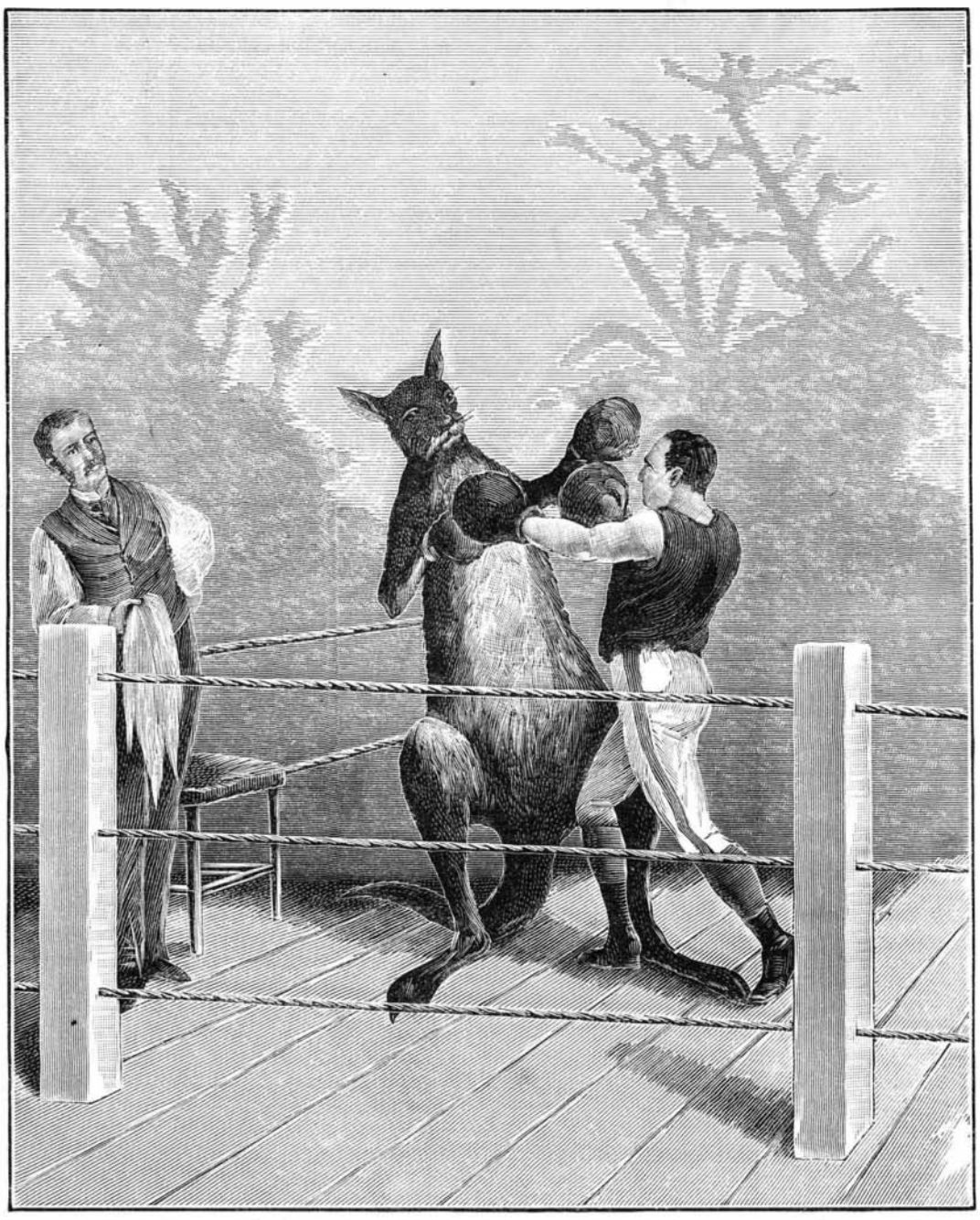
THE KANGAROO AS A PRIZE FIGHTER.

Among the recent developments in the world of sports, in Australia, is the training of the kangaroo to stand up and spar or box with a human antagonist. We give an illustration which we find in a recent number of *Black and White*. An exhibition of this curious kind of combat now takes place regularly at the Royal Aquarium, London, and it attracts many spectators.

The way in which the natural kangaroo spars in the bush, his birthplace, is peculiar. He places his front paws gently—almost lovingly—upon the shoulders of his antagonist, and then proceeds to disembowel him with a sudden and energetic movement of one of his hind feet. From this ingenious method of practicing the noble art of self-defense the kangaroo at the Royal Aquarium has been weaned. The clever instructor of this ingenious marsupial has trained it to conduct a contest under the conditions known as the Marquis of Queensberry's rules. It cannot be said that it adheres to these regulations quite so rigidly as the combatants who pummel one another at the National Sporting Club are required to do. On the contrary, it cannot wholly disabuse itself of the idea, favored by the French, though discountenanced by the English, that those who are attacked have as good a right to defend themselves with their feet as with their fists. It affects *la savate* in preference to *le boxe*, a predilection which, considering the force with which a kangaroo can kick, might quite conceivably cause an injury to his antagonist. However, no harm has as yet been done, and the encounter between human and marsupial is spirited and novel, and admirably illustrates the power of man to bend the brute creation to his will.

A writer in a recent number of the *Overland Monthly* advocates the importation and domestication of the kangaroo in this country. He gives authorities showing the feasibility of the project, and believes the animal could be introduced and raised here with profit. The flesh of the kangaroo is highly esteemed as a food, and from the hides a valuable leather is made. These are legitimate uses of the animal. But it is shocking to think of degrading so useful a creature down to the level and equal of a brutal human prize fighter.



THE KANGAROO AS A PRIZE FIGHTER.

How to Make a Gas Engine Noiseless.

Mr. P. Simon has been making a number of experiments with a view to deadening the objectionable noise made by the puffs of the exhaust pipe of a gas engine, and, after trying a number of different devices, he describes the following in a recent number of *L'Electricien*, which is such a simple device that it can be introduced by any one at a small expense. A pipe split for a distance of about two meters is attached to the end of the exhaust, with the split end upward. Beginning at the lower end of the cut, which may best be made by a saw, dividing the pipe into two halves, the slotted opening is widened out toward the top until it has a width equal to the diameter of the pipe. The puff of the exhaust spreads out like a fan, and the discharge into the open air takes place gradually. The effect produced is said to be remarkable, but it depends somewhat on the flare of the tube.

An Ink Monopoly.

James Eddy, it is said, of Troy, N. Y., makes all the ink with which the United States government prints its paper money. Mr. Eddy's father invented the ink, but he never told anybody how he did it until just before he died, when he let his son into the secret. Had an untimely accident gathered the inventor to his fathers before he told his son about the ink, the government printer would have been in a bad way, for Mr. Eddy's invention is the only kind of ink that will print on the peculiar surface of the fiber of which government note paper is made.

The present Mr. Eddy employs only six men in the manufacture of his ink, and none of them is in the secret. None of them has yet seen Mr. Eddy in the interesting act of mixing the ingredients of which the ink is composed. Mr. Eddy locks himself up in his own room two weeks in each year, and it is there and then that he mixes stuff enough to supply the government with ink for the ensuing twelve months.

The process of locking himself up surrounds Mr. Eddy with an air of romance something like that of the man whom Balzac made to search for the alkahest, the only difference being that the alkahest fellow shut himself up for a lifetime and got nothing, besides alienating the affections of his wife, while Mr. Eddy locks himself up for two weeks and gets $50,000 a year.

The widely circulated story to the effect that the man who invented rubber tips for pencils made $200,000 is contradicted by a Philadelphia paper. The original inventor, it says, got little or nothing. It was somebody else who got the money.—*Author unknown.*

An Alfalfa Crop.

From Bakersfield, California, comes the report of a yield of alfalfa which is hard to beat. E. Chauvin's place near Delano is watered from an eight-inch artesian well 704 feet deep. This gives a flow of 3½ inches of water, all of which runs into a reservoir, from which it is drawn for irrigation purposes as it is needed. Three years ago when the alfalfa was first seeded in a small field which he has, the yield was about one ton to the acre, but it has kept on increasing, until this year the product is really marvelous. After a cutting the alfalfa grows from an inch to one and a half inches a day, and when cutting time comes around it takes four horses to pull the mower with ease.

The record thus far this season is this: April, 2 tons per acre; May, 2½ tons; June, 3 tons; July, 2¾ tons; August, 2¼ tons; September, 2 tons, a total thus far of 14½ tons per acre, with at least two more cuttings and probably more to hear from. It growth has been so rapid that it is now cut every twenty days or thereabout. There are thousands of acres in that vicinity which, if irrigated, will yield just as well as the land in question. This alfalfa is sold to sheepmen and others, and brings about $8 a ton. This high price is of course due to the location of the field, like an oasis in the midst of dry and unirrigated grazing lands, and would not obtain if the thousands of similar acres were also changed into alfalfa fields.

End-on Launches.

As nearly all vessels built in lake ship yards are launched beam-on, there is not so much computation necessary, but the incline of ways, thickness of grease, etc., are figured to a nicety when large steel merchant or naval vessels are launched on tidewater. Experience and guesswork are not sufficiently reliable where the safe delivery of a $1,000,000 or $2,000,000 hull is concerned. With mathematics and applied science the time required for a hull to travel from the blocks to the water can be figured to a second. On tidal waters the launch must take place exactly on time. Preparations are made for it, says the New York *Sun*, before the keel is laid. The incline of ways has to be figured, and it usually is from ½ to 1 inch to the foot, the heavier the vessel the less incline, of course. The City of Paris had ½ inch and the Columbia 13-16 of an inch. It was thought the latter would launch in 30 seconds, but it only required 29. Over five tons of tallow was used, and as it was very warm, about 15 per cent stearine was mixed with the tallow to keep it from running. The weight of the vessel and buoyancy of the water are important factors to be determined. When the vessel is half off the ways, their height from the water and their incline must be sufficient to continue the vessel on the same line of projection. If the vessel is so heavy that her forward part sinks into the water so that the stern is lifted from the ways, a strain is put on the decks amidships; and if, on the other hand, the buoyancy is greater than the displacement, the bottom of the hull is strained amidships.

Mr. Sheldon, now with the Globe Iron Works Company, Cleveland, has had a wide experience in launching vessels from European yards. He says that a simple method to determine if the hull has been strained in launching is to stretch a fine wire from stem to stern, having it fastened at intermediate points. If the hull is strained the wire will part. This is also done sometimes before machinery is placed in the hull.

When the hour for an end-on launch approaches, most of the props are taken down and the vessel rests on the keel blocks and one or two sets of stocks at the sides. The ways and cradle have been fixed in place and wedges have been adjusted above the cradle and under the poppet blocks on which she rests. Four men take care of four wedges. The signal is given and the men drive home the wedges. The vessel is lifted just clear of the keel blocks and rests on the ways. Alternate keel blocks are knocked away, beginning at the stern. Another "wedging up" follows, and then all the props at the sides are removed. After a rest the third wedging comes, and then all the keel blocks are knocked down, the word is given, and the planks that hold the cradle to the ways proper at the bow are sawed off, and the vessel starts down to the water. It requires about 600 men and it costs $5,000 to launch vessels like the New York and Columbia.

AT a recent trial in France it was shown that the chemist Turpin, who is undergoing five years' imprisonment for treason, made arrangements with a friend to carry on secret correspondence. A letter from the prisoner, giving the necessary directions to his friend, was read in court. An official inquiry was made, and some interesting information supplied by the convicts, from which it was shown that when private news was to be supplied to a prisoner, a formal letter apparently containing nothing of importance was sent. This being read by the governor would be passed on to the prisoner, who, understanding the missive, and that it was only necessary to read between the lines written in milk, he could make this perfectly decipherable by rubbing it over with a dirty finger or an old slipper. Another ingenious form of secret correspondence consisted of leaving letters out of words, as if the writer were illiterate. The omitted letters put together formed the requisite words and sentences.

The Influence of the Climate of Japan on the Organism of the European.

BY DR. MICHAUT, OF YOKOHAMA, EX-INTERNE OF HOSPITAL.

The Archipelago of the Rising Sun, bounded on the north by the glacial regions of Kamchatka, extends almost to the Tropic of Cancer on the south, from which it is separated only by a distance of 10°. Hence the climate of Japan is necessarily variable, and presents, in accordance with the locality, a great disparity of conditions. At the south the mean temperature is 17° (with a maximum of 34·5°); oranges and bananas abound, as also the entire series of tropical maladies—diarrhœa, infectious fevers, dysentery, the anæmia of the torrid zones, etc. In the north of Japan the mean temperature is 8° (with a minimum of —23°), and here we encounter the flora of Norway and a considerable traffic in the furs of Siberian fauna, bear, otter, etc.

The central portion—from Nagasaki to Tokio—geographically speaking and considering its latitude, should rejoice in a temperate climate. Unfortunately, this climate is disturbed by oceanic and atmospheric currents, extremely variable in character, rendering absolutely capricious the weather of the seashore—the one part which has been opened to foreigners by treaty. The climate of Central Japan defies definition; its quality can be only approximately described by stating that it is maritime, humid, rainy.

An incredible variability, an atmosphere almost constantly saturated with moisture (save in winter and during a part of the autumn), an extremely long rainy season, persisting during almost the entire spring and summer; such is, in *resume*, the tableau of the climate of Central or Middle Japan.

The abrupt changes of temperature, with occasional variations in a single day of from 15° to 16°, render the climate specially disastrous to strangers predisposed to affections of the respiratory passages and of the lungs. The recurrence of the seasons and their climatic character, so devoid of regularity, render it impossible to determime definitely the proper season for the sojourn of foreigners in the region comprised between Nagasaki and Tokio. It may be said that in Japan, and particularly on the eastern coast, prediction of the weather is purely mythical, not only from day to day, but even from morning to evening.

In the following are given some official statistics, which present more definitely the actual facts:

METEOROLOGICAL OBSERVATIONS DURING 1890.

Average humidity of the atmosphere	78
Mean tension of aqueous vapor contained in atmosphere.	10·8°
Maximum temperature	+35·8°
Minimum temperature	—5·8°
Number of rainy days during the year	181
Number of days of cloudy weather	143
Clear days	43

Thus out of 365 days it rained during 181 days, the sky remaining clear during only 43.

The conditions thus resulting will have to be carefull guarded against by the European.

The almost constant saturation of the air with aqueous vapor (except in autumn and in winter) transforms the atmosphere into a humid hothouse, utterly unfavorable to the respiratory functions. For this reason the influenza nowhere found more victims than in Japan. Bronchitis, laryngitis, pulmonary tuberculosis are frequently encountered in the natives, as well as the resident Europeans. Among the natives the proportion of deaths caused by affections of the respiratory organs is positively unheard of.

On an average, 16 per cent of the deaths are caused by maladies of the organs of respiration. It is a curious fact that the rheumatismal affections, so extremelyfrequent among the Europeans inhabiting Japan, are relatively rare (0·91 per cent) among the Japanese, the natives owing this immunity to their peculiar hygiene more than to their heredity. The use of very hot baths, almost boiling, is a factor.

As to pulmonary tuberculosis, it is very frequent among the Japanese (especially the upper classes) and Europeans. "Among the Europeans the malady progresses much more speedily to a fatal *denouement* than with the native classes. Among the foreigners residing in Tokio and Yokohama the disease proceeds very rapidly, and this is convincingly shown by the registers of the Yokohama hospitals." This sentence, written several years ago by Dr. Vincent, chief physician of the navy, is only an expression of the simple truth. Every European predisposed to tuberculosis is destined to succumb quickly in Japan. It is, therefore, absolutely necessary, if one wishes to reside in Japan, or even to remain there several months, to undergo careful examination with respect to a possible eventuality of pulmonary tuberculosis. Without this precaution, one runs the risk of undergoing the frightfully rapid development of lesions previously latent. The climate of Central Japan presents excellent facilities for cultivating the bacillus of Koch. The cause will be readily understood on observing the abrupt thermometric variations not only of season (or rather, of monsoons), but of consecutive days.

Pneumonias are more frequent than pleurisies. As for the laryngites, they are particularly tedious and difficult to cure. Often a resulting aphonia is present.

The following is a statistical table of maladies of the respiratory organs occurring in the native born:

Number of deaths: 1884, 104,260; 1885, 136,985; 1886, 132,565; 1887, 126,332; 1888, 128,613; 1889, 134,882.

Next to the affections of the nervous system, the maladies of the respiratory organs produce the greatest number of deaths. The former, however, are daily increasing in frequency.

The European sojourning in Japan is particulary affected through his nervous system and his respiratory organs as a result of the humidity and the abrupt changes of temperature.

1. Effects on the respiratory apparatus: The number of movements is augmented. The tension of the aqueous vapor being very great, that of the oxygen is diminished with resulting reduction in hæmatosis, thus opening the door to all maladies through depression of nutrition—from rheumatism and diabetes to gout and anæmia, which are everyday diseases in Japan. Contrary to the prevailing notion, Central Japan possesses a climate exceedingly favorable to the development of anæmia.

2. Effects on the nervous system: The climate of Japan, through its humid heat, depresses the nervous system. Hence diminution of physical activity, enfeeblement of the cerebral faculties, followed by apathy, somnolence, and complete prostration of the powers. Such are the different phases experienced by a European residing in Japan.

In order to withdraw from the pernicious influence of the climate, the foreigner must endeavor to spend the summer at the north—at Yeso or in the north of Niphon—where the climate is dry and invigorating.

In brief, the climate of Japan, like many countries of the remote Orient, is far from healthful for Europeans. The acclimatization of Europeans in Japan necessitates certain hygienic precautions, which will be set forth in a later article.

In a general way we may simply add that, while superior to the climate of Cochin China and India, the climate of Japan is inferior to that of Tonquin in many respects.—*Bulletin Generale de Therapeutique.*

Traveling in America Sixty Years Ago.

In 1833, 1834, and 1835 the actor Tyrone Power visited America, and his observations on the United States were published in two volumes. To-day, after the lapse of nearly sixty years, the book is most interesting reading. The time of his visit was the beginning of the steamboat and railroad age. Fulton's work had begun to produce worthy effects, and the construction of railroads was just beginning. It is hard to realize the difference these sixty years have wrought in the countenance of the land.

Power appears to have been a great sailor, and his thirty-five day trip across from England was quite to his taste. After the ship sighted Barnegat Light the probabilities of reaching New York the next day were the subject of wagers. The ship then did manage to get as far as the entrance of the Narrows. Here, to accelerate matters, a party of the passengers engaged the pilot boat to take them to Staten Island. They left the slower sailing ship behind them, and as they got in toward the island hailed the ferryboat, which was just starting. She changed her course for them, took them on board, and at last the city was reached.

The Bowling Green reminded our traveler of Cape Town, Broadway of the Boulevards of Paris. In the Battery Park, the next morning, he found a party of emigrants camped out in the open, where they had spent the night. Three hours later he sees the same family, with their belongings packed on a clumsy wagon, going up Broadway, their first step on a journey of two thousand miles that was before them.

On September 11 he starts off for Philadelphia by the "Camden and Amboy line of steamboat and railroad." Going through what he calls Raritan or Amboy Creek, now Staten Island Sound and the Kills, he reaches Amboy and takes the train. The "loco-motives" not being in condition to do duty, they start off with horses at the rate of about eight miles an hour. At Bordentown the railroad stopped, and our traveler completes his trip by steamboat. Water service was decidedly ahead of land service. Philadelphia was reached in darkness, and here he was assailed during the watches of the night by what he calls "those incarnate demons, the moschetos," which "did hum and bom and bite and buzz."

His return to New York only took seven hours, and at 5 P. M. he started for Boston on the noblest steam vessel he had yet seen. At seven the next morning the steamboat reached Newport, went on to Providence, and there he took a stage coach for Boston, reaching it at half-past three, doing the forty miles of road in five hours. The whole trip from Philadelphia took thirty-two and one-half hours. Hopes, however, were held out that when the railroad to Providence should be completed and an improved steamboat should be put on the route, eight or nine hours might be deducted from the time between Boston and New York.

He returns to New York, and on October 8 starts off with the lark for Philadelphia. At Amboy, as before, he took the train, and "every one was delighted to find that the locomotives were now in operation." They start, and make various surmises as to the rate; some calculated it at twenty miles an hour. In the midst of this discussion an alarm is given from the rear and loud cries of "Stop the engine!" come from the windows of every carriage upon the train. One of the rear coaches had broken an axle, and several passengers were killed and injured. The ex-President of the United States, "Mr. Quincy Adams," was on the train. By his direction an inquest was held upon the deceased and the train moved forward to Bordentown. Philadelphia was reached late in the afternoon.

He traveled several times between Philadelphia and Baltimore by steamboat without adventures worthy of record. Again he is in New York for the New Year's Day of 1834, and at 7 A. M. on January 12 starts off again for Philadelphia. This time the steamer went to Amboy by the route outside of Staten Island to avoid the ice. Soon after starting on the train an axle of the tender broke. The engine was "speedily arrested." A sound axle was drawn from a car to replace the broken one. The car that supplied the axle was drawn out of the line, its passengers were put into the other cars, and the train went on. The railroad this time takes them eight or nine miles beyond Bordentown, where a dozen four-horse coaches are in waiting. The steamboats were not running on account of the ice.

The real terrors of the journey now began. The coaches first traveled through a narrow lane, with ruts over a foot deep. Mr. Power rode on top of the coach, and was kept busy dodging the branches of trees. The driver kept speaking of the great road soon to come, but here our traveler concluded that if his head was safer his neck was in greater peril. The frozen ruts were so bad that he fully expected the driver to give it up, but he coolly steered around all impediments. In one case he abandoned the road for a hundred yards, crashing through shrubs breast high on the right bank, where the other coaches followed him. Our traveler, who was a fox hunter among his other accomplishments, says one could almost back one of these coachmen to take his coach across country after the fox hounds. At Camden, with much trouble, the frozen river was crossed and Philadelphia was reached at four in the afternoon.

Another striking description tells of his journey from Baltimore to Washington. For this a special coach was chartered by their party, and about 9 A. M. they started. Although in winter, the air was mild as in May. The turnpike was reached—he can compare it to nothing. He says that a Cumberland fell plowed up at the end of a very wet November would be the Bath road compared to it. He looks along the "river of mud" with despair. Some of the holes they wallowed through he thought would swallow the coach. Sometimes three of the horses were down together, but his driver, Tolly by name, felt "pretty certain the coach must come through, slick as soap." After nine hours' hard driving the Capitol at Washington appeared in sight. A steep hill faced them. A road that "looked like a river of black mud" went up one side; the other side was seamed with tracks, where coaches had deserted the regular road. They, too, tried across country, as our traveler calls it, and at last reached the capital, leaving two coaches, which had left Baltimore three hours before them, "hopelessly pounded in the highway; regularly swamped within sight of port, for the capital was not over three or four hundred yards from them." The unfortunate passengers were all out assisting to unharness and unload, designing to use both teams before a single vehicle, extricating one at a time.

The Pennsylvania Railroad for the past few years has been improving its roadbed. The curves have been straightened and better time to Washington is promised. We are told of the time saved by straightening a single curve, perhaps the fraction of a minute, but it is thought well worth the cost. Similar improvements are being executed by the Baltimore and Ohio Railroad, the cutting off of fractions of minutes being aimed at. The sum total of time to be saved can be but a few minutes, or perhaps half an hour at the best. How striking is the comparison betweeen Power's nine hours' drive from Baltimore to Washington and the efforts of modern engineers to cut off five minutes from the modern railroad journey of three-quarters of an hour between the same points!

A NEW developer has been recently introduced to the public under the name of glycin. It is obtained by the action of chlor-acetic acid on amido-phenol, and is a pulverulent mass, readily soluble in water, to which a small quantity of alkali has been added. The solution thus formed is almost colorless, and keeps well by the addition of sulphite of soda. The following are two formulæ suggested by Dr. Eder: Glycin, 5 parts; sodium sulphite (cryst.), 15 parts; potassium carbonate, 25 parts; water, 90 parts. For use, dilute with three to four volumes of water; or glycin, 3 parts; sodium sulphite (cryst.), 15 parts; sodium carbonate (cryst.), 22 parts; water, 200 parts. Use full strength. Glycin is a slow developer, giving exceptionally clear whites, and promises to be of use in photo-mechanical work.