural, they began to claw on. By seeming to want to get away very badly, but by carefully manipulating the helm, we were seven miles off the land before the fleet reached us. We were satisfied of their intentions long enough before. It was not to help a vessel in distress, but to take advantage of one almost helpless.

The junks kept pretty well together, and when within rifle-shot each one raised Chin-Lung's flag and uttered a cheer. Each had a couple of howitzers, with which they opened fire upon the schooner, but no harm had been done when we were ready to spring the trap. At the word of command every man was on deck, the gun crews jumped to their stations, and things aloft were ship shape in a moment. Then we were round to get between the pirates and the bay and opened fire. A Chinese junk is a mere shell. One solid shot went through them as if they had been paper. The poor devils were unnerved as soon as they saw the trap into which they had fallen, and devoted all their energies to getting away. We could outtail any of the junks, but it was quick work with four of them. They were sent to the bottom one after another, and as we came up with the fifth we ran her down. Our stem struck her full on the starboard broadside and cut her almost in two. She had at least thirty men aboard, and there was one long, despairing shriek as they went down to watery graves. A few came up to clutch at the wreckage and beg to be taken aboard, but not one of them would the captain lend a hand to. Such as the sharks did not get hold of drifted out to sea with the tide. It was a fearful retribution, but these men were monsters. Inside of thirty minutes from the time we opened fire the fleet was at the bottom and at least a hundred pirates had paid the penalty of their crimes.

Our captain was lamenting the fact that he had not picked up one or two in order to secure information, when there was a row forward, and it was announced that a pirate had been found hanging to the chains. When brought aft he was ready to do anything to save his life. His name was Mung-Hang, and he had good cause to believe that we would reverse it. He was the captain of the junk we had run down, and was ready to tell us all about old Chin-Lung. The bay was his rendezvous, but his plunder was hidden on the coast near Foo Chow. There were barracks for men up the bay, and thirty or forty men there at that moment. They had captured a French brig several days before, and she was then at anchor in the bay waiting for Chin-Lung's return, who was then up among Loo Kio islands with four junks to capture a large ship which had drifted into shoal water, but was not abandoned. If we would spare his life he would pilot us anywhere and prove his gratitude in any way. Shin-Lee took him in hand for a few minutes and then announced that we could depend upon him. We ran into the bay, brought up alongside the brig, and sent forty men ashore to clean out the place. Not a pirate was to be seen, all having bolted for the woods. Everything which would burn was set on fire, and a prize crew was put aboard the brig to navigate her to Hong Kong. She reached the port safely and our salvage money went far to reimburse the company for its outlay.

When we sailed out of the bay it was to look for the boss pirate. He was nearer than we thought for. At 8 o'clock next morning we saw his fleet dead ahead, on its way back to Formosa empty handed, and by 10 we had the junks under fire. These were a braver lot of men. Knowing that they could not outtail us, and seeming to suspect that we were an enemy, they closed right in for a fight. It did not last long, however. We had one man killed by the fall of a block from aloft and three or four wounded by the bullets from their ancient fire-arms, and in return not a man of them escaped. In less than an hour's fighting altogether we sent nine junks and two hundred men to destruction. Bitchery, was it? Well, call it so: but remember that in the previous twelve months the fleet of this old pirate had captured no less than ten foreign craft and six traders, and that every man, woman, and child aboard had been murdered. There was no sentiment about Chin-Lung. He thought of nothing but blood and plunder, and he would cut a child's throat with a smile on his face.

We were now ready to sail in search of Shung-Wong, who had less power, but was just as great a villain. These two leaders had divided up the territory and compelled all lesser pirates to join them and come under their control. So, then, we had only two men to strike at to down the whole lot. At the close of the third day, after hearing for the south, we came upon the track of the piratical fleet. A trader in woods and dye stuffs had been overhauled about a hundred miles north of the northern group of Philippines, called the Little Philippines. The crew consisted of three men and a boy, and the vessel had only part of a cargo. Shung Wong had boarded her himself, and although the crew were native Chinese, he could not restrain his bloody hand. He demanded a sum equal to \$300 in American money. There was only about \$20 aboard, and he personally cut the captain's throat, had the others flogged, and went on his way to the bay of Luzon, which is on the west side of the island of that name. We spoke the trader, and received from her terrified crew the incidents above narrated, and then showed our course for the bay. As luck would have it, an American ship called the Joseph Taylor was ahead of us, and as she passed down the coast was attacked by the fleet about seven miles off shore. We heard the rumpus about an hour before daylight. There was little breeze, and though greatly outnumbered, the crew of the Taylor beat the pirates off. At daylight the wind freshened, and we slid in between the junks and the shore just as they were preparing for a second attack. We were no sooner within range than we opened on them, and, seeing escape cut off, the fellows tried hard to lay us aboard. In thirty minutes from the opening of the fight we had run or sunk or run down every junk and disposed of every pirate, and only had four men wounded in doing it.

Our work had been done so promptly and well that it struck terror to the hearts of all villains in those seas, and it was several years before another act of piracy was committed. The Chinese government returned its thanks to the association, ship-owners sent in contributions of money to express

their gratitude, and when we came to sell the schooner to the Chinese government as a cruiser, the company was financially ahead. It was probably the briefest cruise and attended with the greatest results recorded of an armed vessel.—[Chicago Mail.]

## FOR AND ABOUT WOMEN.

### GREEN IN NEW GOWNS.

A fashion writer in the New York Mail and Express says:—The great prevalence of the color green in the costumes this summer in London and Paris is remarkable. It is introduced on white dresses, either in velvet or moire, as collars and cuffs, and occasionally a sash is added. It plays a similar part on black dresses, and those in the popular biscuit color have often finishing touches in green. This latter combination is one of the most trying to the ordinary complexion that could be devised. It brings out all the latent yellow in the cheeks, and makes even a passively good complexion look muddy. Only the clearest and freshest coloring is uninjured by the proximity; but when the complexion is really transparent and softly tinted with cream and rose, the effect is excellent. English women do not seem to consider the coloring that is likely to suit their faces, nor do French women set them a good example in the matter. One often sees a freckled face looking almost black because the hat or bonnet is trimmed with bright blue or pink.

Some softer, subtler shade of color would, on the other hand, tone down the darkness of the freckles and bring out all the pink that underlies them in the glistening face. The shades of blue that are called goblin and porcelain are excellent in this way; so are the shot ribbons in which a bright tint is partly neutralized by a deeper one. Cornflower blue in two shades is a very safe union to place near a doubtful complexion. The tender pallor of the paler blossom is so soft that it cannot injuriously affect the skin by making it look darker, and the decision of the deeper blue helps to give value to the light one.

### DRESS FOR THE KITCHEN.

The uniform insisted upon for women by those who direct gymnasium exercises is the only one appropriate for house-work, so far as the undergarments are concerned. No corsets, loose bands, and the weight of the skirt suspended from the shoulders, is the only formula for a comfortable working dress for women that ever has or ever can be given. We hear, in fancy, the exclamation, uttered by an overwhelming chorus of feminine voices: "No corsets! Give up our supporters!" and we make no reply save, "Try it."

Kitchen aprons, gloves, and caps to be worn when sweeping, dusting and attending to fires, are essential to cleanliness and soft hands. "Oh, I can't bother with gloves!" exclaims some one. How much trouble and time are necessary to the slipping on of a pair of loose gloves, kept in a convenient place! And how amply repaid is one for the infinitesimal amount of both involved when she takes up her sewing. Consider, too, how much more soothing the touch of soft hands to the little ones and invalids than that of hard palms and rough, cracked fingers.

### WOMEN'S WAGES.

A lady, engaged by a Chicago paper to enquire into the pay and treatment of women employed in the shops of that city, adopted the method of going to the different factories in the character of a needy working girl. Her day's experience at an establishment where jerseys are manufactured is given in substance as follows: By noon she had finished four jerseys, which were counted as worth 25 cents by the forewoman. There were about 120 women at work in the shop, and when they stopped at noon the reporter counted 37 girls with a lunch of dry bread, 15 with sandwiches, and 10 who ate cold pancakes. Twenty-three girls were without any lunch whatever. The air in the shop was bad, but at noon the elevator stopped running and none of the girls left the building. Many of them rushed into the toilet room, which had one faucet of running water. "Here," says the writer, "the girls crowded like so many cattle, each with her bit of soap and gritty cotton towel, to wash. Dress waists were loosened and necks, faces, arms and hands lathered with soap and rinsed as chance permitted. Set up against the wall in the inclosure, with the faucet run through the partition, was a barrel of ice water inscribed in big letters: 'Two cents will be collected every Saturday for ice water.' Besides this luxury every hand pays 12 cents for the use of the machine." In the afternoon the reporter got some more work, and nothing occurred until a girl was found asleep in one of the rooms. She was very sick, she explained, on being awakened. The girls said that, with her sister, she had begun work at the jersey factory that morning. Between them they had earned 27 cents and were utterly disgusted. By this time the reporter had raised her earnings to 41 cents. She tried to get the money, but was put off to the 20th of the month. On leaving the building she stopped in the salesroom to buy a jersey. She says: "One of the firm waited on me. His magnanimity was sublime. The identical black jersey that I had received 5 cents for finishing was offered to me at \$2. I declined. By way of interest, 100 dozen garments are turned out of the factory every day in the year. As near as I could learn the salaries average \$4 a week, but plenty of grown women are not allowed to earn over 28 cents a day."

As telescope power is increased we still find stars of fainter and fainter light. But the number cannot go on increasing forever in the same ratio as with the brighter magnitudes, because if it did the whole sky would be a blaze of starlight. This much is certain, that in special regions of the sky which have been searchingly examined by various telescopes of successively increasing apertures the number of new stars found is by no means in proportion to the increased instrumental power. If this is found to be true elsewhere, the conclusion may be that, after all, the stellar system can be experimentally shown to be of finite extent, and to contain only a finite number of stars. In the whole sky an eye of average power will see about 6,000 stars, as I have just said. With a telescope this number is greatly increased, and the most powerful telescope of modern times will show more than 60,000,000 stars.