ADVENTURES IN A CAVERN.

The Rush that Followed the Burning of a Red Light—A Bird Lamp—The Famous Bird Cavern in the Island of Trinidad.

"Yes, I'm back again," said a famous curiosity collector and naturalist to a SUN reporter, "and, like Sindbad, I've sworn off for good this time, though I expect the wandering fit will come over me again in a few months. It's a curious phase of things that makes a man undergo all kinds of deprivations and find his way into unheard of and out-of-the-way places when he might just as well remain in New York and enjoy the luxuries of life. Yes, there is enjoyment in the excitement of expectation, especially when it is in the direction of discovery. On my last trip I spent most of my time in the northern countries of South America, and brought back bird skins, fishes, and other material, with a number of things that are new to the general public.

"Birds are my specialty, and, speaking of birds, here is a little fellow that occasioned me considerable trouble first and last. No, it isn't much of a bird, but what it lacks in size it makes up in numbers. In South America it is called the guacharo, and scientifically *Steatornis caripensis*. It is related to our nighthawks that go prowling around with the bats."

The stuffed bird was about the size of a pigeon, and had a long, heavy, broad, hooked bill, and was of a brownish chestnut color, marked with indefinite black spots.

"When I first heard of the bird," continued the bird man, "I was travelling in a mountainous part of Colombia, and one night when I halted in a native village they gave me some strange dish, cooked in oil. Curious to know where they obtained oil, I asked a native, who said it came from the oil bird or Guacharo. He furthermore gave me to understand that the birds were not unlike bottles of oil; all you had to do was to put a wick in their mouths and light it, and you had a lamp. The native had never seen the bird himself, he said, but bought the oil from another man, who belonged to a tribe away up in the mountains, and brought it down twice a year.

"You may be sure I inquired about the Guacharo of all the natives I met, and finally I came across a little village where the people knew about it. One man promised to take me where I could find the birds, but he was very reluctant about it. According to him, the birds were of ill omen, and never came out of their hiding places in the daytime. He said that they lived in the ground, and that men who had gone after them never returned.

"That settled it with me, and when I doubled my first offer, he put aside all scruples, and in two days we were off into the interior. At the end of two days we gave up our mules and began cutting and smashing through the worst country for travelling on the globe. The forest was absolutely impenetrable. In some places the lianes or vines formed a perfect wall that had to be cut through unless long detours were made. I was tempted more than once to give it up, but we kept on, and finally, after nearly a week's work, reached the mountains, among which the birds were supposed to live. Our camp was formed at the foot of a low cliff, against which huge boulders were piled; the tent was formed of boughs thrust into the ground and pain leaves thrown over the top.

"I remember being down at dusk, being tired out. I must have fallen asleep directly, as I was awakened by the native grasping me by the shoulder. I started to my feet, thinking that I had either gone mad or was dreaming. It was dark, and all about us there was the most terrific roaring and screeching mortal man ever heard. The only thing I can compare it to is a hurricane, without the wind. Now there was a wild roar, then a weird shriek, followed by a low moaning that grew louder and louder, until it reached an awful climax, and then a shriek, to return again and again. I can hear it now," said the naturalist, taking out a highly colored Spanish bandanna, "and it makes me warm to think of it. Well, I was paralyzed for about a minute, and the native was simply knocked out of time, but I grabbed him, and in a moment he gasped out, 'Guacharo.' Then it came to me that we were among the birds, and, picking up my gun, I fired at random directly up. Several birds fell within a few feet of the shot. The birds actually filled the air in countless thousands. You may have seen the great pigeon roosts in Kentucky, where they break down big trees. Well, this discounted the pigeon roosts in every respect. I thought at first I couldn't stand it, but I sat up until 4 o'clock, and then the noise let up and the birds disappeared in some almost miraculous manner. The birds I shot told the oil story at once. They were so fat that the oil could be fairly squeezed out. I took an old piece of flannel and proved the truth of my story then and there by thrusting it into the bird. It readily lighted and gave a clear blue and yellow flame.

"I suspected that the birds were like bats, living in caves, and that we had camped in close proximity to such an underground roost. During the rush I had imagined several times that I heard a rumbling sound under foot, and I was correct, as was proved the next day, when I found about 300 feet from the camp the entrance to a cave. Our camp had been right in the path of the birds, which rushed out every evening at dusk. The cave entrance was about twenty feet across and covered with feathers and guano. I tell you it took nerve to go in, but arming ourselves with clubs and lighting material, we pushed our way for some twenty yards in. It was easy enough, but then the path suddenly turned abruptly downward, changing our direction, and a walk of 100 feet led us into a large hall, perhaps 150 feet high. Up to this time I had only used a small bull's-eye lantern that I always carried, but as we saw no birds I thought I would have an illumination, so I set off a red light. Well, sir, there came such a thundering scream and volley of echoes that I thought the whole Andean chain was falling on us. The native went down as if I had shot at him, and I felt like following suit. In fact, I did fall flat a moment later to avoid the rush. The light showed a most astonishing spectacle; every crevice of the wall was filled with birds and nests. As the birds flapped their wings the entire cave seemed waked with them, while the air became every moment more densely filled, so that, as I said, I was forced to lie down and press my fingers in my ears. They dashed at us through the light, striking with their wings. At first I looked them down by the score, but a regiment of men could not have fought against them, so I literally lay low until the bird storm blew over.

"We sat there over an hour before we ventured to move, and then, the native refusing to go, I pushed further in, and saw that the cave was a monster breeding place for the birds. Their rushes at us were evidently to protect their young, and, though it seems incredible that so small a bird could endanger a human life, I have no doubt that they would beat a man down if he stood up, and confuse him so that he would never get out, and I understood that the story told me about men who had gone in the caves and never come out alive. We had to turn back, so I returned to the native, who was demoralized, and we made our way out into daylight, thankful to escape."

"Did you get a young bird or a nest?" asked the reporter.

"I'm ashamed to say I did not," was the reply. "We actually did not have the courage to alarm the birds again. They could only be secured by scaling the sides of the cavern, and I haven't the slightest doubt that they would have knocked us down. This is the only specimen I secured in the cave. It was one that I killed with the club, and, with those that had been shot the night previous, constituted the entire haul of a long and tedious trip. However, I was satisfied, and saw all I wanted of the Guacharos.

"I learned later that there were other localities equally famous, where the natives, five or six hundred in number, made yearly attacks upon the birds, killing thousands of them. A famous cave is at Trinidad, and is called the Cueva del Guacharo. The natives there are equally superstitious, and the time they enter the cave is at the festival of St. John. They have a saying, to go to the Guacharos is to join one's fathers to die. The Trinidad cave enters a vertical rock. The opening is 80 feet in height and 70 feet wide—an enormous door leading into the earth through which runs a river that disappears no one knows where. The scene in this cavern during the invasion of the Indians is most weird, with the rushing of the mysterious river, the fierce cries of the birds, the yells of the natives as they strike down nests and young birds with long poles, and the gleam of the torches. To add to the strangeness of the place, the seeds which the birds take into the cave sprout and grow in the dark, but are pure white; are, in fact, etiolated—the very ghosts of plants. Only the young birds are taken, and the fat is tried out, making a clear transparent oil, that will keep for a long time, and is used for cooking or to burn. So superstitious are the natives that they will not penetrate the cave beyond a certain distance, where the river sinks into the earth, so the birds are saved from extinction, many nesting in the innermost recesses."

A FEW WONDERFUL TREES.

The "Kit Carson tree" on the ranch of Henry Kellogg, near Las Animas, Colorado, is 46 feet 3 inches in circumference two feet from its base.

A pine tree in Irwin county, Ga., has two distinct bodies but only one top. The trunks grew out of the ground about five feet from each other, but at forty feet grew into each other, making one tree, with one top.

The walnut tree which served as a whipping post where deserters and Tories were punished during the Revolution, still stands near Fishkill. The iron rings to which the culprits were tied while being whipped are hidden by the bark that has grown over them.

A buttonwood that was a vigorous tree during the Revolution still stands on the farm of George Sauger, Canterbury, Conn. It is seventy feet high, the trunk measuring sixteen feet in circumference two feet from the ground, and is the same size around twenty-five feet above. Nettle the branches first project.

PROF. RITCHEL'S AIR SHIP.

The Power of an Air Screw to be Utilized—The Assistance of Gas Not Declined, but the Subtile Hydrogen to be Made a Close Prisoner—No Throwing Away of Ballast.

Prof. C. F. Ritchel of Bridgeport, the inventor of a flying machine and projector of a new "air ship" that is exciting much interest, is a large man, sturdily built, has sandy-brown hair and beard, wears ordinarily a serious and somewhat preoccupied air, and in speech is prone to be rather impetuous and excitable when talking about inventions, which are the engrossing subject of his thoughts. He has been an inventor since boyhood, and has a number of patents. A reporter of THE SUN found Prof. Ritchel in his workshop, filing and hammering at a little model, which he laid down reluctantly, but soon seemed to forget in his interest in his "air ship."

"I regret," he said, "that anything has yet been made public concerning it, as it has not progressed beyond the model stage, and I would like to have it further advanced before challenging scientific investigation of its merits and the soundness of my theories upon which its plans are based. Inasmuch, however, as an incomplete and inaccurate publication concerning it has been put forth, the effect of which I fear will not be to win for my invention that serious consideration which it deserves, I have pleasure in giving you such full explanation as will show to practical students of aeronautics that my air ship is worthy of attention, and is not simply the evolution of a crank. I do not regard it as, or claim for it that it is, a perfected invention, but I do claim that it is a step further in the science of ballooning than has been taken in the past 200 years; that it will demonstrate the value of a very important fact that I claim to have discovered in my experiments with my flying machine; and that it will put in the hands of practical aeronauts such means for the acquisition of knowledge in the matter of wind currents and the only practicable methods of aerial navigation as have never before been enjoyed. When my new air ship is completed, I intend to take it to some inland city—Chicago, Cincinnati, St. Louis, or Indianapolis probably—and there make an ascension with it, and remain up for twenty-four hours at one time, at different altitudes, rising and descending at will from one current to another.

"Upon the ability to do that all the hopes of aerial navigators must be based. Human ingenuity cannot invent nor can human power control any force that will enable a balloon or air ship of any form to contend even with a gentle breeze, to say nothing of a strong wind or a gale. But, if we can remain up as long as we wish, ascending to higher currents without the loss of ballast, descending to lower ones without the sacrifice of gas, and choosing where we will float, the tremendous forces of the air may yet be made our servitors.

"Now for a practical and accurate description of the machine by which I propose to accomplish this. The lifting power will be a cylindrical hydrogen bag 85 feet long and 35 feet in diameter, the cubic contents of which will be about 81,770 feet. In practice we find that pure hydrogen gas will give us a lifting power of 70 pounds to the cubic feet of gas. More is claimed, but that is all that can be depended upon. Common carburetted hydrogen—coal gas—can only be relied upon for half as much. I propose to use as pure hydrogen as I can make, so I may safely calculate upon the lifting power of my balloon being about 5,670 pounds. The hydrogen bag will be made of Scotch gingham coated with Vulcanized rubber by a peculiar process that renders it as durable and impervious as any fabric can possibly be. I have tried it already, thoroughly, in my flying machine hydrogen bag, and know that it meets all the requirements better than anything else. You would be surprised to see how tough it is. A strong man can hardly tear it. The oil-soaked cotton stuff commonly used for balloons is heavy, accumulates moisture frightfully when passing through clouds, and soon becomes rotten, by reason of the acid known as aerolein which is developed in the linseed oil by heat and light, and which quickly destroys vegetable fibre. All these are very strong reasons why the material I have selected is vastly superior, especially when it is borne in mind that I have no vent to my hydrogen bag, which must be strong enough to bear any increase of pressure by reason of increase of volume of the gas at greatly increased temperature or at very high altitudes. When the bag is once filled its only opening will be secured by a screw cap, and thereafter the only gas lost will be what works its way through the bag—necessarily very little.

"Worsted bands, two inches wide, instead of netting, will be used to sustain the car, thereby avoiding the chafing and cutting of the cylinder by the thin, hard lines and knots of a net. The car will be simply a sort of deck, as long and wide as the hydrogen bag, pendant from the worsted bands on a level beneath the bag. In, upon, and beneath the deck, however, are the great features of my invention. Let us look at it from this standpoint and see if I can make clear to you its somewhat complicated construction. Primarily, here is a floor to walk on six inches in width, extending all around it, and another two feet wide, running through its centre from end to end. All around it, rising to a height of thirty inches, is a truss construction to give rigidity to the frame and, incidentally, to keep people from tumbling over the edge. Under the wide central flooring is another truss formation, to still further increase the strength of this part upon which the strain of the machinery will come. All this will be of white ash, the wood at once lightest and toughest that I can employ, and the joinings at the corners will be boxed in brass castings to hold the parts together. All, of course, will be made as light as possible, consistently with strength. All around the edge thin semicircular hoops of ash will serve as a springy support for the car when resting on the ground and keep its machinery from damaging contact with the earth. Between the strips of ash flooring will be stretched a light but strong net of vegetable fibre, to prevent people from falling through—a thing to be guarded against when one is up a mile high.

"Beneath the floor there are two lines of frames, one on each side of the central floor, each frame being 16 feet long and 2 feet wide, and made of Stubbs's steel wire and covered with material such as the hydrogen bag is composed of. These frames are arranged like the slats of a Venetian blind, and, like them, can all be opened or shut together by a steel rod and lever at one end of the deck, those on each side working independently of the other. The blind-like construction extends the whole length of the deck. When the air ship is ascending these blinds will be opened, so that the resistance to the air will be reduced to a minimum, and in like manner, when rapid descent is required, they can be thrown open, but when the desired altitude is attained they will be closed. Their use will be readily understood, particularly when they are considered in connection with the raising and lowering machinery next to be viewed.

"In that central floor, you will observe, are five wheels, equidistant in a line along the middle of the car, each fitted with two cranks for operating it by hand, and all connected by bevelled gearing with a hollow steel shaft, twenty feet long, which runs on bearings, and is not in one piece, but in several pieces united by universal joints to allow for any motion or change of level in the deck supports of the bearings. The multiplying gear of those wheels, on the shaft, will give it 1,200 revolutions per minute, and the multiplying gear connecting the shaft with the horizontal fan wheel below will give to the latter a speed of 2,400 revolutions per minute. The fan wheel will have four blades, set at an angle of thirty degrees from the horizontal plane, and their united surface area, the diameter of the wheel being three feet, will be 784 square inches.

"Here, now, is a most important subject for consideration, namely, the immense superiority for effect upon the atmosphere of a small wheel revolving at great speed over a large wheel revolving at a lower velocity, something that I believe I fully demonstrated in my flying-machine experiments. Other inventors have invariably used large wheels. Louis Napoleon subscribed very liberally to the construction of a French flying machine which had two wheels, each twenty-four feet in diameter. Those were the largest I have ever heard of in this sort of machinery. Of course, the mechanism to drive such enormous wheels had to be proportioned to them, and when the thing was built it was so cumbrous and heavy that nothing could be done with it. On the other hand, recall to your remembrance the small wheel I had on my flying machine. It was only fourteen inches in diameter, and one man of ninety-six pounds weight used to run it up to 2,000 revolutions per minute. Hundreds of times, before thousands of people, he has shown, in the Boston Music Hall, that when the hydrogen in the bag was only sufficient to just keep him on the stage, without power to raise him and the machine, he has loaded the machine with fourteen pounds of lead, and by the revolution of that little fan wheel worked himself up to the ceiling of the hall. In other words, it was the fan wheel that raised the 14 pounds of lead, equivalent to the lifting power of 200 cubic feet of pure hydrogen gas. That was something never before done to demonstrate the power of the screw in the air. My experiments have proved to me that there is no such thing as making a vacuum by the action of the screw in the open air, however rapid may be its revolution, but that the more rapid the revolution, the greater the effect.

"Now, then, on the basis of the same lifting capacity already demonstrated, I calculate that the fan men I will have to operate those five wheels will exert a lifting power equal to that of 2,000 cubic feet of pure hydrogen, or say 150 pounds, without any extraordinary exertion, and with the ability to double that in any great emergency. But I do not expect them to work all the time, or, indeed, to work so much to lift the airship as to depress it. I propose to have a surplus of gas in the hydrogen bag, so that their work will be rather to keep it down without losing gas, than to lift it up without throwing out ballast. Suppose when the air ship is up she strikes a cooler temperature, the gas contracts in volume, and, its lifting capacity being reduced, she begins to go down. At once the shutters are closed, the wheel is set in operation, and the immediate effect will be that of putting 2,000 more cubic feet of gas into the bag.

"As I said, the lifting capacity of the hydrogen bag will be, as I calculate it, about 5,670 pounds. The weight of the cylinder and bands supporting the car will be 1,200 pounds; that of the frame and machinery, 1,500 pounds, and of the men to operate it, 1,800 pounds, which will leave a margin of 1,170 pounds. Perhaps, however, I can get it down still lighter.

"I cannot say how long it will be before I get the air ship built, as I have business of immediate and practical importance requiring my present attention, and cannot really afford either the time or the money to push it forward at once. My experiments in aeronautics have cost me already more than I can well afford, and unless some person interested in this branch of science helps me along a little, the air ship will have to wait for a more auspicious season. But I am sure that I am right, and that when my air ship is built it will mark an era in the world's progress toward the solution of that ever-tempting but most difficult problem, the navigation of the air."

A GREAT STRUGGLE AT PRINCETON.

After Being the Under Man for Half an Hour—The Freshmen Carry Sternburg to the Cannon on the Campus and Sing Over him.

"I've seen prize fights, dog fights, cock fights, and rat fights," said a Princeton student on Tuesday evening, as he adjusted his knitted brown college cap to his closely cut, tow-colored head, "but I have never seen a better test of muscle and endurance than one of our preliminary cane sprees. The man who can cross two of these trophies on the wall of his room, tying them together with his society colors, has an immense prestige during the rest of his college career, and commands the respect of students and professors afterward. Better see the cane spree to-night between representative sophs and freshs. You can't see a better thing here in a year."

Rivalry between the present freshman and sophomore classes has run high, though but little hazing has occurred. The freshmen guarded the cannon which is embedded in the college campus very closely during the early part of the year; but one day the sophomores rallied in force and preserved the college tradition by painting it a bright green and decorating it with "Fresh, 1887," as indicative of their contempt for the freshman class. One day the freshmen rallied in turn, surrounded the cannon, and, presenting a firm front outward to the sophomores, burned off the paint. Then the sophomores placed the opprobrious epithet, "Fresh, 1887," wherever they could find an available point on fences, billboards, hitching posts, and at lofty heights on buildings and telegraph poles. With the expenditure of much time and labor, the freshmen carefully removed the inscriptions.

When the sophomores learned that a New York photographer was coming over to picture the freshmen they were happy and kept a vigilant watch over members of the other class. At last, with both flanks guarded, the freshmen were posed in picturesque attitudes, with a stone building for a background. But the irrepressible sophomore had invaded the building and suspended an immense placard by a cord from an upper window, so that "Fresh, 1887," appeared on the class picture. Another attempt was made, and this time the rear was successfully guarded from approach by the sophomores. But they met the emergency from another quarter, for with mirrors they threw dazzling jets of sunlight into the faces of freshmen in various quarters of the group, with disastrous effect on the picture.

The annual proclamation of the sophomores was more pronounced than usual. The incoming class was compared to the animals entering the ark, and the university was illustrated by numerous puns on the names of individual members, for which there happened to be unusual facility. The freshmen were warned that, being children, they must not be seen with those 'Blight' sophomores, dated, before Jan. 1, 1884. As the sophomore was the larger and physically the stronger class, there have been few violations of this edict, and these the sophs have made the subjects of rigid discipline. Unusual interest centred in the preliminary cane spree on Tuesday night between men from the two classes.

A full moon lighted up the portion of the college campus in front of Witherspoon Hall and in the rear of East College and Reunion Hall with long shadows cast by the elms, ideal for the spree. Boisterous, rollicking, and jostling, they swarmed into the campus from every quarter. The freshmen gravitated together and began singing, "Way Down on the Bingy Farm," but the sophomores few yards away drowned them out with a chorus of the college yell, which, well organized, is generally sufficient at 12 o'clock at night to awaken every resident of Princeton. "Rah—Rah—Tiger—Siss—Boom—ah!" was thundered again and again, and it was evidently effective.

Suddenly a group appeared, armed with some mysterious authority, and quickly formed the students into a ring, about 100 feet in diameter. The men at the front locked their arms together, and braced firmly against the pressure from the rear. Few of the less skilled students in the college were absent. Sophomores were grouped on one side and freshmen at another. Three men approached with slow step from one of the buildings, and were permitted to get in the ring to hold the parts together. All, of course, will be made as light as possible, consistently with strength. All around the edge thin semicircular hoops of ash will serve as a springy support for the car when resting on the ground and keep its machinery from damaging contact with the earth. Between the strips of ash flooring will be stretched a light but strong net of vegetable fibre, to prevent people from falling through—a thing to be guarded against when one is up a mile high.

The contestants were the two lines of frames, one on each side of the central floor, each frame being 16 feet long and 2 feet wide, and made of Stubbs's steel wire and covered with material such as the hydrogen bag is composed of. These frames are arranged like the slats of a Venetian blind, and, like them, can all be opened or shut together by a steel rod and lever at one end of the deck, those on each side working independently of the other. The blind-like construction extends the whole length of the deck. When the air ship is ascending these blinds will be opened, so that the resistance to the air will be reduced to a minimum, and in like manner, when rapid descent is required, they can be thrown open, but when the desired altitude is attained they will be closed. Their use will be readily understood, particularly when they are considered in connection with the raising and lowering machinery next to be viewed.

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LUXURY IN FLAT HOUSES.

Some of the More Conspicuous Flats of the City and Their Occupants—Why they are Sometimes Preferred to Private Houses.

"High priced flats? There are hundreds of them," said a member of the firm of E. H. Ludlow & Co. to a SUN reporter. "Here is a list, and you can find rents all the way up to $5,000 a year."

"Do you mean $5,000 a year for the rent of unfurnished apartments?"

"Yes; and there are plenty of them where the rents are even higher. People who can afford such rents could afford to hire whole houses, of course, and many of them do own houses and lease them to others."

"How do you account for that?"

"The ambitious woman does it—I mean the ambitious woman who does not want the bother of a whole house, or who wants a house in a more fashionable locality than her husband could afford. When land on Fifth avenue costs $40 a square foot, most people who want to live there must get into the upper air and dispose themselves in layers. The fact is that the same accommodations that are supplied in our first-class flats or apartment houses could not be obtained in single houses for anything like the same money. Ground is so valuable that houses must necessarily be narrow. Mr. Vanderbilt paid $100,000 a lot in Fifth avenue. Most people would not have much left to build a house after buying one lot. The chief reason why so many flat and apartment houses are built is because people like to live in magnificent houses. They like striking architecture, marbles and tilings, cabinet finish, mirrors, and bureaus built in, and the thousand and one luxuries that have been developed by the building trades and concentrated in these modern palaces. It is just as impossible for such buildings to be owned by one individual as for one man to have a whole building for his office in Wall street."

"Is there any prejudice on the part of wealthy people against living under the same roof with other families?"

"Prejudice? Why, there are lots of wealthy people who live in flats and apartment houses."

"What distinction do you make between flats and apartment houses?"

"A flat is a suite of rooms on one floor, with arrangements for cooking. An apartment house is one where there are no arrangements for cooking, the occupants of which either go out to restaurants for their meals or have them sent in. Latterly a number of bachelor apartment houses have sprung up in New York, and some of them are gorgeous. There is one in Broadway near Twenty-third street nine stories high, where they charge $1,800 a year rent for four rooms. There you can see a very prominent bachelor, well known on the Polo grounds, in the New York Yacht Club, and in the best society, who has apartments on the fourth floor. It is a little palace, full of works of art, brie-a-brac, and elegant furniture. The house is fire-proof and noise-proof, and the occupant, after he enters his front door, is quite as secluded as if he were in any single house. He is unconscious of the tenants of the remaining eight stories and three-quarters. When he wants to go away he is obliged to leave a retinue of his servants, and he knows that his premises will be securely watched. There is one of these bachelor apartment houses in University place, the rooms of which are splendidly furnished. Some of the rooms are to the estimation of the tidiest housekeeper, and they show that the bachelors know how to secure well-kept houses.

"Gen. Daniel Butterfield introduced in New York the first of the gorgeous first-class flats, in his great venture, 'The Albany.' He was warned that there would be prejudice against that class of house, because they would be called tenement houses. But he said they were no more tenement houses than a hotel is a tenement house, and he put his money into his venture. The result was a financial success, and he demonstrated that there are plenty of people who appreciate the advantages of association in dwellings as well as in business. One reason for the success of the flat, or apartment, houses, is the modern passenger elevator, which has been so generally introduced here than anywhere else. It enables a great many people to live on land worth from $20 to $40 a square foot. It is now not an uncommon thing to find men of considerable means who are glad to live in the social world living in flats of the best class.

Daniel E. Sickles has long lived in a flat in Fifth avenue, near Ninth street, and has his rooms filled with elegant furniture, paintings, and works of art. Superintendent Barton of the Long Island Railroad lives in a handsome flat in Twenty-third street. Isaac Bell and his associates have built 'The Knickerbocker,' Col. L. W. Winchester of the Seventh Regiment had rooms in 'The Bella,' at the corner of Fourth avenue and Twenty-sixth street, owned by Oswald Ottendorfer, and named for his daughter, Lotta, the actress, who owned houses, lived in a flat. Rose Coghlan had a flat in Sixth avenue.

"Lawyers, doctors, bankers, brokers, retired merchants, and capitalists may be found in such apartment houses. Here is an edition of the 'Elite Directory,' and you will see that a goodly number of prominent families live under the same roof with other people. At 'The Berkeley,' Fifth avenue and Fifth street, were recorded Mrs. L. L. Aspinwall, Mrs. William Clark, Mr. and Mrs. William Delano, Mr. and Mrs. R. H. Duncan, Mr. and Mrs. D. E. Evenson, Mr. and Mrs. J. J. Gunther, Mrs. Wayland, Mr. and Mrs. G. W. White, Mr. Willis Graham, Mr. and Mrs. L. L. Hoffman, Mr. Hitchcock, Mrs. Washington Hunt, and Mr. and Mrs. H. B. Hunt. At 'The Grosvenor,' Fifth avenue and Thirty-seventh street, were Dr. F. O. Beach, Mr. E. P. Beach, Mr. and Mrs. C. F. Chickering, Mr. Frisbie, Mr. Gray, Mr. and Mrs. Samuel Jones, Mr. and Mrs. C. W. Oliffe, Mr. and Mrs. Thomas Pearsall, and John Travers, Jr. At 'The Knickerbocker,' in West Fourteenth street, were Mr. and Mrs. Walter S. Appleton, Mr. and Mrs. Walter Cook, Mr. and Mrs. B. Ali Hagen, Mr. and Mrs. Oscar King, Mr. and Mrs. N. R. Leavitt, Miss Rose Mercy, Mr. and Mrs. A. Travers. At 'The Kensington,' Fourth avenue and Fifty-seventh street, were Dr. Frederick A. Castle, Mr. and Mrs. Ed. Weir, Mr. A. H. Dayton, Mrs. and the Misses W. H. Dayton, Mr. and Mrs. C. P. de Forest, Mr. and Mrs. Alfred Douglas, Miss C. Griffith, Mr. and Mrs. F. L. Gunther, Russell P. Hoyt, Mr. and Mrs. G. D. Phelps, Mr. and Mrs. L. J. N. Stark, and Mr. and Mrs. Stoutenberg. At 'The Hamilton,' Fifty-first street, between Sixth and Seventh avenues, were Mr. and Mrs. Cutting, Mrs. M. L. Donnelly, Mrs. Augustin F. Gillett, Mr. and Mrs. Chas. R. Green, Mrs. S. J. May, Mr. J. Halsey Haight, Mr. David L. Haight, Mr. and Mrs. A. J. Haines, Jr., Mr. and Mrs. Jerome Hall, Mr. and Mrs. H. Hall. At 'The Florence,' Fourth avenue and Eighteenth street, were Mr. and Mrs. J. Lawrence Breese, Mr. and Mrs. B. F. Butler, and Mr. B. F. Butler, Jr., Mr. and Mrs. Edward Kemeys, Mr. and Mrs. J. Lockwood Kip, Mr. and Mrs. T. Post, and Mr. and Mrs. Vyse. At 'The Rensselaer,' Broadway and Thirty-second street, were Mr. Albert Burstadt and Mr. Sandford R. Gifford. At 'The Albany' were Mr. and Mrs. Frank G. Brown and U. K. Peabody. At 'The Buckingham' were Mr. and Mrs. Thomas Fox, Mr. and Mrs. J. C. Lewis, Mr. and Mrs. B. Parke, and J. N. Paulding; and at 'The Osborne,' Mrs. Lawrence Waterbury.

"Among the others—some of them more modern, all, therefore, more gorgeous—of such houses, are 'The Vendome,' at Broadway and Forty-first, 'The Burlington' in West Thirtieth street, 'The Gramercy' (the much talked of eleven-story building in Gramercy park), 'The 121 Madison Avenue' (another eleven-story building), 'The 93 Madison Avenue,' 'The Boston,' at Fifty-ninth street and Fifth avenue; 'The Grenoble,' corner of Broadway and Fifty-seventh street; 'The Rembrandt,' in Fifty-seventh street, between Sixth and Seventh avenues; 'The Rockingham,' at Broadway and Fifty-sixth street; 'The Strathmore;' 'The Van Corlear,' at Seventh avenue and Fifty-first street, and 'The Berkshire,' at Fifty-second street and Madison avenue. In this list of building rents vary from $2,500 to $6,000, and the principal owners are societies. It is ten stories high, and cost about $350,000. The lot is 75x100, and there are suites of rooms for two families on a floor. The corner rooms are occupied by the owners. There are two separate passenger elevators for owners and servants, and there is a perfect isolation of the housekeeping paraphernalia from the better parts of the house."

"I call them joint stock palaces," said the representative of Lispenard & Friedman, the agents of the Central Park apartment houses that occupy the block between Fifty-eighth and Fifty-ninth streets, Seventh avenue, and a private street which has been cut from Fifty-eighth to Fifty-ninth street. There are to be eight of them. Four of them, known as 'The Madrid,' 'The Barcelona,' 'The Cordova,' and 'The Lisbon' will be finished by November. They are to be occupied on the plan of the Hubert Home Club, each family owning half a floor. The cost of a suite of rooms will be from $10,000 to $15,000, according to location. The fronts on Central Park command the highest price. The cost to each tenant after purchasing his apartments will be from $1,300 to $1,600 a year for interest on mortgage, taxes, heat, light, laundress, hot water, janitor, and servants. The interest on investment and current charges will make the rent of the tenants amount to say $2,500 a year each, for which the tenant gets a drawing room 16x32 feet, a dining room 18x32, a library 17x22, and nine smaller rooms, comprising in all about 10,000 square feet of space. The group of houses will cost in the neighborhood of five million dollars, and it is estimated that each tenant will have more space, light, and air than could be got in an ordinary private house for many times the same cost. Each of the eight dwellings will accommodate from thirteen to sixteen families. The interior court is arranged for private gardens, through which carriages may drive. The services of trades wagons is done through a tunnel under the yard which reaches the basements of the dwellings. An actual comparison of the space in these apartments with that of new private houses in the vicinity shows that an occupant of a private house twenty feet wide gets but half the surface that the occupant of a suite of apartments gets, while the latter has the advantage of steam elevators, isolation of the housekeeping arrangements, &c., all at one-third the cost of a private house in the same neighborhood. The precautions against fire, and the constant attendance of watchmen, which are costly and unusual in private houses, are a desirable as well as economical feature of the apartment system. The people who occupy these apartments are rich people, who wish the privacy of home together, and at the same time wish to avoid the trouble of housekeeping. They need not be annoyed by their neighbors any more than others whose houses are side by side instead of one over another. They have the opportunity to give parties and have their guests all on one floor. In such flats as 'The Palermo' and 'The Dakota' the occupant commands 10,000 square feet on one floor, and could get up a very good-sized track for a walking match in the circuit of his apartments. To confound such homes with tenement houses is idiotic. Ex-Lieut.-Gov. Dorsheimer, who lives in an elegant flat, recently entertained a company of two hundred in a style that would have been impractible in most private houses. The flats at Fifth avenue and Twenty-eighth street are good enough for anybody to live in. For one suite the rent is $5,000, and it is never empty."

FINE STABLE FITTINGS.

Aristocratic Horses Feeding from Enamelled Troughs—Fancy Work in Brass.

A SUN reporter, on entering a store in Chambers street the other day, saw several clean, bright stalls at the end of the establishment furthest from the door. The sun, streaming through the window, made innumerable bars, scrolls, and odd bits of fancy work in polished brass flash back its rays upon a large painted horse's head and the figure of a jockey, who held an iron ring in his hand. On the walls were large diagrams.

"This," said a clerk, pointing to the largest of the diagrams, "is a plan showing a complete stable yard, with accommodations for twelve horses, and embracing two stables, with four stalls in each, and one stable, comprising four loose boxes; besides these a sink box, washing box, harness room, coach house, fodder room, washing shed, and tool compartment. If a customer likes that plan we can carry it out for him from the foundation to the weather vane. If he wants a smaller stable yard, a single stall, or only a single fixing, we can supply him. Our largest trade is in stable fixings, and we find we can show off our novelties in that line by converting our store into a miniature stable. We have everything belonging to a well-equipped modern stable here excepting a live horse. We've got something like 4,000 styles, for I tell you that no two of you will see those two dog horses' heads. They're figureheads to go over stable doors, or to ornament the exterior of the stable building, like the terra cotta dogs' heads on the Vanderbilt stables."

"I suppose such stalls as these are only for aristocratic horses?"

"That's about it. I can tell you that thousands of horses are better housed than hundreds of thousands of people. There are men who wouldn't give a poor man a cent who will provide every luxury for their horses. We've fitted up stables with brass fittings that would adorn the finest mansion in the land. There's a stable at New Rochelle where every stall has a magnificent pier glass, and the horse can see himself, and beautiful stained-glass windows. Visitors to the place spend most of their time looking at the stables."

"When you say you take orders for a whole stable yard, do you mean that you build it for your customer, as well as fix it up?"

"Yes. We're not builders. We send the order for building to the architect who drew these plans for us. We merely furnish the fixings from our own establishment, though the customer who gives us the order to have one of these plans carried out needn't bother himself with the details of the work. Many customers employ architects of their own to erect stables in the Queen Anne or other styles, and give us the dimensions with a *carte blanche* order to fit up the interior for so many horses. Then we make their estimates of the work when carried out in brass or wood, plain or fancy patterns. When he has decided we go ahead. We like it best when he decides to have the work carried out in brass, because it is in brass that the finest effect is obtained.

"We have seen designs in stall guards—head pieces and sides. They consist of a wire mesh, either diamond pattern or crimped in thick, handsomely polished brass frames. In the head piece here you see a small brass frame. The feeding door moves in that. At the bottom of the stall is a notice, a big broad slab. Sunk in that, direct in a line with the feeding door, is the out manger. Now this manger may be plain, galvanized, or enamelled. It may or may not be connected with a food queen's patent. The latter is simply a contrivance simply of a broad rim running around the manger with holes. Oats which fall on the frame run through the tubes for which these holes are openings back into the mangers. The arrangement effectually prevents the horses throwing out its oats.

"Next to the manger is a sunken pot for cut feed. A new and eminently useful attachment to that is the self-feeder. It consists of a chamber or upper for holding the feed which is put in at the top, a valve to regulate the flow of the feed, and a zinc screen which serves as a shelf from which the horse can feed. This feeder prevents all waste, as the value can be so regulated that the horse receives the grain only as fast as he can eat it—that is, chew it perfectly. A horse can get his full quantity of one quart out of four with this self-feeder. Next to the feeding pot is a water pot, and then comes the hay crib or rack. Some people prefer a crib so that the horse does not have to raise his head to feed. We have, as you see, a fine design for both cribs and racks. The hand-rest, I think, consist of plan brass bars. They have a solid, substantial look, and go so well with the brass bars that frame the stall guards. But we have them in cast iron open work or heavy wire to