A BALLOON TRIP FROM CHERBOURG TO LONDON.

A young and already celebrated aeronaut, Mr. F. Lhoste, has twice in the past made a trip through the air from Boulogne to England, but these interesting expeditions could have been successful only through his alternate utilization of superposed currents. These circumstances put it into his head to cross the English Channel, from Cherbourg as a starting point, through a S.S.W. wind, which is one that is well established and frequent in these quarters. He and his traveling companion, Mr. J. Mangot, succeeded in their very first ascent in putting into execution the bold project that they had previously announced. Among the means employed by these explorers for traveling in a balloon over the sea, we consider as very important the use of a float for converting the balloon into a captive one, and the use of a cone anchor, permitting of the reception of water hoisted up from the ocean with a pail, since the sun at daybreak tends to cause the balloon to rise into the higher regions, and to make it lose, through expansion, a portion of the gas that it contains. With these several methods of anchoring one's self to the sea and taking in ballast, it is not impossible to undertake long balloon trips over the ocean. Messrs. Lhoste and Mangot have been good enough to give us a complete account of their fine voyage, and we shall allow them to do the talking, but not before offering them all the congratulations that they merit:

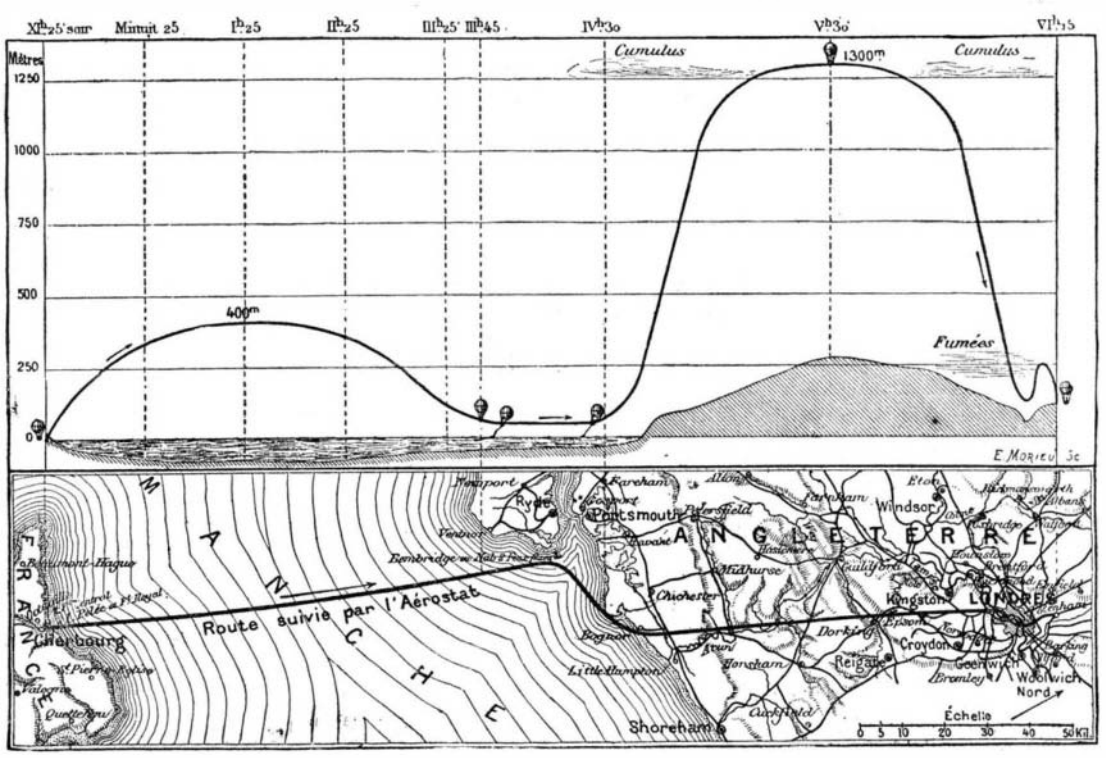

Fig. 1.—ROUTE TAKEN BY MESSRS. LHOSTE AND MANGOT IN THEIR BALLOON TRIP FROM FRANCE TO ENGLAND.

On the 29th of July, the wind being favorable, the inflation of our balloon, the Torpilleur, was begun at Cherbourg, at 6 o'clock in the evening, and was finished at 11. The arranging of the paraphernalia took half an hour. These comprised (as explained by one of us at a meeting of the Congress of Learned Societies on the 29th of April, 1886, presided over by Mr. Faye) the following: (1) A helix placed under the car, and revolved by the aeronauts; (2) a triangular sail, that started from the center and extended to a yard 15 feet in length, fastened horizontally to our ring; (3) a guide rope, 260 feet in length; (4) a cylindro-conical float, 5½ feet in length and 8½ inches in diameter; (5) a conical reservoir of a capacity of 85 gallons, and capable of serving as an anchor; (6) two pails attached to an endless rope, 525 feet in length; (7) a sheathing of cork around the car, to render the latter unsinkable; (8) ten bags, each containing 44 pounds of sand; and (9) all the necessary instruments.

At half past 11 we gave the signal for starting, and rose slowly to an altitude of 1,300 feet, which we succeeded in keeping until half past two o'clock in the morning. Scarcely had we left the roadstead when we saw that the navy was making efforts to follow our balloon by means of the Mangin electric light projector.

Despite the skill of the officers who had this important experiment in charge, we have learned with pleasure that the rays that swept the heavens never once met with us. Such want of success of men who are used to looking for torpedo boats shows how advantageous balloons would prove for approaching a given point.

The amount of ballast thrown out during the first four hours of our trip was 130 pounds, our route remaining perfectly regular. During this part of the voyage, the sky was remarkably clear around the balloon; but the horizon, on the contrary, was full of large black clouds. The brilliancy of the stars, as well as their oscillation, was very remarkable. The Milky Way gave enough light to allow of the barometer being read. We were at the end of the period of from the 26th to the 29th of July, given by the Annuaire du Bureau des Longitudes as corresponding to the occurrence of an abundant flight of meteors, with centers of emanation distributed over all parts of the celestial globe. In fact, we saw several quite brilliant shooting stars start from various points of the firmament. These sporadic meteors were white, and their mean brilliancy was that of stars of the second magnitude. We saw seven of them. The last, toward 2 o'clock in the morning, was the most brilliant of all. It left a luminous train, from which seemed to start several brilliant points, as would do the various fragments of a single sphere falling to the surface of the globe. This fire ball remained in sight for at least four seconds, and must have dropped over the ocean, so that there is little chance of its fragments having been collected. But the light was observed by a few navigators. In addition to these apparitions, we ascertained the presence of a radiant corresponding to the star Beta of the Swan, which was situated upon the limit of the zone covered by our balloon.

A large number of stars emanated from this center, and in an irregular manner. The phenomena lasted for a quarter of an hour. These stars were seen with difficulty, so that it was almost impossible to get at the number of them. Some of them shot forth at the same moment, and we saw seven or eight simultaneously.

We did not see Venus until more than an hour after she had risen. The aurora was very intense, but the brightness of the coming day worked no prejudice to the effect produced by the planet. Her aspect was truly admirable. Her brilliancy was comparable to that of an electric beacon, and much exceeded that of the Isle of Wight.

Well knowing that the appearance of daylight would give us a dangerous increase of ascensional force, we maneuvered from half past 3 o'clock in the morning to circumvent the sun's influence. For the purpose of getting to the surface of the sea, we set the helix in motion. Despite the inconvenience of operating it, the balloon was brought within 160 feet of the waves without the loss of the least amount of gas.

The float was at once let down to the surface, and as soon as it filled with water, through the orifices with which it was provided, the tension that it exerted upon its cable rendered the maneuvering easier. So we took advantage of this to set our sail.

It was then that, to our great satisfaction, we saw that we were approaching the Isle of Wight with a velocity of nine knots an hour. The resistance of the float had made us lose a notable portion of our speed, and for the purpose of making this up and obtaining a lateral direction, we trimmed our sail. The latter at once bellied, thus proving that it was acting despite its dimensions, which were small relatively to the perpendicular section of the balloon. We soon perceived that the heat of the approaching day was producing so perceptible an inflation that our float, notwithstanding its weight of 130 pounds, was skipping over the waves. Now was the moment to put in execution the last part of our plan, and to take sea water aboard as supplementary ballast. This maneuver permits of lowering the balloon at will, and bringing it within a few yards of the surface of the sea, as shown in Fig. 2.

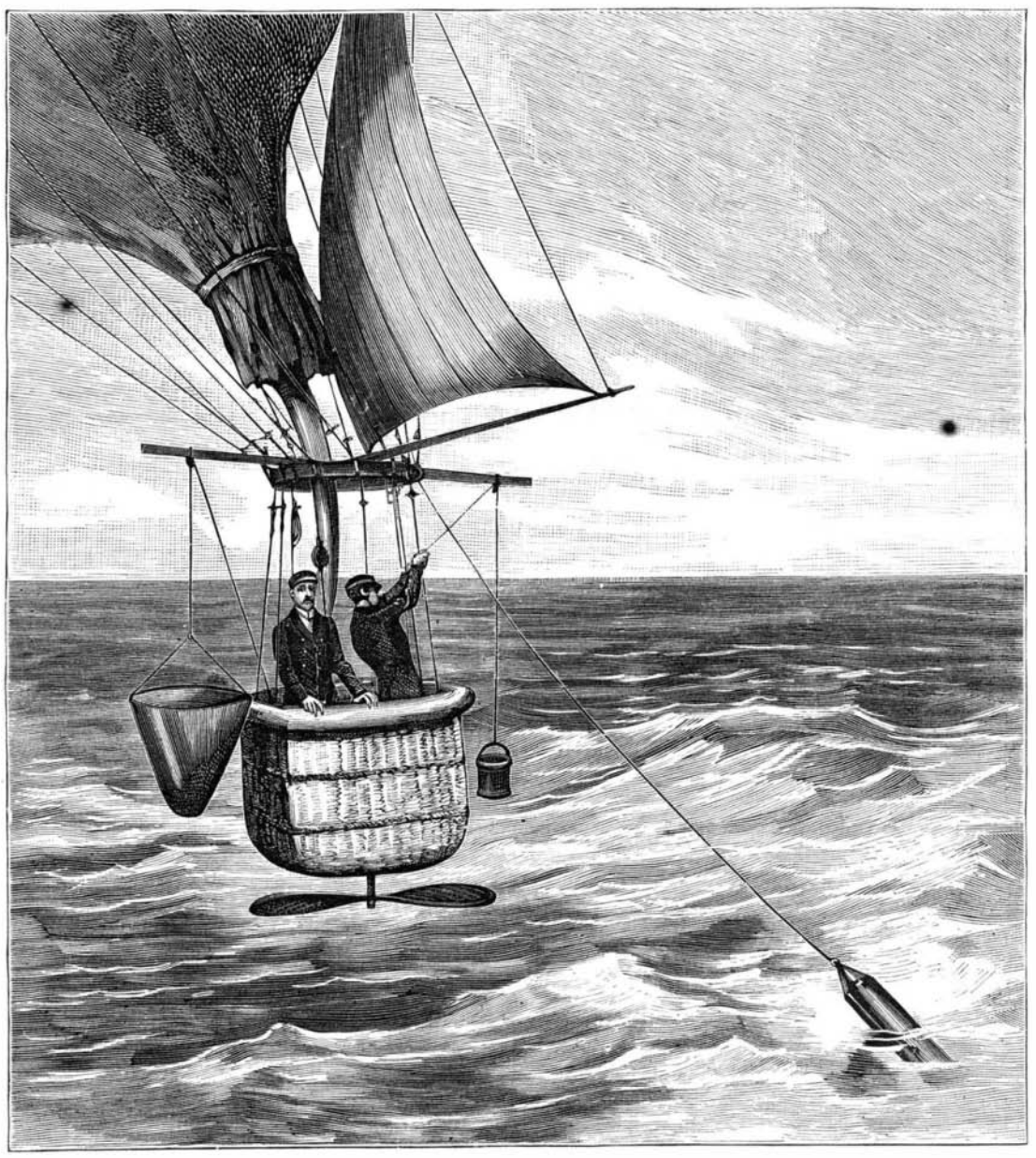

Fig. 2.—THE BALLOON TORPILLEUR, WITH ITS FLOAT TRAILING IN THE WATER.

Upon approaching the coast, our float was hauled up, after first emptying it by means of the inverting rope. Thanks to such lightening of the balloon, we rose to a height of 3,200 feet, and entered England to the west of the city of Bognor, at forty minutes past four in the morning. The limpidness and transparency of the water not far from the coast were surprising. The bottom, which was formed of rocks strewed over sand, partially covered with long seaweeds, could be seen very distinctly.

The effect of our sail had been sufficient to cause us to deviate from the course taken in the first part of the voyage; but, when given its liberty again, the balloon had resumed its first route in slightly ascending toward the north.

The sun having finally made its appearance, we rose to an altitude of 4,200 feet. As it was our intention to proceed to London, we looked attentively in the direction N.N.E. to see whether we

could distinguish either Westminster Palace or the dome of St. Paul's, which is 350 feet in height. We soon recognized the outlines of these gigantic structures. It was about 5 o'clock in the morning. Soon afterward, we saw outlined in the distance the immense course of the Thames, from its mouth as far as to beyond Windsor Castle. Keeping ourselves in the right path, we preserved our horizontality as far as to the Crystal Palace, which we left to the right.

Fearing that we might miss London and ascend toward the sources of the Thames, we opened the valve in order to bring ourselves toward London Bridge through a lower current.

This maneuver was thoroughly successful, and the great river was crossed at an altitude of 800 feet in the vicinity of the Tower. Having reascended to an altitude of 1,100 feet, we allowed ourselves to be carried along by a S.S.W. wind, which caused us to cross the city near St. Paul's, the Artillery Grounds, Victoria Park, and the entire north part of the city.

Seeing that we were leaving London, we began to descend, and, despite the violence of the wind, found it possible to stop without accident in a beautiful meadow on the banks of the river Lee. We were at Totenham Station, a charming village to the northeast of the metropolitan district.—*La Nature.*

Electric Lamps for Coal Miners.

The London *Colliery Manager* strongly urges the adoption of electric lanterns in place of the ordinary mining safety lamps. A portable electric lamp can now be made, possessing the following features: Weight, about three pounds only; illuminating power, five candles; size and shape, similar to present lamps; duration of light, ten hours; cost of repairs, charges for battery and materials, one penny for ten hours. It will be seen that in these respects there is nothing to prevent its immediate adoption, and the entire displacement of the present lamps, and even candles, in many mines where they are still in use.

A strong argument in favor of the continued use of candles in slightly gaseous mines is that they give a better light than the safety lamps, and throw a stronger light on the roof. But this argument is entirely overthrown by the electric lamp, for its illuminating power is some fifteen or twenty times as much as a Clanny lamp, and about ten times that of the ordinary miner's candle.

The small globe which contains the incandescent arc can also be placed on the top of the lamp, throwing its light all around as easily as in any other position.

The electricity in this lamp is supplied by a primary battery.

While it is satisfactory to hear that the weight is only three pounds, and therefore but little heavier than present lamps, which are generally about 2½ pounds, it would surely be a mistake to allow that consideration to stand in the way of the adoption of a lamp which offers so many and great advantages, and we should not hesitate to waive the objection if the weight were six pounds, though it would certainly be less convenient to carry for firemen and others who have much walking in the mine.

It has been said that the cost of a number of lamps would not exceed twenty shillings each, and that, if manufactured in very large quantities, the cost would be considerably less.

In respect to the consequence of breaking a lamp in gas, there is admittedly a spark exposed at the precise moment of breaking the vacuum globe; but this immediately dies out, and electricians anticipate no danger from it, in even the most explosive atmosphere.

The present lamps may receive many jars and shocks, and even be dropped to the ground, without serious injury, and frequently without putting out the light; but it is to be doubted whether their future rival, the electric, will be equally obliging, although, in this respect, much may possibly be done by constructive modifications.

The heat of the portable electric lamp is quite inconsiderable, and to hold it aslant or to splash it with water will in no way damage it. These are valuable features, and there are many others. Its light will neither affect nor be affected by the purity of the surrounding air, and it must very much increase the comfort and health of miners to remove from a large mine several hundreds of the present lamps, which, burning not only a large quantity of oil daily, but many of them also burning a large quantity of fire damp, though then giving less light rather than more, have an effect on the atmosphere which may not be noticeable with a thermometer or a chemist's appliances, but that much reduces the comfort and health of the miners, and would be gladly dispensed with by men working in hot places.

The electric lamp has also all the advantages which attach to a superior light. Nearly every kind of work may with it be more efficiently performed, especially the cleaning of the coal before loading. The dangers of hanging roofs and sides are brought into prominence, and thus great advances are made in both safety and economy.

It must be said for the present lamps that their light gives warning of the presence, in dangerous quantities, of noxious gases, and thus wards off a possibility of suffocation; and that when the existing chief security for pure air is removed, the maintenance of an adequate ventilation may be neglected, and injury to health caused thereby to the miners. But though a very convincing witness of impure air be then silenced, another will yet remain, for happily the fire damp of mines is usually accompanied by a smell which the practiced miner can readily distinguish. And, further, it must be conceded that if it is thought necessary to retain in a mine a few "safety lamps" in the hands of the firemen, the chance of an explosion emanating from a safety lamp will be lessened in at least the same proportion as the number of such lamps. But for our part, we would go to the full extent, and not retain one of the present lamps except as gas indicators for use in shot firing, and then only failing the practicability of other indicators.

We believe the adoption of electric lamps will not give rise to neglect of ventilation, but quite the reverse, for, as we have suggested, the necessity of limiting the maximum velocity of the air currents will be removed, and in the majority of large mines very large air roads have been formed, and only an increased water gauge will be needed to circulate a much larger ventilation. This may well be the next step in the onward march of the mining art.

Let us see, then, the picture which is conjured up by these thoughts for the morrow. A mine most brightly illuminated, which has not the odor of burning oil, which has no lamp stations, no lamp keys, no caution boards, but with an increased ventilation and higher air velocities, which imply no danger, but cause a purer and cooler atmosphere, and are the result of more powerful ventilating machinery without outlay on the already large airways. To complete the pleasant prospect, one thing is needed, the economical substitute for present explosives, which shall be without danger in the midst of coal dust or fire damp. The causes which lead to devastating explosions and the wholesale slaughter of the workers will then, we may hope, be altogether overcome, and each man will feel free from the incubus which now ever threatens him, and will know that his safety depends much more than formerly on his own watchfulness. The chief agencies through which a slight flaw at some point or the gross carelessness of some one man may now jeopardize hundreds of lives will then be in great measure counteracted.

NATURAL HISTORY NOTES.

Two large dog-faced baboons (*Cynocephalus anubis*, F. Cuv.) arrived at Central Park recently, and are now on public exhibition in the monkey house. They come from Nubia, Abyssinia, and are very rare. The mythological symbol called "Anubis," one of the Egyptian deities, representing a man with a dog's head, is taken in part from this species of baboon. They are even larger than Remus Crowley, the chimpanzee; and with a view of making a pleasant break in his life of solitude by the introduction of agreeable companions, the dog-faced baboons were brought up to the door of his cage. Mr. Crowley was seated at his table eating his porridge, with a napkin neatly tied around his neck, as is his custom when at meals, and was in the act of conveying a tablespoonful of the porridge to his mouth when he caught sight of the visitors from Africa, who, seated in a movable cage, were regarding him with looks of polite surprise. In an instant, he wrapped his arms around the bowl of porridge, leapt from his arm chair, and fled to the further corner of his cage, where, with the big wooden spoon held aloft, he assumed a threatening attitude. This inhospitable conduct on the part of Mr. Crowley was responded to with fierce barks by the baboons without, who showed their teeth savagely and gave other evidence of a desire to make Mr. Crowley's nearer acquaintance. Under the circumstances it was thought best to put the baboons in a separate cage.

Two very large cranes (*Grus americana*), not before seen here, have been placed in the sea lion pen. They are about 4½ feet in height, and hence larger even than the sand hill crane. One is in full plumage and white, while the other is of a beautiful light brown.

A pair of mule deer (*Cervus macrotis*) are the most recent arrivals in the deer park. Their great ears, coarse hair, and big-jointed limbs give them a striking appearance. They are dark gray in color and the tips of their tails are black, while that of the Virginian deer is white. When full grown, these deer will stand nearly five feet high at the withers. The first deer of this variety ever in Europe reached the London Zoological Gardens in 1879, being sent thither through Mr. Conklin, the superintendent of the Central Park menagerie.

The copperhead snake (*Ancistroden contortrix*) has now with her a litter of young copperheads curiously spotted and striped.

A pair of caique (*Caica melanocephala*), a species of "parrakeet," as the paroquet is now called by naturalists, was recently presented to the city, and are now to be seen in the parrot house. This is the first time they have been on public exhibition here. Their coloring is very striking; head black, throat lemon colored, back of neck orange, breast white, back and tail green. Their habitat is Demerara; and sitting, as they constantly do, close together on the perch, they keep up a constant chatter.

A pair of Upland geese (*Bernicla magellanicus*) have also arrived. These geese are found only near the Straits of Magellan and the Falkland Islands, which regions being colder than this, no trouble is anticipated in acclimating them. The male is white, with breast and under parts barred with black, while the female is brown with black bars. They breed freely while caged, differing in this respect from most wild birds.

Six pythons, each ten feet long, recently came here from India, and, though intended for the Central Park collection, could not be accepted through lack of funds, and four of them were lately sent to the Philadelphia Zoological Garden. They are of the class *Pythonidæ molurus*, the same as that supposed to have been slain by Apollo. It is the same description, too, which Virgil describes as attacking Laocoon, the Trojan priest of Apollo, who urged his comrades not to admit the wooden horse of the Greeks through the walls of Troy, which in reality contained a band of armed men, and led to the discomfiture of the Trojans.

Professor Torrey, in his "Theory of the Fine Arts," complains that the famous statue of "Laocoon," representing Laocoon and his two sons within the folds of two pythons, as pictured by Virgil, is defective because of the misconception by the artist of the instincts of the python in biting. Mr. Frank Thompson, on the other hand, who imported the pythons recently shipped to Philadelphia, and who has hunted them in Africa and India, tells the writer that Professor Torrey is in error as to this. Taking one from a box at his headquarters at 411 East 56th Street, recently, he exhibited its teeth, or rather the python did it for him. Both jaws were seen to contain a myriad of serrated teeth, and Mr. Thompson's right hand, which is now gashed about the thumb, is a striking illustration of the fact that the python can and does bite. He bites to secure his prey, and holds on until his folds are securely wrapped about it. Then he kills it by constriction. The python is not difficult to capture, and he tells the following story of his last hunt for it in Java: The Malay attendant having found a hole among the rocks where he believed a python lay hid, filled his turban with sand, which he spread out before it. The next morning, the sand showing the monster to have gone out and returned, a trap was made of bamboo and placed immediately against the mouth of the lair, and the following night a great python crept in and was easily secured.

Petroleum V. Nasby on Socialism.

I hate a capitalist, no matter how he becum one. I hate the meenspirited, grovelin retch wich will work ten or more hours a day, deprivin hisself uv beer, and terbacker, and cards, and bilyards, and hos racin, and sich, savin peny by peny til he hez ground enough out of the world to hev a shop uv his own, and to employ other men to slave fur him, and thus go on akumulatin til he owns things. Such men are monopolists, and the enemies of labor, and grinders.

I hold that the possession of a ten dolar bil makes a monopolist, and al sich shood be crushed. Ez hevin a ten dolar bil makes a man a monopolist, his monopolism increases jist in proporshen to the ten dolar bils he hez. The owner of a factory is a enemy to the human race, and ez for the man who bilds a railroad, he

> "Is a monster uv such hidgus meen,
> That to be hated needs but to be seen."

My hatred of railroad managers is intens. It commenst with the first time I wuz droped off the hind platform uv a trane for not payin fare, and hez increst with every repetishun uv the ofense, which generally happens every time I want to go anywhere. I lothe the ralerode monopolist.

A grindin monopolist is any man wich has anything. Whenever a man hez saved anything, he becomes a capitalist, and ez capitalists are dangerous to labor, he should be made to divide it up so ez to be on a ekality with them wich never saved nothing.

The mechanic or workingman wich saves so ez to own a house or a farm becomes a capitalist, and consekently a grindin monopolist, and ez accumolashens are dangerous to labor, wat he hez shud be confiskated and divided up among us wich hezn't anything. Property is a crime.

I ain't jist shoor that I hev got the socialistic doctrine down fine enuff, but I think these definishuns will do, espeshly when you howl em under a reg flag to luvers uv humanity wich is chuck full of stale beer.