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THE CRITIC OF ARGUMENTS.

I. EXACT THINKING.

BY CHARLES S. PEIRCE.

“CRITIC” is a word used by Locke in English, by Kant in German, and by Plato in Greek, to signify the art of judging, being formed like “logic.” I should shrink from heading my papers *Logic*, because logic, as it is set forth in the treatises, is an art far worse than useless, making a man captious about trifles and neglectful of weightier matters, condemning every inference really valuable and admitting only such as are really childish.

It is naughty to do what mamma forbids ;
Now, mamma forbids me to cut off my hair ;
Therefore, it would be naughty for me to cut off my hair.

This is the type of reasoning to which the treatises profess to reduce all the reasonings which they approve. Reasoning from authority does, indeed, come to that, and in a broad sense of the word authority, such reasoning only. This reminds us that the logic of the treatises is, in the main, a heritage from the ages of faith and obedience, when the highest philosophy was conceived to lie in making everything depend upon authority. Though few men and none of the less sophisticated minds of the other sex ever, nowadays, plunge into the darkling flood of the medieval commentaries, and fewer still dive deep enough to touch bottom, everybody has received the impression they are full of syllogistic reasoning ; and this impression is correct. The syllogistic logic truly reflects the sort of reasoning in which the men of the middle ages sincerely put their trust ; and yet it is not true that even scholastic theology was sufficiently prostrate before its authorities to have possibly been, in the main, a product of ordinary syllogistic thinking. Nothing can be imagined more strongly marked in its distinctive character than the method of discussion of the old doctors. Their one recipe for any case of difficulty was a distinction. That drawn, they would proceed to show that the difficulties were in force against every member of it but one. Therein all their labor of thinking lies, and thence comes all that makes their philosophy what it is. Without pretending, then, to pronounce the last word on the character of their thought,

we may, at least, say it was not, in their sense, syllogistic ; since in place of syllogisms it is rather characterised by the use of such forms as the following :

Everything is either *P* or *M* ;

S is not *M* ;

∴ *S* is *P*.

This is commonly called disjunctive reasoning ; but, for reasons which it would be too long to explain in full, I prefer to term it dilemmatic reasoning. Such modes of inference are, essentially, of the same character as the dilemma. Indeed, the regular stock example of the dilemma (for the logicians, in their gregariousness, follow their leader even down to the examples), though we find it set down in the second-century commonplace-book of Aulus Gellius, has quite the ring of a scholastic disquisition. The question, in this example, is, ought one to take a wife ? In answering it, we first distinguish in regard to wives (and I seem to hear the Doctor subtilissimus saying : *primo distinguendum est de hoc nomine uxor*). A wife may mean a plain or a pretty wife. Now, a plain wife does not satisfy her husband ; so one ought not to take a plain wife. But a pretty wife is a perpetual source of jealousy ; so one ought still less to take a pretty wife. In sum, one ought to take no wife, at all. It may seem strange that the dilemma is not mentioned in a single medieval logic. It first appears in the “*De Dialectica*” of Rudolph Agricola.* But it should surprise nobody that the most characteristic form of demonstrative reasoning of those ages is left unnoticed in their logical treatises. The best of such works, at all epochs, though they reflect in some measure contemporary modes of thought, have always been considerably behind their times. For the methods of thinking that are living activities in men are not objects of reflective consciousness. They baffle the student, because they are a part of himself.

“Of thine eye I am eye-beam.”

says Emerson's sphynx. The methods of thinking men consciously admire are different from, and often, in some respects, inferior to those they actually employ. Besides, it is apparent enough, even to one

* Or possibly in some other Renaissance writing. My memory may deceive me ; and my library is precious small.

who only knows the works of the modern logicians, that their predecessors can have been little given to seeing out of their own eyes, since, had they been so, their sequacious successors would have been religiously bound to follow suit.

One has to confess that writers of logic-books have been, themselves, with rare exceptions, but shuffling reasoners. How wilt thou say to thy brother, Let me pull out the mote out of thine eye; and behold, a beam is in thine own eye? I fear it has to be said of philosophers at large, both small and great, that their reasoning is so loose and fallacious, that the like in mathematics, in political economy, or in physical science, would be received in derision or simple scorn. When, in my teens, I was first reading the masterpieces of Kant, Hobbes, and other great thinkers, my father, who was a mathematician, and who, if not an analyst of thought, at least never failed to draw the correct conclusion from given premisses, unless by a mere slip, would induce me to repeat to him the demonstrations of the philosophers, and in a very few words would usually rip them up and show them empty. In that way, the bad habits of thinking that would otherwise have been indelibly impressed upon me by those mighty powers, were, I hope, in some measure, overcome. Certainly, I believe the best thing for a fledgling philosopher is a close companionship with a stalwart practical reasoner.

How often do we hear it said that the study of philosophy requires *hard thinking*! But I am rather inclined to think a man will never begin to reason well about such subjects, till he has conquered the natural impulse to making spasmodic efforts of mind. In mathematics, the complexity of the problems renders it often a little difficult to hold all the different elements of our mental diagrams in their right places. In a certain sense, therefore, hard thinking *is* occasionally requisite in that discipline. But metaphysical philosophy does not present any such complications, and has no work that *hard thinking* can do. What is needed above all, for metaphysics, is thorough and mature thinking; and the particular requisite to success in the critic of arguments is exact and diagrammatic thinking.

To illustrate my meaning, and at the same time to justify myself, in some degree, for conceding all I have to the prejudice of logicians, I will devote the residue of the space which I can venture to occupy to day, to the examination of a statement which has often been made by logicians, and often dissented from, but which I have never seen treated otherwise than as a position quite possible for a reputable logician. I mean the statement that the principle of identity is the necessary and sufficient condition of the validity of all affirmative syllogisms, and that the prin-

ciples of contradiction and excluded middle, constitute the additional necessary and sufficient conditions for the validity of negative syllogisms. The principle of identity, expressed by the formula "*A is A*," states that the relation of subject to predicate is a relation which every term bears to itself. The principle of contradiction, expressed by the formula "*A is not A*," might be understood in three different senses; first, that any term is in the relation of negation to whatever term is in that relation to it, which is as much as to say that the relation of negation is its own converse; second, that no term is in the relation of negation to itself; third, that every term is in the relation of negation to everything but itself. But the first meaning is the best, since from it the other two readily follow as corollaries. The principle of excluded middle, expressed by the formula "*Not not A is A*," may also be understood in three senses; first, that every term, *A*, is predicable of anything that is in the relation of negation to a term which is in the same relation to it, *A*; second, that the objects of which any term, *A*, is predicable together with those of which the negative of *A* is predicable together make up all the objects possible; third, that every term, *A*, is predicable of whatever is in the relation of negation to everything but *A*. But, as before, the first meaning is to be preferred, since from it the others are immediately deducible.

There is but one mood of universal affirmative syllogism. It is called *Barbara*, and runs thus:

$$\begin{aligned} \text{Any } M \text{ is } P; \\ \text{Any } S \text{ is } M; \\ \therefore \text{Any } S \text{ is } P. \end{aligned}$$

Now the question is, what one of the properties of the relation of subject to predicate is it, with the destruction of which alone this form of inference ceases invariably to yield a true conclusion from true premisses? To find that out the obvious way is to destroy all the properties of the relation in question, so as to make it an entirely different relation, and then note what condition this relation must satisfy in order to make the inference valid. Putting *loves* in place of *is*, we get:

$$\begin{aligned} M \text{ loves } P; \\ S \text{ loves } M; \\ \therefore S \text{ loves } P. \end{aligned}$$

That this should be universally true, it is necessary that every lover should love whatever his beloved loves. A relation of which the like is true is called a *transitive* relation. Accordingly, the condition of the validity of *Barbara* is that the relation expressed by the copula should be a transitive relation. This statement was first accurately made by De Morgan; but it is in substantial agreement with the doctrine of

Aristotle. The analogue of the principle of identity, when *loves* is the copula of the proposition, is that everybody loves himself. This would plainly not suffice of itself to make the inferential form valid; nor would its being false prevent that form from being valid, provided loving were a transitive relation. Thus, by a little exact thinking, the principle of identity is clearly seen to be neither a sufficient nor a necessary condition for the truth of *Barbara*.

Let us now examine the negative syllogisms. The simplest of these is *Celarent*, which runs as follows:

Any *M* is not *P*;
Any *S* is *M*;
∴ Any *S* is not *P*.

Let us substitute *injures* for *is not*. Then the form becomes

Every *M* injures *P*;
Every *S* is *M*;
∴ Every *S* injures *P*.

This is a good inference, still, no matter what sort of relation *injuring* is. Consequently, this syllogism is dependent upon no property of negation, except that it expresses a relation. Let us, in the last form, substitute *loves* for *is*. Then, we get

M injures *P*;
S loves *M*;
∴ *S* injures *P*.

In order that this should hold good irrespective of the nature of the relation of *injuring*, it is necessary that nobody should love anybody but himself. A relation of that sort is called a *sibi-relation* or *concurrency*. The necessary and sufficient condition of the validity of *Celarent* is, then, that the copula should express a *sibi-relation*. This is *not* what the principle of identity expresses. Of course, every *sibi-relation* is transitive.

The next simplest of the universal negative syllogisms is *Camestres*, which runs thus:

Any *M* is *P*;
Any *S* is not *P*;
∴ Any *S* is not *M*.

Substitute *injures* for *is not*, and we get,

Every *M* is a *P*;
Every *S* injures every *P*;
∴ Every *S* injures every *M*.

This obviously holds because the *injuring* is to *every* one of the class *injured*. It would not do to reason,

Every *M* is a *P*;
Every *S* injures a *P*;
∴ Every *S* injures an *M*.

We see, then, that the principal reason of the validity of *Camestres* is that by *not*, we mean *not any*, and not

not some. In logical lingo, this is expressed by saying that negative predicates are distributed. But the condition that the copula expresses a *sibi-relation* is also involved.

The remaining universal negative syllogisms of the old enumeration, *Celantes* and *Cesare*, depend upon one principle. They are:

<i>Celantes</i>	<i>Cesare</i>
Any <i>M</i> is not <i>P</i> ;	Any <i>M</i> is not <i>P</i> ;
Any <i>S</i> is <i>M</i> ;	Any <i>S</i> is <i>P</i> ;
∴ Any <i>P</i> is not <i>S</i> .	∴ Any <i>S</i> is not <i>M</i> .

Substituting *fights* for *is not*, we get

Every *M* fights every *P*;
Every *S* is *M*;
∴ Every *P* fights every *M*.

Every *M* fights every *P*;
Every *S* is *P*;
∴ Every *S* fights every *M*.

What is requisite to the validity of these inferences is plainly that the relation expressed by *fights* should be its own converse, or that everything should fight whatever fights it. This is the analogue of the principle of contradiction.

We see, then, that the principles of universal syllogism of the ordinary sort are that the copula expresses a *sibi-relation*, not that it expresses an agreement, which is what the principle of identity states, and that the negative is its own converse, which is the law of contradiction.

The authors who say that the principle of identity governs affirmative syllogism give no proof of what they allege. We are expected to see it by "hard thinking." I fancy I can explain what this process of "hard thinking" is. By a spasm induced by self-hypnotisation you throw yourself into a state of mental vacancy. In this state the formula "*A* is *A*" loses its definite signification and seems quite empty. Being empty, it is regarded as wonderfully lofty and precious. Fired into enthusiasm by the contemplation of it, the subject, with one wild mental leap, throws himself into the belief that it must rule all human reason. Consequently, it is the principle of syllogism. If this is, as I suspect, what hard thinking means, it is of no use in philosophy.

As for the principle of excluded middle, the only syllogistic forms it governs are the dilemmatic ones.

Any not *P* is *M*;
Any *S* is not *M*;
∴ Any *S* is *P*.

Putting *admiring* for *not*, we have:

Everything admiring every *P* is an *M*;
Every *S* admires every *M*;
∴ Every *S* is a *P*.

To make this good, it must be that the only person who admires everybody that admires a given person is that person. This is the analogue of "everything is not *A* is *A*," which is the principle of excluded middle.

A STUDY OF FOLK-SONGS.

BY L. J. VANCE.

IN the last number of the *Journal of American Folk-lore* the editor, Mr. Newell, says that "the time has not yet come for a comparative study of folk-song." It is argued that the materials for such a study are wanting. That may be so—in part. But many students of folk-lore will find the materials already gathered sufficient for their purposes; for example, to show the evolution of song. The evidence is about all in. If any branch of folk-lore has been thoroughly explored and the results published, it is popular song. It is not likely that many new discoveries will be made to change commonly-accepted opinions on the subject.

The significance and value of folk-song are now pretty well understood. Whenever the folk-song has sprung up and flourished it has come from the life of the people, and has grown out of the soil they trod and ploughed. Hebrews, Greeks, and Romans all had these songs, and while the house-wives lightened their domestic labors with their country melodies, the men ploughed many a furrow to their tune, and forged the war-weapon to their rhythm. Centuries later the Mastersingers came and chanted rude poetic strains.

"As the weaver plied the shuttle, wove he too the mystic rhyme;
And the smith his iron measures hammered to the anvil's chime."

With the migration of the German, the warrior Teuton sang as he lived. The greater part of his life was devoted to hunting and fighting, broken into by rude enjoyment and wild revelry. Now and then his land-song was attuned in peaceful key, but more often urging the singer to battle-axe and oar with a dash and a vigor that made Roman enemies fear him as a fierce and cunning foe. It is strains such as these—strains which have sprung out of conflict and plundering expeditions, and out of the every-day joys and sorrows—that reflect human nature in its natural moods and aspects.

Mr. Darwin refers to that deep-seated instinct of man, which impels him in all moments of strong or intense feeling to break out into a kind of chant. Such emanations well up from the heart: the lover describing the charms of the maid, the sower casting seed, the reaper swinging his sickle, the shepherd minding his flock, the fisherman mending his nets, the soldier on the march, the mourner at the grave—these chanted a something, when music as an art still was not, and what such was is more or less faithfully reflected in *Volkslieder*, and in every country's national melodies.

Above all, folk-song tells of the existence and every-day life of the workers, in-door and out-door, and that has, for us, a special value and significance. It is the habit of uncultured peoples to break out into song at the slightest provocation. Many individuals can compose *extempore*. Thus the New Zealand singers "describe passing events in *extempore* songs." The Bannans, says Park, lightened their labors with songs, "one of which was composed *extempore*, for I was the subject of it." The Kirghese in Asia, says the Rev. Dr. Lansdell, "have a keen appreciation of singing and improvisation. No young girl commands such admiration of men as one who is clever at singing *repartee*; and no men are so liked by the Kirghese girls as good and able singers."

In the lower stages of culture the *improvisatore* often claims to be inspired. He obtains his songs from spirits. In Australia the "song-makers" are Bira-arks, or Shamans. According to Mr. A. W. Howitt, the Bira-arks of the Kurnai tribe "profess to receive their inspiration from the ghosts (*mrart*) as well as the dances, which they were supposed to have seen first performed in ghostland." The Eskimos have singing-masters, who instruct both young and old in the ancient songs. The natives build large houses for singing. The master of the singing house is a *tornaq*, or spirit, with whom the Angakut, or Shaman, is supposed to be in communication.

Dr. Franz Boas, who has made a careful study of Eskimo songs, says that "the form of both old and new songs is very strict." There must be no deviation from the words and rhythms fixed for all time. According to the same authority, the Kwakiutl Indians of British Columbia are very particular in this respect, and any mistake made by a singer is considered opprobrious. "On certain occasions the singer who makes a mistake is killed." The savage, in the practice of his religion, regards song as a very serious matter. His medicine-men obtained the verses from the spirits, and they would be offended by any change.

Perhaps the most irregular kind of singing are the dirges, or "laments," which are chanted over the graves of the dead. And yet a comparative study of these mournful tunes, will show that the wailings of widely-separated people have elements in common. The rudest funeral chants consist simply of howlings and cryings and irregular callings. The words of a death dirge sung by the Senél Indians of California, as given by Mr. Powers, are as follows:

"Hel-lel-le-Jy,
Hel-le-la,
Hel-le-lu."

The Basques of Spain ululate thus:

"Lelo-il-Lelo, Lelo dead Lelo
Lelo il Lelo
Lelo zarat, Lelo zara
Il Lelou killed Lelo."

There seems to be some connection between this and the Linus or Ailinus of the ancient Greeks and Egyptians, which Wilkinson connects with the Coptic "ya lay-lee-ya-lail." Attention is called to the opinion that the Greek verb ὀλοῦν, the Latin *ululare*, and the English *howl* and *wail* are probably derived from this ancient form of lamentation.

Out of the songs that accompanied the dance grew the ballad. Our idea is that many ballads are simply versified folk-tales. As Dr. Boas has pointed out, a great number of Eskimo folk-stories must be regarded as recitatives; some are recited entirely in rhythmic phrases, and some only begin with a musical phrase. The bulk of the ballads are simply versified narratives of some hero, of some exploit, of some romance, or of some tradition. Thus we have three classes: (1) romantic ballads, which deal principally with love themes; (2) hero ballads, which recount the exploits and adventures of a popular character; and (3) historical ballads, which preserve popular legends and traditions.

It is not necessary here to enter into a comparative study of popular ballads. Those who are interested in the diffusion of folk-tales, legends, and superstitions will find the ballads a perfect mine for investigation. Some idea of the lore imbedded in this form of song may be gained from Professor Child's comparative study of "English and Scottish Ballads."

It is interesting, however, to observe how racial traits shine forth in folk-songs. What strong, sturdy manliness is revealed in the land-songs of the Teuton! His faithfulness to a friend, his constancy as a lover, his sincerity in speech, are all marked. Contrast the sturdy bluntness of the Englishman with the delicacy of expression of the Italian. The genial nature of the Tuscan is visible in all he sings—in the confiding appeal, in the graceful salute, in the kindly moralising couplet. What fire and fancy light up the folk-songs of Spain! See how the character of the French, so vivacious and sparkling, is met in the *chansons*. Strongly marked is the Slavic character—even more so is the Celtic character, with its sensitive, impetuous and deep swellings of pathos and weird melancholy.

Between the ballad, which is the song of the people, and the epic, which is the song of the chiefs or heroes of the people, we place the Norse Sagas, and the Kalevala of the Finns. The Kalevala is composed of a large number of *runots*, or cantos, which were sung by inspired bards, called Runoias, to beguile the monotony of the long, dark winters. The Finnish epic strings together, as it were, connected ballads, or, to quote Mr. Andrew Lang, it presents "the ballads as they are produced by the events of a continuous narrative."

Finally, in the Italian epic, "Orlando Innamorato," we have a remarkable example of the course of evolution in folk-song. The point is important, and seems to have escaped the attention of folk-lorists. The *cantastorie* on the street-corners used to begin and end their songs by a greeting and adieu. In this *saluto* and *commiato* the audience were usually recommended to the care of Heaven or the Saints. These rude greetings of the street-singer become a series of informal preludes in the first book of the "Innamorato."

A few instances will serve to show how Ariosto followed the custom of the singers. The second canto of Book I. opens thus:

"Fair Sirs, in the last canto I left off,
Where at the Saracen Astolfo jeers, etc."

Boiardo closes the 19th canto of Book I. as follows:

"But since this canto over long hath been
Another day the rest I will recount;
If you return to hear the pleasant story,
So keep ye all the mighty king of glory."

In a former number of *The Open Court* I showed the great value of folk-song as an art factor. Out of it and the few notes of Gregory—known as the Gregorian tones—the vast structure of modern musical art has grown.

CHOLERA CONSIDERATIONS.

BY S. V. CLEVENGER, M. D.

IN my boyhood I heard a sermon directed toward proving that scourges, such as yellow fever and cholera epidemics, were punishments for irreligion, Sabbath breaking, and blasphemy of various kinds, particularly that arrogant blasphemy of science which undertook to substitute investigation of natural causes for blind servience to the inscrutable will of the Deity. The cause and effect association were not at all clear, but it would have been blasphemous to have called attention to such a thing.

The discourse was divided into heads, with a final injunction to escape the wrath to come by general good behavior, mainly such as regular church attendance, involving prompt pew-rent payment.

In these maturer years I conclude that Ignorance (with a big I), and too much so-called religion are responsible for these same scourges, and we may profitably consider Asiatic cholera a discourse divisible also into parts, or heads, as to:

1. The causes of cholera;
2. Its nature;
3. Its prevention.

And remembering congregational needs we must avoid technical medical terms as far as possible, though such avoidance invariably entails discursiveness, which in turn is to be curtailed.

At first thought, the absurd religious antics of a Turk or Hindu, on the Bosphorus, Red Sea, and Ganges, need concern us about as much as the sea-serpent, Chataqua philosophy, and Schiapereilli's canals in Mars; but devastating plagues that sweep the world in all history have originated in the centres of densest ignorance to be conveyed with lessened effect to the relatively more enlightened parts.

And this relativity has been invariably with reference to increased cleanliness as to food, drink, habits, intercourse, ideas, knowledge of the environment generally, and decreased religious fervor, disposition to be priest-ridden, dirty, credulous, supersti-

tious, and brutal generally. The thoughtful, cleanly races are the breakers against which the pestilence rages in vain, and the bigoted, uncleanly, superstitious, afford the materials for its devastation.

The reasonings of Pettenkofer and recently made investigations of Dr. Shakespeare demonstrate that oriental pilgrimages to Mecca and the upper Ganges are the means by which cholera is propagated. In these "holy" spots the multitudes of devout swarm and reek; the filthy "holy" wells from which they drink, and in the waters of which they bathe (not wash, for that would be irreligious), have accumulated ages of defilement. Dr. Shakespeare says it would require two soldiers to each pilgrim to preserve order and cleanliness and induce observance of the most ordinary decency or precautions against the spread of all sorts of diseases that are fostered by filth.

Those who live to return to their homes carry cholera thither, and climatic conditions such as extreme heat and moisture, worse in some years than others, favor the germ growth and dissemination; just as certain seasons are better for some kinds of plants than others.

When Mecca is the starting point the disease takes the Southern or Mediterranean route through Italy and Spain. Here again, ignorance, superstition, and filth give it fresh impetus. Physicians are regarded as responsible for the plague and are slain, the shrines that Garibaldi closed are opened again, and the dirty wretches crowd about their wooden and stone images, imploring relief from them.

When India is the nidus, the famine stricken, abjectly ignorant, and religious peasantry of Russia afford fertilisation enough to enable it, according to official reports, to kill three thousand daily. Making allowance for peculiarities of Russian statistics, this may mean ten or twenty thousand daily. Physicians are also murdered in that country.

Wherever ports of entry afford the conditions upon which cholera thrives, crowding and filthiness, new distributing depots for the disease are created from which in radiating lines it spreads, to be fought more or less successfully in distant, more intelligent lands.

While America may properly claim to be less ignorant in general than many other nations, this is not saying much, and at this crisis it would be as well to take stock of our intelligence with regard to epidemic prevention, and what elements of ignorance and malevolence we may have to combat.

The efforts of Dr. Holt of New Orleans in fighting yellow fever admission were rendered unnecessarily troublesome by many selfish interests opposed to his work which was wholly for the public good. He found powerful political, clerical, and mercantile enemies, intent upon some comparatively trifling gain, arrayed against him, and occasionally a press subsidised in the interests of ignorant (and in this particular, murderous) greed. A few days delay in a cargo or mail delivery, or arrival of persons, the unavoidable damage to some kinds of merchandise through its perishability or subjection to sulphurous acid gas, were considerations outweighing the certain introduction of pestilence. He was harassed in every conceivable way.

Behind our city smoke inspector are city ordinances and equipments of police and other means to suppress the smoke nuisance, but greed and ignorance (which are about the same thing, often) continue to make the atmosphere inky and sulphurous. Our national custom-house methods are about as effective. A ten dollar bill in the upper tray of a trunk, or a direct present of a silk umbrella, and other such means, enable goods to escape close inspection, and it would not be remarkable if political sanitary appointees for similar considerations might allow infection to slip into our cities.

All sanitary officialism is not corrupt; neither is it, in the very nature of things, invincible. When public places of all kinds are rewards for political jobbery, it is not possible that jobbery will cease with the appointment. About the first thing the "heeler" who gets an office thinks of is what he can make out of it, and such a matter as public health would be the least consideration under the sun with him.

If Canadian sanitary methods, as alleged, are worse than ours, and a mere sham and pretense to enable a few officials to draw salaries, our system should be all the more rigid, and we cannot make it serviceable until we recognise the sources which oppose it.

Intelligent travellers, in the main, gracefully put up with the inconveniences of quarantine, recognising its public necessity; but many importers of rags, and persons, political or mercantile, interested in smuggling immigrants among us, would not hesitate an instant for private gain to risk the lives of all their countrymen.

When the street cleaning necessity was brought up in aldermanic circles, petty private interests threatened, for awhile, to suppress its consideration.

It will be a reasonable average of stealages to estimate that when county commissioners control public charity funds, the county hospital patients will receive the benefit of seventy-five per cent. of the moneys appropriated, the poor-house paupers about fifty per cent., and the insane asylum inmates between that figure and twenty-five per cent. In proportion to the helplessness of those "cared for," and their inability to protest, or the likelihood of their not being believed if they did make exposures, the politician's chances for "boodle" increases.

If the quarantine methods are not intelligently watched, by others than those who have political interests, as the greater the system grows and as the excitement increases, the better will become the opportunities to make fussy parades and rob the public treasures.

We dare not neglect such reflections in view of next year's Exposition, and all it involves. Nor is this the only direction in which to look for irrational opposition. People who may in general lay claim to being educated and intelligent are often bigotedly ignorant or misinstructed in certain particulars. Anti-vivisectionists doubtless are, in the main, a well-meaning set of people, but being uninstructed in medical matters, they often rise to hysterical opportunities that would astound the butcher, fisherman, or rat-killer, if a diversion occurred in their directions and away from the doctors'. These misguided enthusiasts would not, like the Russian, Italian, and Spaniard, go so far as to kill the physician, but with a comparable ignorance they would stay his studies from about the same motives that led to attacks upon Harvey for announcing his discovery of the circulation of the blood.

It was through what is usually understood as vivisectional methods that Koch found the cause of cholera. By isolation of suspected germs and their cultivation, there remained but the final test as to animal susceptibility. Animals were used to demonstrate the veritability of the find, and they responded to the tests by dying promptly with the classical symptoms, and their dissections revealed the pathological anatomy usual in Asiatic cholera.

So much for the ignorance of anti-vivisectionists. Next we may consider the equally ignorant cry of *Cui Bono*.

When any step forward in science is taken, the value of which is not grossly apparent to stupidity, forthwith some daily newspapers childishly deride it as useless. So when the cause of cholera in the comma bacillus was announced there was a protest against so much attention being paid to the discovery. "What we want," they said, "is a cure for our complaints, not tiresome discussions as to causes." A savage could have expressed no more

ignorance of the fact that first and foremost, the causes being ascertained, prevention and cures can be more successfully sought.

Instead of trusting to amulets, rabbits' feet, hoodoo bags, incantations, or other such devices which empiricism considers worthy of trial, the cause of a disorder being discovered, instantly the folly of trusting to superstitious remedies is apparent, and means become more rational in proportion to our better knowledge of causes. Koch was engrossed in studying the life history and behavior of his germs, and left inferences for prevention to others. He found that alkaline media were absolutely necessary for the cholera germ sustenance, and that acids destroyed it. Long before this pathologists knew that the lower part of the small intestine was the seat of the greatest ravages of cholera, but the fact that this portion was most alkaline, and that organs that were normally acid were not changed, suggested nothing to therapeutists.

Putting together the knowledge gained in pathology and bacteriology, it would be safe to infer that avoidance of alkalies and indulgence in acids would insure some protection, and we find already at hand enthusiastic accounts of how sulphuric acid had been extensively tried in former epidemics with gratifying success.

Though this sulphuric acid treatment antedated any of Koch's researches, it was not generally resorted to, because there were myriad other preventives in vogue; and while we now know that there is a scientific basis for the use of acids, their former use seemed no better justified than asafœtida bags hung from the neck, or anointing with the consecrated oil of Brigham Young.

Thousands could attest their belief in the acid prevention, but so could other thousands in other things they had used. The eternal *post hoc* misleading them in the latter instance and causing logical and illogical deductions to be rated together.

Whatever other things may or may not do, the discovery of the cause enables a scientific endorsement of thorough further trial of sulphuric acid as a means of prevention (about ten drops to the quart of water, to be used occasionally instead of drinking water).

Inducements are being held out to the uninformed to purchase this, that, and the other drug or mineral water as preventives, and vendors do not seem to know or care that such things are more than likely to increase the epidemic. Astringents and opiates, or mineral waters are the bases of such stuff, and in previous visitations have been demonstrated as harmful, to say nothing of the recent scientifically ascertained reasons against using alkalines which are largely components of mineral and some "soda" waters.

It would be well for us to hold our opinions in reserve in regard to the recent clashing between the national and New York quarantine authorities. Political intrigue often makes "the worse appear the better cause," and the State physicians may be unduly interfered with from motives other than those seeking the public good.

Many pestilences such as the "black death" are now unknown in Europe, where they were as formidable as small pox, which before Jenner's discovery decimated the large cities. To-day Constantinople, formerly the nucleus of that pest, enjoys unearned the same immunity that London has. And there are anti-vaccinators occasionally found, in spite of widespread knowledge.

Malarial diseases, before the use of cinchona bark was begun, were as formidable as any sicknesses mentioned. Quinine is swallowed to-day with but little thought of what we would have to endure without it.

Enlightenment will be America's barrier against the invasion, and if it were possible to confer it upon the Asiatics, cholera would be forever eradicated; but that is altogether too much to hope for. The "Light of Asia," or any other religious emanation elsewhere, has not done for the sufferers of the world what the "Light of Science" has accomplished.

CURRENT TOPICS.

THE tragedy at Homestead and the theories growing out of it still agitate society. The September magazines are full of speculations about it; and solutions of the Capital and Labor problem are numerous and various as recipes in a cookery book; combination, co-operation, legislation, arbitration, education, nationalisation, confiscation, with fifty other solutions ending in t,i,o,n, shun, and finally, the most visionary of them all, the sharing in the profits, but not in the losses of the business. The schemes are all well-meaning enough, but they avail nothing; the reasons in which they appear are wasted words; all the plans and specifications of reform vanish in the presence of a story so pathetic as this which I find in the Chicago papers of this morning: "Labor troubles entered into the halls of learning yesterday. Two hundred and thirty-seven men representing various trades and organisations quit work on the Chicago University buildings. The trouble was all because six non-union tanners were hired." This awful revelation of six non-union men earning an honest living, made a panic in the ranks of "organised labor," as if the breath of cholera had blighted it, and the two hundred and thirty-seven chivalrous knights quit work until the six non-union men were turned away. The tyranny of labor towards labor is more cruel and merciless than the tyranny of capital. It is no light thing to deprive a man of work and his children of bread. The guild or corporation that will do it arbitrarily for its own advantage is outside the sympathies of justice; it has no right to plead for its own liberty. All the moral, and many of the material elements of society array themselves in self-defense against the guild; and it wins hatred instead of honor.

* * *

The involuntary slavery of labor is melancholy enough, but its own willing degradation makes the social problem ten times more difficult than it would otherwise be. The two hundred and thirty-seven men who deprived the six non-union tanners of a livelihood, did so, not of their own free will, but by the orders of a masterhood which they themselves had created for their own subjugation. They had surrendered all the spiritual elements of their manhood, the genius that made them free, and they retained for themselves only their merchantable brawn and a diminutive ration of brain. This appears from the story, which continues thus: "When this information about the non-union tanners came to the ears of the walking delegates of the Building Trades council they called out every man employed on the buildings. The men obeyed. They then held a conference with the contractors with the result that the six non-union men were discharged. The men then returned to work." Like mere images of men they were moved and stopped by the master intelligence that owned them. An Italian organ grinder of my acquaintance, occasionally gives me a serenade for the paltry bribe of a nickel, and the instrument of torture on which he plays is an ingenious piece of mechanism. On the top of it is a mimic ball room, with about twenty little wooden people in it, so that when he turns the crank they dance to his music and go through the steps of a quadrille without making a single blunder. The walking delegate is like my Italian friend; he turns the crank, and the images all obey. The motive that made the two hundred and thirty-seven drive the six from work, call it self-preservation, or whatever fancy name you please, is inspired by an evil principle, the microbe of ruin to the Labor cause. It was a famous victory, that of the two hundred and thirty-seven, but it easily explains the defeats at Homestead and at Buffalo. Labor "organised" on slavery and injustice lacks all the moral ingredients of success; and its lost battles mark its punishment. Selfishness, under the sophistical name of self-preservation, is the same sordid quality whether it be displayed by incorporated laborers or by capitalists. Before the trades unions

can have any moral standing in the scheme of social regeneration they must learn that the right of a man to work, outside the unions, or wherever he can get work to do, is absolute.

* * *

I have said my say about the Carnegie and Pinkerton combination, and have been answered in a hundred papers. If I should revise my words I might perhaps in some places temper my rage to milder phrase, but as larger evidence convinces me that my opinions were substantially correct, I must let the censure stand; but the rule by which to test Carnegie must apply to every other man. It is not mentally easy for me to separate men into classes, giving privileges to some and penalties to the rest. I assert the essential unity of all men, with one moral code for all. There is but one law of justice, and to that law Mr. Carnegie and his humblest laborer are equally responsible. According to character and moral worth, I pay the same deference to the poor as to the rich, and to the rich as to the poor. To slight a rich man because he is rich appears to me to be as ignoble as it is to scorn a poor man because he is poor. A few months ago an English lady of title and fortune travelled about the United States, lecturing on temperance and social reformation. She received a good deal of attention, for she was a practical philanthropist and a very eloquent woman. Lately, in one of the magazines, appears an article by a still more eloquent woman, insinuating that the Americans who paid so much respect to Lady Henry Somerset were snobs, because the object of their attention was "an earl's daughter, the sister of a duchess, and the daughter-in-law of a duke." The sneer was invidious, for our visitor got no more honor than she deserved. Those who tried to expand their own dignity by slighting her because she was "an earl's daughter, the sister of a duchess, and the daughter-in-law of a duke," were undoubtedly snobs, with envy as the basis of their slight. Referring to the rumor that the emperor of Germany might visit the United States next year, a Berlin paper intimates that the Americans would treat him with discourtesy to show themselves superior to emperors and kings. This also is a mistake. Americans who would slight the emperor because he is an emperor, would prove themselves to be inferior and little-minded snobs. Conversely, the man who treats the humblest laborer with scorn because he is a laborer is as much a snob as the man who fawns upon the great. The moral of all this is that there are no privileged persons in the field of human duty, and trades unions have no right to require of Carnegie a generosity towards laborers which the guilds themselves are not willing to bestow.

* * *

Many and many a year ago, when I worked on the railroad with my wheelbarrow and my shovel, I had a fellow craftsman by the name of Dan Riordan, who worked in the same gang and on the very next plank to me. Dan was one of the most fluent and expressive men I ever knew, and he did much to make the time pass pleasantly by pouring rhetorical maledictions on all the myrmidons of capital, and especially upon the boss, whose duty it was to see that we kept the shovel going, and to fire a curse or two at us whenever we attempted to sneak a light load up the plank. Sometimes, by his exciting oratory, Dan would move us to the very edge of mutiny, and I think he caused the transfer of our tyrannical boss to a new gang on another part of the job. With gratitude and joy, we saw Dan himself promoted to the vacant office, and we promised ourselves an easier time; but the contractor knew human nature better than we did, and he thought he saw in Dan the elements of a taskmaster. He was right, for Dan drove us as the Egyptian boss drove the children of Israel. For forty-five years and more I have watched the spirit of Dan Riordan animating working men, as it did last Monday, when the two hundred and forty-seven drove the six away from work. And here is a conundrum that puzzles me. What would these men do if the earth was given unto them?

Taking the two hundred and thirty-seven and their action as fair examples of labor and the labor movement, I repeat the question, what would they do if the earth was theirs, and the fulness thereof? If they had control of all the natural opportunities would they use them or abuse them? That's the question. And supposing all the artificial and acquired opportunities, the great railroads, factories, telegraphs, machinery, tools, and ships, the savings of hands and the product of brains, were all confiscated and given over to them; would they execute the trust fairly, and give other laborers besides themselves equal access to those opportunities? Or would they say that the law of self-preservation required that they should retain them as a monopoly for themselves? Suppose they had possession and control of all the coal and iron mines in Pennsylvania, would they allow me with my pick and shovel to dig out a bit of a living for myself, except as their hired workman or on payment of rent and royalty? I think not. With souls cramped within the narrow doctrine of self-preservation they would give me hospitable welcome like that given by the Fire Island people to the passengers of the Normannia. If they owned all the factories in Pittsburg, would they develop them or waste them? Would they make a living out of them, or would they bankrupt them and themselves in quarrels over a division of the product? Vote-mongers flatter and fool the working men into a belief that laborers are above the law of moral consequences, and that the discipline of duty imposed upon every body else lays no restraints on them. From the supreme pontiffs of their orders they obtain indulgences to practise proscription and intolerance, but they must learn that equal rights is the law of labor as of other things; that as it is the duty of every man to work, therefore his right to work must not be taken away

M. M. TRUMBULL.

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