

THE QUADRUMANA.

L. P. GRATACAP.

No group of animals has from the earliest days attracted more curious attention than the monkeys. Their grotesque mimicry of man, their innate proclivities to mischief, their unconscious humor, their agility, have drawn to them the interest of the populace, while their structural affinities and their enigmatical relations to the human race have evoked from science a patient study, which, as directed by different motives, leaves the quadrumana today "an vexed question" in the discussion of animal evolution.

The old Egyptians placed their images in their elaborate pantheon, the mystical Hindoos built dwellings for them, the Romans taught themselves anatomy by their dissection, the Arabs looked upon them as the progeny of Satan, the ancient dwellers in Mexico wrought their figures in frieze and ornament, and to-day sight-seers linger longest where, in our menageries, they gambol and chatter; while over their problematic claim to be considered man's lineal ancestors the savants and doctors fight unweariedly. Perhaps the first mention of these interesting creatures we have found among the ancients, and the one most familiar, is in the chronicle of Hanno, the Carthaginian voyager, who visited, over 2,000 years ago, the west coast of Africa. He speaks of finding the "goutlai" on an island, whom he and his men chased, but could not overtake, and at last only secured three females, who bit and scratched their captors so vigorously that they had to be slain, and their skins were afterward kept in the temple of Juno at Carthage. Hanno speaks of these strange inhabitants as wild men, with hairy women, and he doubtless met a colony or pack of anthropoid apes.

Pliny writes: "On the Indian Mountains to the south, in the land of the Cathareudi, there are satyrs. These are the swiftest of creatures, sometimes going on all fours, sometimes upright like men, and they are so active that they can only be captured when old or sick."

In the past geological stages of the earth's history, monkeys were much more widely distributed than today, and among the forests of France and England they flourished in nimble groups, where now only careful protection insures their immunity from decline and death. The quadrumana belong to the warm regions of the globe. They live chiefly within the tropical limits, though reaching northward from Africa into Europe at Gibraltar, where a Urcaque has effected a settlement among its rocks and ledges; and again another species in Asia has extended its habitat to Japan, while as an extra limital example they reach in South America to Paraguay. They are all included, without exception, between 37° north and 35° south latitude. They exhibit the greatest fortitude under colder conditions upon the mountain sides of their natural domains, and are occasionally met at elevations which are surprising.

A species does not cover a wide geographical area, but is distinctly limited. The orang-outang is found in Borneo and Eastern Sumatra; the chimpanzee and the gorilla on the west coast of Africa;

the tailless gibbons upon the Bay of Bengal, in Sumatra, Java. Among the Semnopithecii, as Sir Emerson Tennent says (quoted by Murray), "each separate species has appropriated to itself a different district of the wooded country, and seldom encroaches on the domain of its neighbors," being found in Ceylon, India,

be discovered. The New World monkeys spread over a wider territory and furnish the greatest number of mammalian species within their region, the mammalian fauna of South America being singularly meager and homogeneous.

The natural home of the monkey is among the trees.

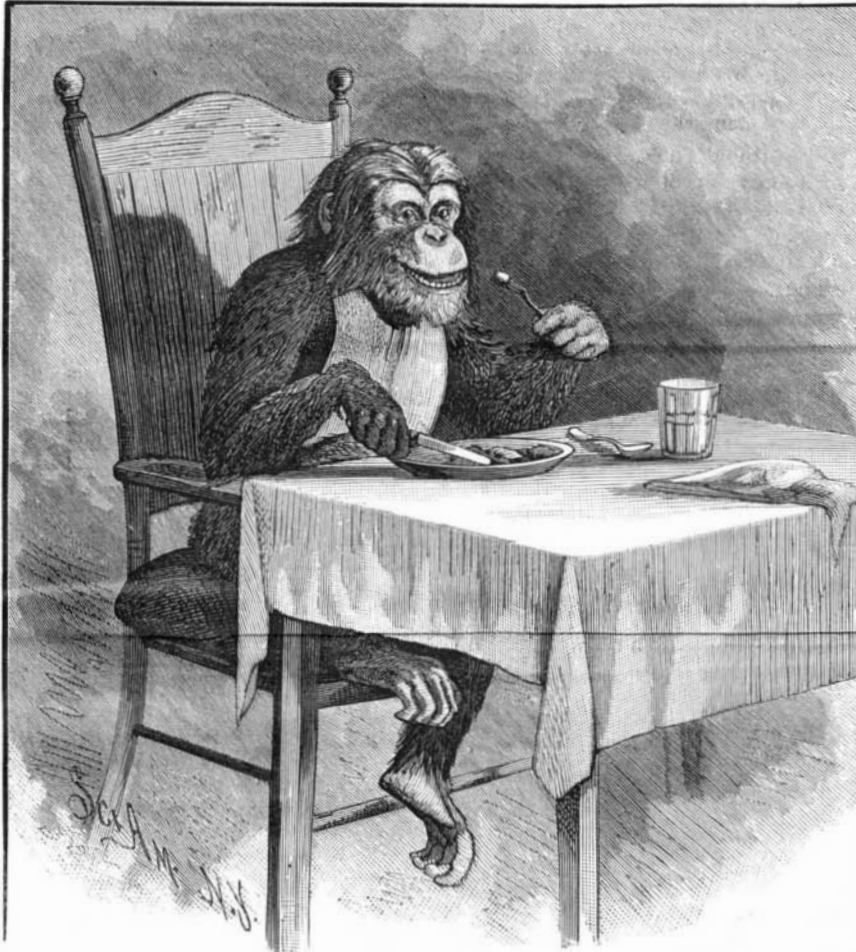
Here he leaps with a buoyant delight that defies description or portraiture, swinging, hanging, with innumerable gesticulations and grimaces he passes from bough to bough, and will traverse long distances in this way with a grace and ease that has been the admiration of writers and artists, whereas, when put upon a level ground, his slow, aimless, and ungainly movements only excite ridicule and disgust.

The technical definition of the quadrumana, or the four-handed (*quatuor* four, *manus* hand) animals, is easily understood and remembered. They form the thirteenth order of mammals, are comprised with man among the primates, and are distinguished by having the innermost toe of the hind limb separated from the other toes, and is opposable to them, so that the hind feet become prehensile hands, the innermost toe of the fore limbs (thumb), if present, also usually opposable to the other digits. The and left, and the molars similarly four. The divisions of this order are very natural, and, as pointed out or defined by Owen, are: 1st. The Strepsorhina or twisted nostril group, including the true lemurs, centering in Madagascar. 2d. The Platyrrhina, or group with nostrils placed far apart, thumb of fore feet, if present, not opposable to other digits, embracing solely the South American monkeys. 3d. The Catarrhina, with nostrils oblique, close together, thumbs all opposable; the highest section, among which are placed the anthropoid apes, without tails; while in other members of this section this member has lost the prehensility which among the Strepsorhines and Platyrrhines makes it the most efficient instrument for locomotion.

It would be of interest to review even briefly some of the characters of the attractive lemurs, whose haunts are in the fruit-laden forests of Madagascar, where in the deepest seclusion they form their bands and move

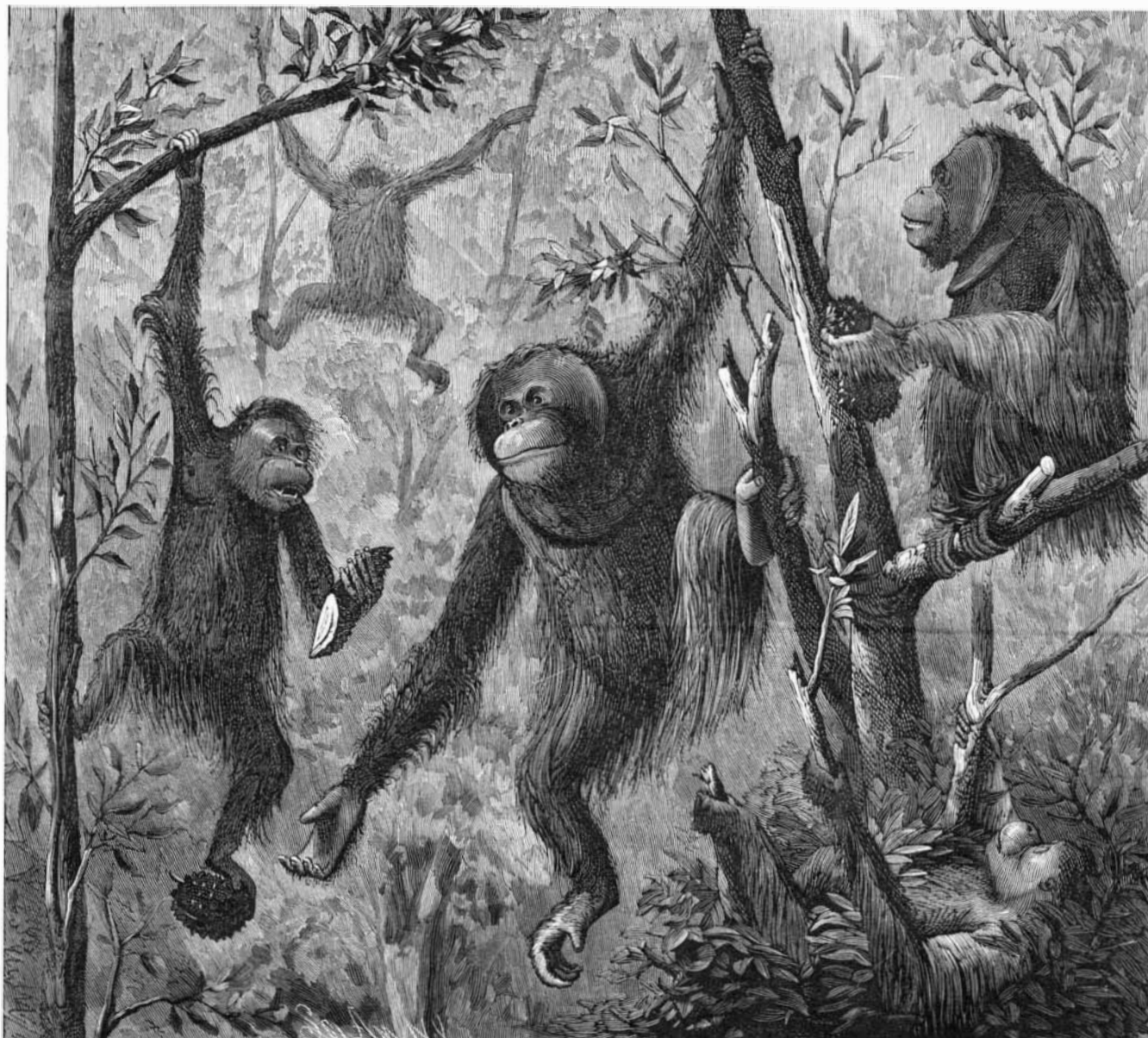
with gliding and noiseless activity among the highest branches; or describe some of the singular spider monkeys, howling monkeys, capuchins, and squirrel monkeys of South America. But we must attempt to explain the state of that interesting question asked so commonly, Have we come from monkeys? and then acquaint the reader with some facts about the chimpanzee and the orang-outang, whose admirable portraits accompany this notice. To make even these points intelligible may exceed our limits.

The question of the origin of the human race has attracted attention for ages, and naturally it was long ago suggested that some connection between men and monkeys might be discovered leading to more distinct ideas on this subject. Darwin epitomized the views of earlier investigators, and added many new lines of fertile study and suggestion. Structurally, men and the quadrumana belong to the same order—the primates; and it is insisted that thi



MR. CROWLEY, OF CENTRAL PARK MENAGERIE, N. Y.

etc. The baboons and mandrills are generally peculiar to Africa, though aberrant forms are found upon the Philippine Islands. The New World monkeys are confined almost altogether to South America, though some species penetrate the northern continent as far as Tampico, and naturalists are yet expectant that in unexplored recesses of Central America new species may



THE ANTHROPOID APE AT HOME.

structural resemblance predicates a similar structural origin or some common progenitor. The popular misapprehension that writers holding this view suppose that man is a lineal offshoot or child, through intermediate links, of our anthropoid apes is quite unjust to science. Our physical frame is most heterogeneously, so to speak, allied to the entire monkey race. We can claim, anatomically, no direct descent from any known species. As Urwart says:

"Some of the lower apes resemble man more than they do the anthropoid ones in the length of the arm and hand compared with that of the spine; while in the length of the leg without the foot, compared with that of the arm without the hand, he is equaled only by certain lemurs. The baboons (the lowest of the anthropoids) exceed all the higher apes in resemblance to man in the sigmoid curvature of the spine," and in many other particulars, unnecessary to mention here. Some, indeed, of the New World monkeys approach man in some respects nearer than the Old, and again and again it has been shown that the child monkey is nearer the child man than the adult monkey is to the adult man—a significant divergence through age. In fact, the aggregate features of the human frame, when compared with their closest correspondences among the quadrumana, establish between man and these a network of intercrossed relationships.

Hence the proposition is, that man has issued from the group of the quadrumana genealogically at some far distant period, and descended from a creature whose physical constitution had begun a variation which resulted in a line of descent of which man, as at present made, represented the climax. At the same time the close likeness of the anthropoid apes to man is very obvious, and some recent cases of hairy and tailed men might be regarded as *reversions* to a simian ancestry. However, the proposition cannot be, or has not been, absolutely proved. It rests upon an inherent probability based upon a study of evolution in other branches of animal life, and is bound up logically in what has been called the *monistic* view of creation, viz., that a single impulse at a moment of time, however it may be regarded, has started a vital growth in nature, which, progressing and widening under the control of fixed laws, peopled the world with all its past and present inhabitants without invoking at any moment, in the long train of sequences thus inaugurated, any special act of creation. Naturally, man is but one, though the highest, of the occupants of this globe, and is subjected to the same law of origin.

Was war ein Gott der nur von aussen stiesse
Im Kreis das All am Finger laufen liesse,
Ihm ziemt's die Welt im Innern zu bewegen,
Natur in Sich, Sich in Natur zu hegen,
So dass was in Ihm lebt und webt und ist,
Nie Seine Kraft, nie Sein Geist vermisst.—Goethe.

So far as regards man's physical characters, his psychic part is less easily to be imagined as derivative from the brutal and sensual disposition of the quadrumana. As Hartmann says:

"A great chasm between man and anthropoids is constituted, as I believe, by the fact that the human race is capable of education, and is able to acquire the highest mental culture, while the most intelligent anthropoid can only receive a certain mechanical training."

The anthropoid apes are the gibbons, gorilla, orang-outang, and chimpanzee. The orang-outangs, of which an admirable group, mounted by Mr. Hornaday, the hunter and writer, is now in the American Museum of Natural History, and is shown in our artist's vivid drawing, inhabit the islands of Sumatra and Borneo. They live in the dense forests in the low, swampy districts, traveling with considerable speed through the summits of the trees, and avoiding the drier hill country. Their name simply means *woodman*, indicative of their habits. They are hunted by the natives and sold to the Chinese. They inhabit the topmost parts of the trees, making rude and shallow cradles of leaves and twigs, in which they sleep, rising from their beds at 9 A.M. and retiring at 5 P.M. Except at night, they seldom descend to the ground. Their gait is awkward, and they display none of the agility of the chimpanzee or gibbon. Their long arms are possessed of great strength, and amid the durion trees, whose fruit they love, they can be seen performing feats requiring great muscular strength. As many as four species have been enumerated by some writers, and only one by others. Those figured in our illustration are not commonly, or not at all, seen in books. The fleshy disk in the male is a striking feature, and would seem to justify a specific distinction. They are slow, inert, and generally timid, but in close quarters, or thoroughly aroused, fight with ferocity.

The chimpanzee inhabits the west tropical coast of Africa, and is a species made familiar to our public by the general favorite, Crowley, under care of Mr. Conklin, at the Central Park Menagerie. This interesting fellow has divided with Jumbo the favors of popularity, and certainly with his antics and devices affords capital amusement to the sightseers who throng about his cage.

The disposition of the chimpanzee under captivity varies greatly, some being recorded as gentle and uniformly amiable, others uncertain, capricious, and vio-

lent. Mr. Crowley's expression of face is very rueful at times, and changes from a laughable state of lugubrious contemplation to one of whimsical curiosity in the appendages and property of his visitors. With his keeper, Mr. Cooke, he seems generally mild and loving, but his malice breaks out occasionally against some teasing spectator, and he bounds and rages with impotent struggles, suggesting very unpleasant consequences if the offenders were within his reach. He has been taught to use a spoon, and sits in a most comic manner at a table with a gravity and absurd aspect of comfortable retirement that is irresistible.

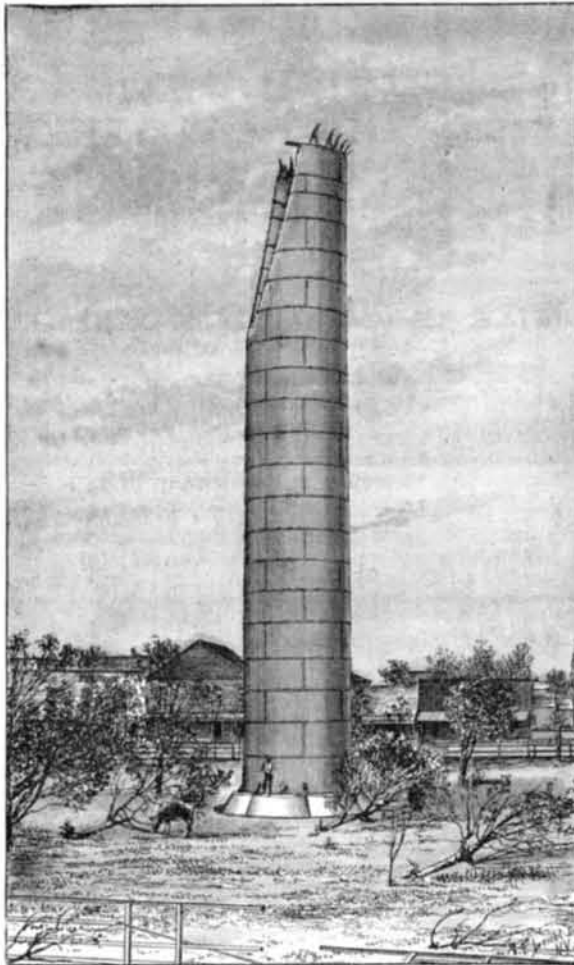
The gorilla has been successfully kept in captivity in Berlin at the Aquarium, and gained an excellent name for friendliness and docility. A famous specimen kept there died of galloping consumption in 1877. The chimpanzee Urafuca was also an inmate of the Berlin Aquarium, and was greatly prized for her gentleness and general amiability. Of her death, Hartmann writes:

"She put her arms round Schopf's neck when he came, to visit her, looked at him placidly, kissed him three times, stretched out her hand to him, and died."

The real pathos of this incident, more than a hundred tales about monkey cleverness, would reconcile us to acknowledging a relationship with these remarkable creatures.

THE WATER TOWER AT VICTORIA, TEXAS.

We are indebted to Mr. R. W. Stayton, of Victoria, Texas, for photographs of the water tower at that



THE WATER TOWER AT VICTORIA, TEXAS.

place, together with the following interesting particulars of its partial collapse:

"On the 20th of August this place was visited by a very severe cyclone, the wind reaching the velocity of about 80 miles per hour. We have a system of water-works with a reservoir or standpipe 16 feet in diameter and 100 feet in height; the iron is one-half inch thick for the first 70 feet and three-sixteenths inch the remaining 30 feet. This pipe was erected with all the care and skill used in the construction of a steam boiler. During the storm this pipe was swayed to and fro, and the sides swerved in and out like some huge animal striving for breath, and finally collapsed as you see it in accompanying picture. The question among some of us is whether this collapse was induced or caused by the vibration or by the creation of a partial vacuum from the violent wind passing over the top exhausting the air within, having nothing within to withstand the outer pressure, there being only 70 feet of water in the pipe at the time. I claim that the collapse was caused by the wind creating a partial vacuum, and others claim that it was caused by vibration alone. The upper edge of pipe, just where the points of iron are riveted on, is re-enforced by a heavy angle iron. I send you three different views of the standpipe."

In reply to our correspondent, we would say: The collapse of the standpipe seems to have been on the side from which the greatest pressure of wind occurred, as by inspection of the photograph the trees near the standpipe, which were probably overthrown at the

same time as the collapse, all lie in one direction, and that coincident with the direction of compression in the standpipe. From our inspection, the tornado was not central over the standpipe, but far enough on one side to give it the full force of its gyration. This in our opinion precludes the possibility of a vacuum being the cause of the collapse.

The thinness of the iron, three-sixteenths inch, and its great proportional area exposed to the force of the wind, will no doubt readily account for its swaying, buckling, and final collapse, if we only take into consideration the force of the wind in pounds per square foot of exposed area.

Tornado winds blow at a rate of from 90 to 100 miles per hour, and exert a force of from 40 to 60 pounds per square foot of area.

The mean area exposed above the water line, all of only three-sixteenths inch iron, may safely be taken at 300 square feet, which at 40 pounds per foot would amount to 12,000 pounds, or 6 net tons pressure on the windward side, with no support on the inside; while the leeward side was supported in tension by the small partial vacuum of a lee wind, which is equal to the slight vacuum or draught caused by blowing across an orifice, as the other parties claim. We are confident that lateral pressure caused the collapse of the standpipe.

DECISION RELATING TO PATENTS.

U. S. Circuit Court.—District of Connecticut.

CELLULOID MANUFACTURING COMPANY v. COMSTOCK & CHENEY COMPANY.

HYATT PATENT—CELLULOID COVERING FOR PIANO KEYS.

Shipman, J.

It has always been the law that a patentable invention, although new and useful, must be the result of something more than and different from mechanical skill.

The existence of novelty and utility in a patented thing has been potent in the determination of the question of its patentability. (*McCormick v. Seymour*, 2 Blatchf., 240; *Furbush v. Cook*, 2 Fisher, 288; *Middleton Tool Co. v. Judd*, 3 Fisher, 141.)

The decision in *Hollister v. Benedict & Burnham Manufacturing Company* (113 U. S., 59; S. C., 5 Sup. Ct. Rep., 717) makes independent evidence of the existence of inventive skill, apart from inferences of such existence which may be drawn from novelty and utility, to be of greater importance than has been understood heretofore.

There was the creative faculty of invention in the abandonment of the ineffectual and mechanical attempt to make single celluloid keys in imitation of ivory single keys, and in the conception of the idea of covering a whole keyboard with a single celluloid sheet.

The patent in suit having been declared void for want of novelty by another court (*Celluloid Manufacturing Company v. Tower*, 26 Fed. Rep., 451), from which decision a notice of appeal to the Supreme Court had been given, a stay of the accounting was asked in this case; but as the facts in this case had features not brought out in the other case, held that there was no adequate reason for a stay of the accounting.

Motion for rehearing denied.

A Sweet Posy.

Take two moss rosebuds, half open, a spray of rosemary, and half a dozen of the flower heads of lavender, to which add a cluster or two of mignonette, three old clove carnations, a small bunch of white jasmine, and a few leaves of the sweet scented verbena (*Aloysia citriodora*). If to the above you add a half opened old Provence or cabbage rose, so much the better; and the result will be a sweet posy that a duchess might like to have near her, and which, if tastefully put together, will delight the eyes as well as the nose. This sort of sweet posy was far more common in the days of our great-grandmothers than now. You will notice how careful the late R. Caldecott was to give his sweetest of early eighteenth century maids a dainty little posy to sniff at as they cross their tiny feet and sit demurely in the fine old Chippendale chairs he must have liked, or he would not have drawn them so well.

Well made *pot pourri* is delicious in winter, but during summer time every room in every house which has a garden ought to be full of fresh flower fragrance, leaving the mummied odors for the winter of our discontent. You must not for a moment fancy that the above recipe for a sweet posy is a bit of literary labor out of my own head, so to say. The truth is, I found it written inside the cover of an old herbal, and to-day I tested its efficiency, and having found it not wanting, I offer it to every Lady Corisande who reads the *Garden*.

THE capital stock of the American Bell Telephone Company is ten millions of dollars; and the capital stock of the various sub or license companies is fifty-four millions of dollars, or in all sixty-four millions of dollars. The Bell stock sells in market at nearly double its face value. The aggregate of the license companies' stock sells for about one-half its face value.