its affinity for nitrogen is much less. It has a different point of saturation for every gas, but when filled with one or more it is still capable of absorbing other gases. Thus coarse-grained charcoal saturated with ammonia takes up more carbonic acid than charcoal without ammonia, and the same charcoal when saturated with both takes up a larger quantity of sulphureted hydrogen than of either. This is a valuable property where, as in the case of the intestinal cavity, the gases are various.

Much is still to be learned on this head; but the reason why charcoal saturated with ammonia takes up carbonic acid so freely is plainly due to the formation of carbonate of ammonia.

The impregnation of charcoal with oxygen has important therapeutic actions. It is this which renders it so valuable an agent in destroying the fœtor of foul sores, and, when taken internally, in correcting any putrefactive tendencies, and it is also by virtue of this that sulphureted hydrogen is not only absorbed but immediately decomposed.

Dr. Arthur Leared adds that the beneficial action of charcoal need not be confined to the human subject, and suggests its use for flatulence in horses, and also as a remedy for that frequently fatal distention of the first stomach from carbonic acid, which occurs in cows after certain food, such as clover and potatoes.

SEVERE AND EXTENSIVE INJURY OF FORE-ARM, WITH RECOVERY.

By MEIGS CASE, M.D., Washington, D. C.

THE extension of the railway system and corporate neglect to provide substitutes for hand coupling have already created an army of men, who, with absent and crippled fingers, hands, and arms, are silent witnesses of the hardships of an indispensable vocation. A statistical exhibit of the number and character of these injuries would be interesting and valuable. The unpromising appearance of these cases usually suggests amputation, and it is believed that the undefined limitations of surgical enterprise too often permit it.

The illustration shows one of these injuries, as it was presented for treatment:

Thomas Lane, twenty-eight years of age, engaged in coupling a locomotive to a "gondola," was caught by the heavy iron bar, which was driven through his left arm, fracturing both radius and ulna, about one and one-half inches in front of the elbow-joint. An additional fracture of the radius in its middle third completely detached a four-inch piece, which lay transversely across the wound. Two other small pieces of loose comminuted bone were removed. The soft parts were crushed through near the radial attachment of the biceps, and nothing remained unsevered but a few fibers of the supinator longus and the extensor radialis longior. The weight of the forearm, thrown upon these thin attachments and a band of skin less than two inches wide, permitted the most extraordinary downward displacement of the nearly severed arm. The patient said that he feared it would "drop off" before he got home. The median nerve was torn half across the ulnar artery, and the soft parts adjacent were crushed, and the wound filled with soot. The borders of the wound were twenty-three inches in length, and extended nearly around the arm, terminating at points opposite and not to exceed two and one-half inches apart. The brachio radial artery was, however, uninjured, and he had a good pulse at the wrist.

I determined at once to give the patient the benefit of this fortunate circumstance, removed portions of crushed tissue, and carefully replaced the parts, and secured them by interrupted sutures. The whole was held in position by lateral splints of flannel and plaster of Paris, and the whole arm laid upon a pillow and covered with yeast poultices.

The venous hemorrhage was considerable during the first two days, and extensive swelling occurred with sloughing of the injured muscular tissue and bulging of the under lips of the wound. By the free use of nitric acid, this process was facilitated and controlled. There was no sloughing of the skin, and union by first intention took place in nearly one-third of the suture. At the expiration of ten days, the sloughs having disappeared, and the swelling greatly diminished, drainage-tubes were inserted from bottom to top, running through the center of the arm. An opening was made for this purpose on the lower side, about three inches in

front of the olecranon, and the entire arm surrounded by plaster of Paris bandage, with the exception of a half inch opening for the drainage tubes at the most dependent part.

The patient began to go about, and at the expiration of three months recovered, with some paralysis of the forearm and ankylosis of the elbow-joint; but he is able to carry a pail of water or handle a shovel and hoe as well as ever. The ankylosis at the elbow is slight, and could be easily broken up and motion restored.

The above illustration is taken from a photograph, and was made by direction of Dr. D. L. Huntington, Acting Surgeon-General of the United States, who has kindly suggested this publication.—*Medical Record*.

A LONG SLEEP.

A CERTAIN famous historical desert snail was brought from Egypt to England as a conchological specimen in the year 1846. This particular mollusk (the only one of his race, probably, who ever attained to individual distinction) at the time of his arrival in London was really alive and vigorous, but as the authorities of the British Museum, to whose tender care he was consigned, were ignorant of this important fact in his economy, he was gummed, mouth downward, on to a piece of cardboard, and duly labeled and dated with scientific accuracy, "*Helix desertorum*, March 25, 1846." Being a snail of a retiring and contented disposition, however, accustomed to long droughts and corresponding naps in his native sand-wastes, our mollusk thereupon simply curled himself up into the topmost recesses of his own whorls, and went placidly to sleep in perfect contentment for an unlimited period. Every conchologist takes it for granted, of course, that the shells which he receives from foreign parts have had their inhabitants properly boiled and extracted before being exported; for it is only the mere outer shell or skeleton of the animal that we preserve in our cabinets, leaving the actual flesh and muscles of the creature himself to wither unobserved upon its native shores. At the British Museum the desert snail might have snoozed away his inglorious existence unsuspected but for a happy accident which attracted public attention to his remarkable case in a most extraordinary manner. On March 7, 1850, nearly four years later, it was casually observed that the card on which he reposed was slightly discolored; and this discovery led to the suspicion that perhaps a living animal might be temporarily immured within that papery tomb. The museum authorities accordingly ordered our friend a warm bath (who shall say hereafter that science is unfeeling!) upon which the grateful snail, waking up at the touch of the familiar moisture, put his head cautiously out of his shell, walked up to the top of the basin, and began to take a cursory survey of British institutions with his four eye-bearing tentacles. So strange a recovery from a long torpid condition, only equaled by that of the seven sleepers of Ephesus, deserved an exceptional amount of scientific recognition. The desert snail at once awoke and found himself famous. Nay, he actually sat for his portrait to an eminent zoological artist, Mr. Waterhouse, and a wood-cut from the sketch thus procured, with a history of his life and adventures, may be found even unto this day in Dr. Woodward's "*Manual of the Mollusca*," to witness if I lie.—*The Cornhill Magazine*.

THE COBRA AND MONGOOSE.

By DR. G. ARCHIE STOCKWELL.

THE popular conceptions regarding those inveterate foes, the cobra and mongoose, are usually far from just, being derived from the sensational reports tourists and travelers are wont to season their writings with. The Indian cobra, or to give it full title, cobra de capello, or "hooded viper" (*Naja tripudens*), is far from being the vindictive reptile commonly depicted as perpetually lying in wait for an opportunity to carry death and terror to inoffensive humanity by means of its terrible fangs; but, on the contrary, it is a creature of nocturnal or crepuscular habits, during day lying coiled up and asleep in its lair, and at all times comparatively unobtrusive, and timid even to cowardice. It is implacable only toward those creatures generally classed as vermin, and, like the majority of the serpent tribe, only too happy if permitted to escape the presence of man in the nearest retreat, and manifests neither hostility nor displeasure other than by means of a mere threatening hiss.

In Hindostan, where, perhaps, the reptile is most general in distribution, its presence is nothing like universal, being dependent upon topographical features suitable for sustenance and reproduction, and vagaries of climate, soil, latitude, etc. In many regions, Bengal especially, it is altogether wanting, or so rare as to elude observation, and it becomes possible to reside in for years in the Orient without once obtaining so much as a glimpse of the species, save, perhaps, in the hands of some native mountebank. Civilization is its greatest foe, and it retires gradually before European settlements and methods of cultivation. In certain districts where its presence is well established, it is so unobtrusive as to be practically unknown save for a brief season immediately succeeding the rains; and even in Bundelcund, in the neighborhood of Lulutpore and Jabanzi, where it is especially numerous, is regarded as a source of annoyance rather than danger, exciting none of the fear and horror that the mere empty title obtains among residents of more temperate climes. The Anglo-Bengalee holds it in supreme contempt, as a creature to be classed rather among scorpions, centipedes, and vermin, than the more dangerous *fera natura*, and loss of life, save perhaps as the result of some foolhardy prank or criminal exhibition is unknown. After many years' residence, Captain Parker Gillmore declared he "could never hear of a European being bitten!" Boots and gaiters are invariably worn by foreigners and better classes of natives, and are efficient safeguards; and even trousers are in a measure protective, absorbing the virus, and catching and tearing out the fangs. Beds and couches are always surrounded by nettings of gauze, and covered by canopies as a protection against certain insect pests, while the ravages of others and of moth and damp insure close fitting closets and chests constantly under inspection, offering no lurking or hiding places for danger.

With the decline of the sun in the evening, the cobra crawls forth from hiding in search of toads, frogs, lizards, and the lesser forms of vermin and reptile life that afford it sustenance. For the sake of rats and mice there harbored, and of which it appears inordinately fond, it haunts abandoned cane and paddy fields, deserted temples, dwellings, fortifications, and honeycombed ant hills, or second growth jungles, rubbish piles, and ruins; and it is sometimes led thereby to stables and inhabited bungalows, when, if opportunity offers, it takes up its abode in drains, old wells, burrows, defective foundations, and even the eaves, thatch, and garret. Natives, the priests more especially, encourage

its presence as a means of ridding their abodes of superabundant vermin, enticing and retaining by means of frequent libations of milk regularly supplied. No native, moreover, will destroy a cobra save under compulsion, since it obtains a semi-sacred character as typical of the couch and guardian of the god Vishnu; and when compelled by it to mourn the decease of a friend, or even one of his immediate family, the poor Hindoo ventures on no greater retribution than the coaxing or forcing of the reptile into a jar, when it is transported to a distance and again given its liberty.

During the heated term, in the low lands, when doors and windows are required to be perpetually ajar to insure necessary circulation and supply of oxygen, a reptile will occasionally venture into an apartment after nightfall, when all is quiet, traversing it about by following the angles formed by floor and wall; but as it vanishes with the dawn, its presence is seldom suspected or made known, except perchance it casts a portion of its slough during its peregrinations. A friend who established himself for a few weeks in an abandoned and dilapidated bungalow, because of its contiguity to certain shooting grounds, assured me that he twice found in his sleeping apartment the cast sloughs of cobras prowling over night; was once awakened by the fall of a cobra from the shaky ceiling, along with a rat it sought to make its victim, both striking the canopy of his bed and rebounding to the floor; and on a third occasion, on rising, chancing to kick over a shooting boot that stood in his way, much to his surprise a reptile that had chosen it as a convenient retreat crawled forth and made for the open door—"Not a pleasant companion for one's foot, surely," he remarked, "but no more than might have been expected in taking up such quarters in such a neighborhood without thorough inspection and overhauling."

That the loss of life among the native population, from cobra poisoning, is considerable, is a natural result of prevailing habits of life; and occasionally the annual mortality statistics are positively appalling. It is only the better classes that habitually clothe the extremities and use the charpoy, or native bedstead, the great mass of humanity pursuing their vocations and moving about bare legged and with naked feet, marching even through dense jungles and traversing deserted plantations and ruins with the utmost *insouciance*; and at night they cast themselves indifferently on the bare floor or naked earth with but a brief cotton garment wrapped about the head and upper portion of the body. A cobra prowling for prey will sometimes cross the body or legs of one thus disposed, who, half awakened by the weight and movement, puts forth his hand to discover that which disturbs his slumbers, touches the hideous intruder, who mistakes the act for one of enmity, and is immediately fatally bitten. The callous carelessness of these people is astounding, and verges on absolute criminality; and how far it may arise from the sacred character with which the Hindoo invests the reptile, or from that universal fatality that pervades all classes, Hindoos, Mohammedans, and Parsees alike, I leave for others to determine.

Given one cobra in a neighborhood, and a second is invariably close at hand, presumably of the opposite sex, since Piny remarks the affection of the male and female asp—Cleopatra or Egyptian cobra (*Naja haje*)—asserting them to be constantly associated together, and that one invariably attempts to revenge the death of the other. The Cinghalese possess a kindred article of faith, saying that on the spot where one is destroyed, a second will be found soon after; and Sir J. Emmerson Tennent in a measure verifies this in several experiences. Once when a cobra was killed in a bath at the Government House at Colombo, Ceylon, its mate was found in the same spot the following day; again, at his own stables, a serpent having fallen into a well that was too deep to permit its escape, its companion, of the same size, was discovered in an adjoining drain. "On this occasion," says Tennent, "the snake, which had been several hours in the water, swam with ease, rearing its head and hood above the surface; and instances have repeatedly occurred of the cobra voluntarily taking considerable excursions by sea."

(This last statement must be received with caution, as it is based solely on native testimony, and hence is unreliable; undoubtedly, the *Pelamys bicolor* was mistaken for the *Naja*.)

When quiescent and unmenaced by danger, the reptile exhibits none of the peculiarities that authors in general are wont to depict for the horridification of their readers; and few travelers and tourists, presumably, ever see a cobra in unaffected repose, but only in the artificial character induced by the juggler. Instead of the large, full-hooded, and oval-flattened neck, overshadowing the head and considerably exceeding the body in diameter, it presents the same prone form, rounded contour, and tapering outlines of ophidians in general, except, perhaps, that the tail terminates more abruptly, and the body is more robust in proportion to its length, and its movements are in the main characterized by deliberation and sluggishness. It is only when excited and enraged that it rears its crest aloft for nearly half the length of its body, swaying rhythmically to and fro with the rigidity of an iron bar, head bent, deadly fangs erected, and tongue rapidly protruded and withdrawn, and air sibilant with its strident hissing; and it is now only that the neck assumes its hooded aspect, by drawing forward and expanding the first nine pairs of ribs, that are of a "floating" character, bringing into prominence in a most marked degree the two circular and connected spots of white that have given rise to the pseudonym of "spectacle snake;" and this act seems to be coincident with the erection and protrusion of the canine teeth that constitute the fangs. A serpent of five feet will erect its head for half a yard, or perhaps two-fifths its length, above the ground, drawing the posterior portion of the body into a coil, forming a virtual spiral spring, whereby it is enabled to pivot in all directions, and launch itself forward with incredible velocity and force for nearly its full extent; and it may even leap a yard or more when occasion demands, though in general is very chary of such efforts, seemingly aware that the momentary gain is an advantage lost in the time required to escape the prone form and again assume the offensive.

In spite of its venomous character, its natural docility and gentleness, coupled with its striking appearance, have made it a favorite with Oriental jugglers, the more so since the fatality that attends its wounds causes any trifling to appear the more wonderful. It is only fear that impels the cobra to strike, though this is far from being the generally received opinion. Popular belief, outside of India, credits performing serpents with the loss of their fangs, and their exhibition with being but one of their highly trained condition; but while this may be true in occasional instances, it is by no means a universal fact. The Hindoo understands full well the incredulity of all foreign Sahibs, the Anglo-Saxons in particular, whose commendation he is especially anxious to

secure, inasmuch as it brings him rupees where otherwise he would be forced to put up with annas; and he is therefore wont to exhibit the reptile's fangs *in situ*, and cause it to strike some small creature, as a bird or fowl, as evidence of its virility.

The handling of a cobra that has been rendered innocuous is barely worth witnessing, as it is a performance invariably of the most careless, inattentive, slipshod character; the juggler, unless a novice, wastes no arts upon such a reptile, and exhibits merely for the delectation of the ignorant and simple, or a species of advertisement to insure the relaxation of the purse strings of his audience later on. A few extra coins will always call forth the "simon pure," when his whole demeanor undergoes instantaneous transformation. He is no longer inconsiderate, careless, and indifferent, but his acts are marked by constant and rapt attention, swift and sudden seizures, and lightning-like releases, devoid of the least faltering or hesitation, every movement being a miracle of rapidity, certainty, and calculation, with a view of avoiding any rebellious or untoward attempt on the part of the reptile; and in this may be witnessed an exhibition of courage, adroitness, and daring of unexampled character. Provoking the creature to strike, he receives the blow upon the elbow of his left arm, previously well swathed in cloth; or he merely tempts it with a feint, when, ere it can again recover, it is seized by the right hand just below the jaws, rendering it instantly powerless; and when it is again released, it is by an instantaneous unclosing of the fingers and removal of hand and arm in a swift and dexterous upward swing that appears, as it virtually is, but a single movement. In time the viper becomes familiar with the acts, and learns that the handling and movements are in no way productive of injury, when it submits thereto unresistingly, and plays its part in mimic imitations of anger with spiral coil and expanded hood, and unless specially aroused becomes practically harmless. Nevertheless, there is always danger lest some unforeseen accident should provoke it to resort to its terrible weapons, when its blow is so swift and instantaneous that it often escapes notice for the moment, or until attention is called to it by the drops of blood that slowly trickle away from two needle-like punctures that mark the insertion of the fangs and inoculation of the venom. So rapid and fatal is the action of the poison, that few performers venture to ply their calling without a heavy, keen-edged knife at the girdle or concealed beneath the clothing, in order to insure safety by instantaneous amputation or excision of the bitten part. Sir Emerson Tennent tells of a conjurer he saw bitten in the wrist dying the same evening, as the result of attempting some unusual familiarity, to which he was tempted by the plaudits of his audience; and Forbes, the author of "Oriental Memoirs," never doubting but that the serpent that danced before him for an hour on his table while he painted it had been deprived of its fangs, repeatedly lifted and handled to observe the peculiarities of coloring and delicate tracery of markings, especially the white connected spots that form the spectacles upon the hood; yet the following morning the same reptile, without appreciable cause, and while being exhibited in the Bazaar, darted at a native girl that was squatted near, inflicting a wound upon her neck from the effects of which she expired in less than half an hour.

Serpents are taught by their masters to coil and recoil, advance and retreat, bow their heads, approach their deadly mouths to their own, and perform various other antics and contortions in obedience to certain signs and sounds. This is the so-called "snake charming," with whose descriptions we are wont to be regaled, though in reality there is nothing in the way of "charming" or of the oft heralded "musical performances." The sounds whereby the juggler controls his reptiles are exclusively monotonous buzzings and hummings, or shrill and earsplitting shrieks tortured from some reedy pipe, without either time or rhythm, and of a character that speaks little for veracity or for correctness of ear and knowledge of harmony on the part of those who offer such descriptions. The tales too that annually find place in the popular prints of the day of East Indians (invariably and most unaccountably residing in the mountainous districts of Northern India) who are forced to desert their homes and forego the pleasures of musical recreation because of the hordes of cobras attracted thereby, along with others wherein the extraordinary presence of mind in young gentlemen of the "griffin" persuasion saves lives by executing brilliant *fantasias* upon the flute at the critical moment the reptile is about to strike, are most mendacious and gratuitous inventions.

The great enemy of the cobra is the mongoose, a viverrine carnivorous quadruped of the civet family and genus *Herpestes* or "creepers," which provides something like twenty different forms or species. A trifle larger than a cat, it has the outlines of a marten, but with more pointed head, and exhibits various shades of coloring, coincident with surroundings and habitat, from a cinerous gray to ochreous yellow and dusky brown. Very partial to warmth, it thrives best in the tropics and subtropics of the Orient, where it is native, but is sometimes found at heights of seven thousand feet or more above the sea-level; and it has recently been successfully introduced into the West Indies, and experiments looking to its acclimation in Australia are in progress. British India alone claims eight distinct species, of which the gray and yellowish forms *Herpestes fasciatus* and *H. vitticollis* are most common, while the handsomest, smallest, and most rare is the ruddy mongoose (*Herpestes Smithii*). Africa also boasts half a dozen species, the Egyptian ichneumon, which also bears the vulgar designation of "Pharaoh's rat," *Herpestes ichneumon*, or *Pharaonis* being best known. A very pretty form is found in Java, in the garagan (*Herpestes Javanicus*); while Europe possesses a single specimen, the ichneumon of Andalusia (*Herpestes Widdingtonii*). All are marked by the same general characteristics and habits of life, and all are to a considerable extent fossorial, though taking readily to trees, especially in the presence of superior foes, climbing with no little address and agility.

The average mongoose is something like two feet in length from tip to tip, of which the tail claims at least one-half, with short and very stout legs, the forearm quite tapering, and each foot with five toes armed with long retractile claws. The head is small, handsome, and very ferret-like, with piercing black eyes, short, rounded, mouse-like ears, and incisor and canine teeth of exceeding keenness; the tail is thick at the root, tapering, bushy, and supposed to afford mechanical aid in leaping and turning abruptly, as at such times it is brought with great violence to the ground, sometimes with such force as to cause bruising and bleeding. The claws serve no apparent purpose in securing prey, though they prove powerful weapons for tormenting, as it is wont to play with its victims when caught alive, as a cat does a mouse; the fingers are long, flexible, and wielded with all the adroitness of the raccoon, which crea-

ture it resembles in many ways, and they find constant use in dragging the eggs of birds and reptiles from their hiding places. Like the cobra, its sustenance is chiefly reptiles and vermin; and though it is an implacable foe to all serpents, it never seems to devour the poisonous varieties, though they are invariably destroyed when discovered. Under domestication, to which it is very susceptible, it is said to become savage when fed upon raw flesh, and that the sight of blood renders it frantic; but this I may be permitted to doubt, since all I have known were allowed the run of the house, and fed largely upon the rats and mice they killed. Ordinarily, carrion is rejected with disgust, but that this is not always the case I have the testimony of a gentleman, formerly resident of Hyderabad, who informed me that the last tiger kill his shikaree persuaded him to sit over in the night time, though literally putrid, attracted four or five of the little creatures, who "ate and fought and fought and ate, with their peculiar little squeals; and what struck me as peculiar was first the way they scattered when the tiger came on the scene, and secondly their devouring such a disgusting repast, which was little better than a moving mass of maggots; and that, too, in a jungle where there was living food in abundance."

Though possessing the glands peculiar to the family of which it is a member, the mongoose is entirely devoid of odor; and being moreover excessively neat in habits generally, and invaluable in eradicating pests in the way of reptiles, vermin, and larger insects, it is a prime favorite in Oriental households; its one unpleasant trait is a tendency to make a nasty mess when devouring rats, flinging bones and fur and bits of skin about with reckless contempt.

Nothing escapes its prying curiosity and inquisitive ways; and as it combines the liteness of the serpent with the stealthiness of a cat, intelligence of the dog, and cunning of a monkey, little escapes its jaws, and prey is secured in the most out of the way and seemingly inaccessible localities. The different forms and positions it imitates and assumes to deceive its quarry are beyond enumeration or comprehension, not the least remarkable of which is perching on its haunches and gathering the body together like a kangaroo, and then hurling itself to considerable distances with inconceivable rapidity, after the manner of that marsupial, by a series of noiseless bounds, the anterior extremities not once touching the ground. It swims and dives moderately, also, though vision appears to be restricted when beneath water; and while it enjoys that element for cleanly and recreative purposes, it never seeks food therein or assumes the other like habits with which it has been credited.

With unbounded curiosity, and restless ways that keep it continually a-foot, it is extremely impatient of confinement and prolonged caresses, though it frequently returns for attention or to rub against the legs of its master, and off again almost immediately, abundantly gratified; and strange to say, while as playful as a kitten, it exhibits few mischievous tendencies. It obeys the sound of the voice promptly, and with little or no training has been used to put up birds before the gun or bolt rabbits from their burrows, though it quickly tires of the amusement. Primarily it is somewhat inclined to querulousness, but this wears off as soon as perfect confidence is established between it and its master, his family, and the domestic animals. Of the attentions of strangers, however, it is very chary, and apt to resent the least familiarity with a bite. At the same time it will submit to untold teasing and rough usage from the person with whom it is on perfect terms of intimacy, without exhibiting the least resentment, and has been known to allow itself to be repeatedly seized by a Newfoundland dog and tossed into the air and again caught in its descent. In its incessant movement, it appears to be hunting, unless perhaps engaged in bestowing minute inspection upon some new and strange object; and it is a matter of some interest to observe its movements at such times, and the way in which it twists in every direction its exceedingly sensitive and mobile nose.

The senses, too, would seem most acute, since the presence of a strange person or animal is heralded, long before visible, by ruffled fur, arched back, and squealing barks, while the footsteps of master and friends are recognized with undisguised manifestations of pleasure before they are appreciable to human ears. If allowed, it will take up its quarters for the night beneath the pillow of its master, sleeping with its tail drawn over its face, but is ever alert and watchful, and anxious to investigate strange sounds and movements; but at feeding time it is wont to exhibit its carnivorous propensities in snapping, squealing, and biting at every one that approaches, even its best friends, though the demands of appetite once satisfied it quickly resumes its ordinarily pleasant demeanor. In one thing, if allowed the freedom of the house, it proves an inveterate nuisance, and no amount of training will correct it; it will sneak up to the table silently at meal times and pounce suddenly upon any article of food that seizes its fancy, even if on the fork in transit to the mouth, and then rush away with tail swelled and extended like a bottle brush, swearing vociferously to avert pursuit.

In its combats with the cobra, the mongoose depends solely upon its superior agility, and, in spite of assertions to the contrary, is as susceptible to the influence of venom as any other animal. One placed in confined quarters with a cobra manifested the strongest anxiety to escape, but, finding this impossible, turned to and killed his opponent, himself dying in little more than a quarter of an hour from the time he received the first wound; and though he was released immediately after the conflict, he made no attempt to pass the open door, evidently aware that his fate was sealed. The natives say that the intense rage with which the cobra inspires the mongoose makes him "sick" and "crazy," from which he does not recover until he has partaken of "medicine"—the root of the *Ophiorrhiza mongos*; and this appears to be the sole foundation for that remarkable tale so generally circulated, that the creature hies away after battle to seek an antidote for wounds. The root appears to be sought solely for the purpose that *Triticum repens*, quitch or dog-grass, is sought by canines—merely as an emetic.

Personally I have never been fortunate enough to witness one of these famous combats, and accordingly avail myself of the experience of Commander Beardslee, U.S.N., which he writes was had at the house of a Boston merchant in Singapore:

"One morning D. came into the possession of a fair sized cobra de capello, and at once cleared the hall for action, retaining some of the highest articles of furniture as reserved seats. The basket containing the reptile was placed on the floor, and by means of a cord capsize, thus releasing its occupant, which began sliding about, seeking an opportunity for escape. By intention, the mongoose was at the other end of the room, pursuing its customary investigations, but almost immediately perceived its foe, when it became momentarily rigid, then advanced slowly with arched back, gleaming eyes, and cat-like tread. Quicker than a

flash, from trailing its yard of hideous gorgeousness upon the floor, the cobra sprang into an attitude of combat, and from a coil for base, reared its pointed head with expanded hood and eyes sparkling with rage, for nearly half its length above the floor; then, with fangs pointed toward its foe, tongue darting at intervals from its horrid mouth, and hissing with excitement, it stood prepared for the fray.

"The mongoose gradually approached until just beyond the striking distance of the serpent, paused a moment, then darted through the air like a shot from a gun. There was a momentary struggle, over almost before it began; the snake struck as the animal sprang, but its foe arrived in safety on the other side, while on the crest of the viper were two jagged wounds from whence the blood was trickling. Again and again was this repeated. By his judgment and agility the mongoose escaped a touch, while after each assault the serpent seemed to lose courage and strength, and new wounds were visible, until at last it no longer retained its erect and defiant posture, but, lying prone along the ground, sought only to avoid attack, but without avail. Steadfast and merciless, the little animal followed up his victory, and in a short time had nearly torn from its body the head of the unfortunate reptile, and death soon put an end to its struggles. The mongoose manifested no desire to devour his late antagonist, but sought to leave the apartment. D. called to it, but it would not obey, and seemed to be in an unnatural state of excitement, its eyes having a peculiar wild and greenish stare. He then attempted to pick it up, but, crazed, it turned upon him and buried its teeth in his hand. Dropping it, the door was opened and it ran out, disappearing for a day or two, when it again returned in its usual health and humor. My friend, however, did not fare so well. The little wound upon his hand rapidly assumed most alarming symptoms. The arm to the shoulder became swollen to twice its natural size, discolored spots made their appearance, high fever and other bodily derangements set in, and for many days his life hung in a trembling balance. All the symptoms caused by cobra poison, though not to the extreme degree, followed the bite of the mongoose, and I afterward learned that his health had been so shattered by his illness that he had been forced to leave the Indies."

With regard to the effect of the bite of the mongoose, which Mr. Beardslee appears to think arose from its teeth having come in contact with the cobra, or from cobra venom, he is undoubtedly in error, unless, which is highly improbable, the poison glands were accidentally encountered. It is a well understood fact among physiologists, that the saliva of any animal, even man (as well as some other secretions), undergoes a change under the stimulus of intense anger, and assumes a degree of activity that renders it highly poisonous; and this is the more apt to be the case in the tropics. The poison was that of the mongoose solely, the secretions of the mouth being affected by the highly enraged condition that is always induced by the presence of the cobra. As is known, any creature may partake of the poison of the most venomous serpent with impunity, since it is only when brought in direct contact with the circulation that it becomes at all dangerous.

Port Huron, Michigan.

CONSTRUCTION OF GLASS HOUSES.

THE more we see and hear on this subject, the more are we driven to the conclusion that the future glass roof will have to cover all in and leave neither woodwork nor putty exposed to the weather. In other words, glass roofs will be put together like slates upon the roof of a dwelling-house, or in some similar way. The only objection to this plan is that the rain would get in between the panes laid edge to edge flush, for there is no difficulty about the lap over at the tops of the panes. If any means could be devised by which the panes could be fixed together at the edges when laid flat, we should at once overcome the difficulty and do away with guts, astragals, putty, and all outside projections.

This is the point which horticultural builders have now to study. At present, in any attempts at covering in the framework of the roof with glass, the panes overlap both endways and sideways, hence allow much heat to escape at the numerous laps, and the wind also rushes in on windy days, keeping down temperature and entailing the use of more fuel.

The only modern houses I ever saw glass-ed in the way I have suggested, were exhibited by a French builder at the Paris Exhibition of 1878, and he got over the difficulty of the seams where the edges of the glass met by pasting over them narrow strips of tinfoil, which appeared very enduring and effectual, but did not look very neat. The roof had, however, a smooth appearance, was perfectly water-tight, and every portion of the woodwork was covered over, so that no painting of rafters nor anything else outside was needed.

Some builders have already got rid of outside putty, simply bedding the panes on a thin layer of putty laid on the rabbet beneath; but they still retain the wooden ridge between the panes, as well as the rafters. They only need now to go a step further and get rid of the last, making the panes meet over them, and the riddle will be solved.

The man who secures a patent for some design of this sort will probably succeed. It is what gardeners want. They have objections to wholly puttyless glazing because of the hard firing such roofs entail, losing in one way what is gained in another, especially in early forcing; cutting the panes wide and smoothly at their edges, and laying them close, edge to edge, on a bed of putty over all, one would think was not an impossible matter. If the panes could be fixed in position by a spring or copper nail, nothing more would be required, for in pressing down the glass upon the putty the latter would work up into any small spaces between and fill them up effectually. This is just what happens in glazing without outside putty. The panes are not cut particularly smooth at the edges, the putty works between them, and the wooden ridge of the astragal is skinned off by the knife afterward and is quite safe against drip. It takes little to hold a pane of glass in its place, and in a roof glazed in the way suggested there would really be no points for any force such as wind to lay hold of.

When I came here I found an old peach house glazed in this way that had stood for fifty or sixty years; but it was of homely construction and merely an experiment, the panes being old-fashioned and only about 3 inches long and 5 inches wide, fixed by copper tacks. The roof looked rather ragged, but it served its purpose, and during the whole time just named never needed to be painted outside. With panes 2 or 3 feet long, however, and from 1 foot to 2 feet broad, such a roof would be a very different affair.—*J. S. W., in The Garden.*