nervously. The drink had been at work as steadily as Dick.

"Is it you?" said Torpenhow. "All that's left of me. Sit down, Binkie's quite well, and I've been doing some good work." He recled where he stood. "You've done some of the worst work you've ever done in your life. Man alive,

Torpenhow turned to his companions appealingly, and they left the room to find Innen elsewhere. Then he spoke; but, since the reproof of a triend is much too sacred and intimate a thing to be printed, and since Torpenhow used figures and metaphors which were unseemly, and contempt un-translatable, it will never be known what was actually said to Dick, who blinked and winked and picked at his hands. After a time the culprit began to feel the need of a little self-respect. He was quite sure that he had not in any way departed from virtue, and there were reasons, too, of which Tor-penhow knew nothing. He would explain. He rose, tried to straighten his shoulders, and spoke to the face he could hardly see. "You are right," he said. "But I am right, too. After you went away I had

some trouble with my eyes. So I went to an oculist, and he turned a gasogene-I mean a gas engine-into my eye. That was very long ago. He said, 'Scar on the head -sword cut and optic nerve.' Make a note of that. So I am going blind. I have some work to do before I go blind, and I suppose that I must do it. I cannot see much now, but I can see best when I am drunk. I did not know I was drunk till I was told, but I must go on with my work. If you want to see it, there it is." He pointed to the all but completed Melancolia and looked for

Torpenhow said nothing, and Dick began to whimper feebly, for joy at seeing Torpen-how again, for grief at misdeeds-if, indeed, they were misdeeds-that made Torpenhow remote and unsympathetic, and for childish vanity hurt, since Torpenhow had not given a word of praise to his wonderful picture.

Bessie looked through the keyhole after a long pause, and saw the two walking up and down as usual, Torpenhow's hand on Dick's shoulder. Hereat she said something so improper that it shocked even Binkie, who was dribbling patiently on the landing with the hope of seeing his master again.

### CHAPTER IX.

The lark will make her hymn to God, The partridge call her brood, While I forget the heath I trod,

The fields wherein I stood.

The dule to know not night from morn, But desper dule to know I can but hear the bunter's horn

can but hear the number.

That once I used to blow.

—The Only Son. It was the third day after Torpenhow's

return, and his heart was heavy. "Do you mean to tell me that you can't see without whisky? It's generally the other way about."

"Can a drunkard swear on his honor?" said Dick. "Yes, if he has been as good a man as

"Then I give you my word of honor," said Dick, speaking hurriedly through parched lips. "Old man, I can hardly see your face now. You've kept me sober for two daysi: I ever was drunk-and I've done no work. Don't keep me back any more. I don't know when my eyes may give out. The spots and dots and the pains and things want, and the picture will be done. I can't kill myself in three days. It only means a touch of D. T. at the worst."

"If I give you three days more will you promise me to stop work and—the other thing, whether the picture's finished or

"I can't. You don't know what that picture means to me. But surely you could get the Nilghai to help you, and knock me down and tie me up. I shouldn't fight for the whisky, but I should for the work." "Go on, then. I give you three days; but

you're nearly breaking my heart."

Dick returned to his work, toiling as one sed; and the vellow devil of whisky stood by him and chased away the spots in his eyes. The Melancolia was nearly finished, and was all or nearly all that he hoped she would be. Dick jested with Bessie, who reminded him that he was "a drunken heast;" but the reproof did not

move him.
"You can't understand, Bess. We are in back and think about what we've done. I'll give you three months' pay when the picture's finished, and next time I have any ore work in hand-but that doesn't matter. Won't three months' pay make you hate me

'No, it won't! I hate you, and I'll go on hating you. Mr. Tornenhow won't speak to me any more. He's always looking at mapthings and red-backed books,"

Bessie did not say that she had again laid siege to Torpenhow, or that he had at the end of her passionate pleading picked her up, given her a kiss, and put her outside the door with a recommendation not to be a little fool. He spent most of his time in the ompany of the Nilghai, and their talk was of war in the near future, the hiring of transports, and secret preparations among the dock yards. He did not care to see Dick till the picture was finished.

"He's doing first-class work," he said to

the Nilghai, "and it's quite out of his regular line. But, for the matter of that, so's

Never mind. Leave him alone. When he has come to his senses again we'll carry him off from this place and let him breathe clean air. Poor Dick! I don't envy you, Toro, when his eyes fail."

"Yes, it will be a case of 'God help the man wao's chained to our Davie.' The worst is that we don't know when it will happen; and I believe the uncertainty and the waiting here sent Dick to the whisky more than anything else." "How the Arab who cut his head open

"He's at perfect liberty to grin if he can. He's dead. That's poor consolation now."

In the atternoon of the third day Torpenhow heard Dick calling for him. ished!" he shouted. "I've done it, Come

in! Isn't she a beauty? Isn't she a darling? I've been down to hades to get her; but isn't she worth it?" Torpenhow looked at the head of a woman who laughed,-a full-lipped, hollow-eyed woman who laughed from out of the canvas

as Dick and intended she should.
"Who taught you how to do it?" said
Torpenhow. "The touch and notion have nothing to do with your regular work. What a face it is! What eyes, and what in-solence!" Unconsciously he threw back his head and laughed with her. "She's seen the game played out-I don't think

she had a good time of it—and now she doesn't care. Isn't that the idea?" Exactly. Where did you get the mouth and chin from? They don't belong to Bess."
"They re—someone else's. But isn't it good? Isn't it thundering good? Wasn't it worth the whisky? I did it. Alone I did it, and it's the best I can do." Le drew his

breath sharply, and whispered, "Just God! what could I not do ten years hence, if I can do this now! By the way, what do you think of it, Bess?" The girl was biting her lips. She loathed

Torpenhow because he had taken no notice

"More than you will be of that way of thinking, young woman. Dick, there's a the fact that the two chemists exhibited sort of murderous, viperine suggestion in some hundreds of specimens of the glitterthe poise of the head that I don't under-

stand," said Torpenhow.
"That's trick work," said Dick, chuckling with delight of being completely understood. "I couldn't resist one little bit of sheer swagger. It's a French trick, and you wouldn't understand; but it's got at by slewing round the head a trifle, and a tiny, tiny foreshortening of one side of the face from the angle of the chin to the top of the left ear. That, and deepening the shadow under the lobe of the ear. It was flagrant hue hitherto obtained has rick-work; but, having the notion fixed, I the tint of the real gem.

shoulders, and peering under his eyebrows felt entitled to play with it. Oh, you beauty!"

'Amen! She is a beauty. I can feel it." "So will every man who has any sorrow of his own," said Dick, slapping his thigh. "He shall see his trouble there, and, by the Lord Harry, just when he's feeling properly sorry for himself he shall throw back his head and laugh-as she is laughing. I've put the life of my heart and the light of my eyes into her, and I don't care what comes.

\* \* \* I'm tired—awfully tired. I think
I'll get to sleep. Take away the whisky. It
has served its turn. Oh, and give Bessie 36
quid and 3 over for luck. Cover the pict-

He was asleep in the long chair, his face white and haggard, almost before he had finished the sentence. Bessie tried to take Torpenhow's hand. "Aren't you never going to speak to me any more?" she said; but Torpenhow was looking at Dick-"What a stock of vanity the man has! I'll take him in hand to-morrow and make

much of him. He deserves it—Eb, what was that, Bess?"

"Nothing. I'll put things tidy here a lit-tie, and then I'll go. You couldn't give me that three months' pay now, could you? He said you were to."

Torpenhow gave her a check and went to his own rooms. Bessie tathfully tidied up the studio, set the door ajar for flight, emptied half a bottle of turpentine on a duster, and began to scrub the face of the Melancolia viciously. The paint did not smudge quickly enough. She took a palette-knife and scraped, following each stroke with the wet duster. In five minutes the picture was a formless, scarred muddle of colors. She threw the paint-stained duster into the studio stove, stuck out her tongue at the sleeper, and whispered, "Bilked!" as she turned to run down the staircase. She would never see Torpeahow any more, but she had at least done harm to the man who had come between her and her desire and who used to make fun of ber. Cashing the click was the very cream of the jest to Bessie. Then the little privateer sailed across the Thames, to be swallowed up in the gray wilderness of South-the-water. Dick slept till late into the evening, when Torpenhow dragged him off to bed. His eyes were as bright as his voice was hoarse. "Let's have another look at the picture," he

said, as insistently as a child.
"You-go-to-bed," said Torpenhow.
"You aren't at all well, though you mayn't

know it. You're as jumpy as a cat."
"I reform to-morrow. Good night."
As he repassed through the sudio, Torpenhow lifted the cloth above the picture, and almost betrayed himself by outcries: "Wiped out!-scraped out and turped out!
If Dick knows this to-night he'll go perfectly mad. He's on the verge of jumps as it is. That's Bess-the little fiend! Only a woman could have done that-with the ink not dry on the check, too! Dick will be raving mad to-morrow. It was all my fault for trying to help gutter devils. Oh, my poor Dick, the Lord is hitting you very hard!"

(To be continued next Sunday.)

## REMARKABLE EARRINGS.

The Blocks That Stretch the Lobes South American Indians.

New York World. ] Along the various streams which are tributary to the mighty Amazon in South America lives a peculiar tribe of Indians, the Oregones, or "Big Ears." They live near the Napo river, one of the tributaries of the are crowding worse than ever. I swear I Amazon, and are entirely naked, if we can see all right when I'm moderately except the wonderful "earrings" worn by screwed, as you say. Give me three more a bit of wood into a slit in the ear them. They have a custom of introducing and gradually increasing the size of it until the lobe hangs upon the shoulder.



The Monster Earring. The accompanying cut shows the style of



An Indian in His Glory.

out and filled in with a substance similar to and as light as chalk. The rings in the center probably denote the title or dignity of the wearer. It is fully two inches in diameter and is worn with the flat side toward the head. The one illustrated was takenpermission-from the "gentleman" whose stoic features appear herewith.

# A PORTRAIT OF CLEOPATRA.

It is the Only Authentic One Which is Known to Archæologists. Pall Mall Budget.]

The question of Cleopatra's beauty is an old one, but has been brought into fresh prominence by Sardou's "Cleopatra" and Mrs. Langtry's revival of Shakespeare's play. The only authentic portrait of Cleopatra that is knows to archæologists is a bust which appears on a series of coins. It is on the reverse, and bears the inscription in Greek, "Queen Cleopatra, the Divine, the Younger," while on the obverse is a portrait of "Antony, Dictator for the Third

Time, Triumvir."

The workmanship of the coin is far from good, and this accounts in some measure for the undeniably plain appearance of the Queen. Yet the likeness, as far as the leatures go, is a true one, for the other coins of the same series, though of a different type, give her the same features—an aquiline nose, a strong chin, a long neck, and parrow shoulders. The fact is that her beauty was not so remarkable as one would think from the spell she cast over Cæsar and Antony. Plutareh, for instance, tells us "that her beauty in itself was by no means incomparable nor calculated to amaze those who saw her," but adds that the magnetic charm of her manner, the gracefulness of her movements, the persuasiveness of her conversation, and her figure were most attractive.

## MANUPACTURE OF RUBIES.

It is a Fact and Not a Theory, and an Array

of Lovely Gems Confronts Us. What is the use of exploring unknown and dangerous countries for rubies when the secret of their artificial production has been discovered? This was the question, says the Pall Mall Budget, which the Academy of her.
"I think it's just the horridest, beastliest Fremy and Verneuil, who for some time thing i ever saw," she answered, and turned away.

"More than you will be of that way of stones. More valuable than mere theory was ing red crystals they had succeeded in pro-ducing. The rubies were admitted by all to be much superior to anything hitherto manufactured. No little danger, however, attends the process. The chemicals have to be used with a heat so intense that M. Verneuil during the course of the experiments nearly lost his sight. While manufacturing rubies the two chemists found that at a certain stage of the operations crystals of the color of sapphires were produced, but the to obtained has not been equal to

It is the Third Step in the Investigations of the Processes of. Fermentation.

LAVOISIER FOUND THE GERM

Pasteur Explained the Value of the Discovery in Surgery, and in the Cure of Diseases,

The Principle of Vaccination and the Treatment of t Dread Hydrophobia.

AND THE GERMAN MIKES IT USEFUL

[WRITTEN FOR THE DISPATCE.1

If the world were informed some morning that England had become a republic or that the United States had transformed themselves into a monarchy, I think it safe to say that every intelligent person would be vastly surprised. And with good reason, for

certainly the results of any such change of govern-Germ Balloon, ment would be of surpassing importance, not only to the nations immediately concerned, but also to humanity itself. Important, however, as these results would be, they would be of little moment as compared with the results of a revolution which, silently and almost imperceptibly, has already taken place.

Twenty-five years ago physicians were almost wholly in the dark as to the real cause of contagious diseases. To a man who is not a physician but a chemist and biologist of a high rank we are indebted for our first knowledge of a new science, bacteriology, the successive discoveries in which have compelled us to change all our preconceived notions in regard to these maladies, which have so long weighed down the human race; to Louis Pasteur we are indebted for this great discovery.

IT IS A NEW SCIENCE.

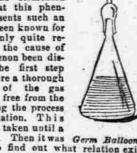
What is bacteriology? It is the science which treats of microbes and which has overthrown from top to bottom all our ideas about the causes and treatment of diseases, as well as about anatomy, pathologica physiology, therapeutics and hygiene. This new science, then, has brought about an almost complete revolution in medicine, and, as I will show later on, has possessed considerable importance for the champion of the social documes of solidarity.

If we search among ancient writers we shall find that some men of genius among them intuitively divined the hidden nature of contagions. More than 200 years ago-pot to go back to prehistoric times—Robert Boyle, an English author, in his "Essay on the Pathological Part of Physic," ex pressed the opinion that whoever could gain an insight into fermentation and the nature of ferments would be more apt to comprehend certain diseases, fevers especially, than he who knew nothing of the laws governing fermentation. For a long time after Boyle's death, however, the origin of fermentati remained a profound mystery.

THE TYPE IS YEAST.

That the reader may see the importance o Boyle's prediction and gain some idea of the vast amount of work done in this direction during the past few years I propose to show how the study of those fermentations, which are caused by different organisms, began. Of these organisms the prototype is yeast, or Torula cerevisize. Let us see now what alcoholic fermentation takes place in phenomena known throughout all antiquity. The must of grapes, beer or any other ugary substance becomes filled under favorable temperature with bubbles of air which accumulate on the surface, forming a mass of foam more or less thick. The liquid bubbles up, the saccharine taste disappears giving place to a peculiar

savor according to the nature of the fermented liquor. That this phenomenon presents such an aspect has been known for ages, but only quite rethe phenomenon been discovered. The first step was to acquire a thorough knowledge of the gas which is set free from the liquor during the process of fermentation. This



step was not taken until a century ago. Then it was Germ Balloc ecessary to find out what relation exists between the alcohol accumulated in the liquor, the carbonic seid which is set free and the sugar which the liquid originally contained, and which subsequently disapseared. That he solved this problem is one of Lavoisier's crowning glories.

LAVOISIER'S DISCOVERY ABOUT SUGAR. In a vase filled with water he melted a certain amount of sugar; then, in order certain amount of sugar, then, in order to cause a regular alcoholic fermentation, he added a little yeast. When fermentation took place he weighed the vase a second time and, allowing for loss of weight, calculated how much carbonic acid had escaped. Next, by means of several distillations, he separated from the liquor the alcohol formed by fermentation and by adding the weight of the alcohol to that of the carbonic acid, he was enabled to calculate almost to a nicety the weight of the sugar, which he had originally put into the liquor. From his experiments he arrived at the conclusion that fermentation is a simple division of sugar into

alcohol and carbonic acid. This discovery made a great stir in the world and for the first time the obscure process of fermentation, which had hitherto appeared the most impenetrable mystery of nature, was fully explained and made in-telligible by a simple formula. The inmost secrets of fermentation, however, still re-maining hidden, and though the simple formula showed the how, the why remained still unexplained and no one yet suspected the real nature of the yeast, which is added to the liquor and really causes fermentation.

A HISTORICAL SKETCH.

According to certain distinguished chemists every modification which occurs in an organic body, and is caused by the addition to that organic substance of a small portion of matter extracted from another fermented substance, was due to a particular chemical phenomenon, to an initial force, which they styled catalytic. This word evidently did not signify very much but I'se many other senseless words, it satisfied the human spirit, which is too often contented with explanations that really explain nothing. Liebig, for example, believed in the cata-lytic lorce theory until the end of his life. What, then, are the component parts o this yeast that forms a sort of foam on the surface of termented liquors or a deposit at the bottom of the vessels which contain them? What, in a word, is this yeast which in so small a volume conceals such an occult and double force? Prior to any microscopic analysis a chemi-cal analysis had been made and had made clear the analogy of the yeast to animal substances. Since then deep attention has been given to the formation of yeast and to the phenomena which accompany its various modifications, and the great result of these studies is the revolution to which I have re-ferred, and which, more effectively than all the woes and revolutions which has ensanguined the face of the globe, is bound to readjust radically and for its good the society

WHAT THE MICROSCOPE TOLD. Yes, through a microscopic speck, invisible to the keenest eye which has not the aid of special optical instruments, will be brought about upheavals which will preve most beneficent for man, who is himself descended from a microscopic atomic

In 1680 Lewenhock described the formation of the component parts of yeast and assigned to them an oval or spherical form. His experiment, instead of being appreciated as it should have been, was forgotten and bore no fruit, though since then several savants have each little globule. He pointed out how from these buds other buds branch out and multiply, and he insisted that if yeast acted on sugar in such a manner as to produce alcohol and carbonic acid the process was doubtless effected by means of inherent regetation and life.

vegetation and life.

The time for acientific appreciation of such a discovery had not yet arrived, and opposed as they were to established opinions, Cagniard-Latour's ideas had to fight hard for recognition. Indeed, several years passed before the genius of Pasteur established between the feat that the several years are the years are the several years are the years are the y youd question the fact that life enters into the process of fermentation. Nav. Pasteur did even more; he proved that fermentation and contagion are intimately connected, and it is to his profressive ideas that we owe the great and beneficent revolution, the results of which we already see, and the principle of which was bitterly opposed at first; just as every new scientific idea has been bitterly opposed at its birth. PUTTING FACTS TOGETHER.

When Pesteur had finished his researches in regard to yeast and alcoholic fermentation, he studied lactic, tartaric, butyric fer-mentations, etc. He was the first to make pure cultures in each case by producing in a given liquid one or another fermentation at about to publish I his pleasure. By his experiments he re-duced to silence the advocates of spontaneous generation, who were his most violent opponents. In 1850 Dr. Dwaine, another French savant, had discovered in the blood of animais little sticks, which he described as microscopic algo. Some years later, seeing that the butyric fermentation described by Pasteur closely resembled the "algo" which he had described, he a second time directed the attention of the medical professional statements. directed the attention of the medical profession to the public.

Meanwhile, Pollinder in Germany had de-

teur cultivated this organism without the mals. Thus the

ogy began. Other discoveries soon followed; many intellects were suddenly illumined by the glory of the achievements. so intrinsically important, and the result was that different microbes were successively discov-ered for the different contagious diseases. The sim-

Germ Insubator. plicity and truth of the new doctrines quickly impressed a large number of methodic investigators, and though it would not be correct to say that no opposition was encountered, it is generally conceded that hardly any other revolu-

tionary theory has met with so ready and general an acceptance. THE OBJECTIONS THAT WERE RAISED. At first many physicians opposed the new doctrines, denying the existence of microbes, and subsequently, when they saw that this argument was absurd, maintaining that they were not the cause of disease but were developed through disease in the hodies of human beings or animals. The fallacy of this argument was made apparent by experi-ments which demonstrated that the pure culture of the same microbe always brought about the same disease, and, this fact being indisputably proved, the ranks of those op-

posed to the parasitic theories became lament-ably thinned. Certain bigots, unwilling to admit that they were vanquished, invented then that specious argument, according to which it is not the microbe which causes disease, but rather its secretions, which act upon the organism and give rise to the symptoms opposition is futile and will soon be gotten.

A GREAT REVOLUTION. To-day all serious scientific investigators agree that a living germ exists wherever there is contagion, and thus have been discovered the microbes of typhoid fever, smallpox, measles, pneumonia and various other diseases, and thus, as I said before, has the study of the causes of diseases been completely modified. Anatomists discovered in tissues the very microbes to which their attention has been directed, and the relation of cause and effect being thus established the anatomy of diseases took an entirely new di-

Seeing that the germs of contagious and epidemic diseases, such as cholera, yellow lever, typhoid fever, smallpox and other maladies, develop and have their home in badly drained towns and other nuhealthy quarters, boards of health promptly ordered prophylactic measures hitherto rather neglected, and saw that they were applied to streets, sewers and water supplies in hospitals and houses. As a natural result the practice of public and private hygiene at-tained in a few years a surprising development. It only remains for me now to treat briefly of the principal changes which therapeutics, or the treatment of diseases, has undergone, and to say what hopes, based on the new discoveries, we should have for the future.

THE PRINCIPLE OF VACCINATION. During recent years the march of progress First, Pasteur pointed out now the virusthat is to say, the contagious germs—could be attenuated by exposing the hen cholera cultures to the air and also proved that a small portion of these cultures would no longer kill animals, though a similar injec-tion had produced a fatal effect some weeks previously. The inoculation, however, had not been without result. The animal had suffered and had experienced the mild symptoms of mortal disease, and the result showed that the mitigated attack was a safeguard against the inoculation of the virulent mierobes, which had caused the death of the animals into whom the attenuated culture had not been injected. Experimental vaccination was discovered. Its practical ap-plication was soon made on a grand scale. By an analogous process Pasteur attenuated the virus of the anthrox.

By this disease cattle valued at several million frances had been annually carried off in France. Since the introduction of anticarbonic vaccination after Pasteur's method. however, the loss of cattle has been reduced to a minimum. Other experiments, less brilliant, were made with not less success as, for example, in cases of hog cholera and contagious pieuro-pneumonia among cattle. Finally, after several years of continuous work and of experiments conducted with a sagacity which does bonor to the human race, Pasteur added to his other great achievements by discovering a means by which human beings can be preserved from diseases which have hitherto been considered fatal. By means of inoculations of virus, the strength of which was successively inprevent the development of madness after a creased, he showed how it was possible to

THE HYDROPHOBIA CURE. Clearly as the value of Pasteur's method has been demonstrated by experiments and the testimony of inoculated persons, it And surely this is not surprising, consider-ing how successfully pitients have been treated after Passeur's method. Some time ago in the suburbs of Bucha-rest a man wolf bit 13 persons and 33 domestic animals—horses, dogs, cows and pigs. Eleven of the persons bitten were treated in time and are to-day in perfect health. Of

drawn attention to it, and it was not until

1836 that Cagniard-Latour demonstrated beyond doubt the living nature of yeast.

He described the buds which shoot off from for treatment to the nearest institute. Ther are several of these establishments in Eu rope, India and America, and so far more than 15,000 persons have been inoculated. Thanks to the constant improvement of the method the cases of failure after treatment are continually diminishing.

WORK DONE IN NEW YORK CITY. In the New York Pasteur Institute about 160 persons have been inoculated between March and the end of November. Of these

a large number applied for treatment after having seen other persons or bitten by the same dogs die of hydro-phobia. These cases 1 were certainly grave, and yet in every instance, thank the gods, the treatment proved efficacious. During this period I have heard of 24 cases of death in the United

give the names of the A Water Filler.
districts in which these deaths occurred. I do not hesitate to say that if these 24 persons had come, as the 160 came, to the New York Pasteur Institute for treatment they would to-day be in good health and not the victims of a most horrible death. When we consider what medicine was 20 years ago we must see that an incomparable advance has been made in this art, which is becoming more and more an exact science

But it is not only in the case of internal diseases that medicine has been revolutionized by the new discoveries that we owe to bacteriology; the new science has also been applied to surgery with results that cannot fail to convince the most skeptical. The study of bacteriol- study of microbes showed that the unhealthy condition of sores, whether accidental or natural, was due to the introduction into the lymphatic and blood vessels of diseasebreeding bacteria, and that thus erysipelas was caused in one instance, septicemia in another, tetanus in a third, and that, in fine, all secondary poisonings found after surgical operations could be traced to this source.

A BENEFIT TO SURGERY. After having discovered the cause of these complications and the existence of disease-breeding germs, which swarm from the sores to the farthest recesses of the human body, bacteriology discovered substances by which the development of those germs could best be prevented, or rather agents by which the microbes could most readily be destroyed without injuring the human tissues. By aid of this new discovery surgeons have been able to try thousands of operations of which they have heretofore never dreamed or which they have only practiced in fear and trembling. Availing itself of the safeguards in-dicated by bacteriology, surgery is able to open joints, to burrow in the abdomens, to open the chests and skulls of sick persons without making them run the terrible risk which attended these operations only a few

years ago.

Lister, the English surgeon, was one of the first who used in his practice the theories of Pasteur, and it may be mentioned that he sent the great discoverer a letter which was full of thanks and congratulations and which certainly marks the beginning of a new era for the practice of surgery. It goes without saying—and I need not insist on this point—that physicians appreciate better than laymen the scope of the great revolu-tion which these new discoveries have brought about in the art of Hippocrates.

EVERY DOCTOR A BACTERIOLOGIST. The new discovery of which all men are talking now will make my meaning entirely which we study. An argument of this sort, clear. I do not desire to prolong this article however, was equivalent to an admission of defeat. To-day there remain only a few unimportant reactionaries, who, refusing to this subject the reader knows almost as give credence to established facts, find it much as I do. If, however (and all the easier to blindly deny than to zealously facts point in that direction), it is necessary strive to comprehend the new ideas. This to use cultures, from which is so be extracted by chemical process matter sec by the microbe with the object of preparing the injection, through which the disappearance of the noxious microbes is to be brought about, then the physician will be compelled either to become himself a chemist and bacteriologist or to apply to another for the necessary curative elements, If he adopts the latter course he must resign himself to play a secondary role, which will be humil-

lating to his professional dignity.

It may be argued that the physician will be able to receive the remedy from a labora-tory as to-day he receives the vaccinal lymph or any other remedy which his patient can procure from any drug store. The present case, however, is different and a elf-respecting physician cannot be satisfied with merely practicing the discoveries of others and doing no work in that direction himself. Moreover, patients will go with far more confidence to the man who applies the cure directly.

CHANGED THE BASIS OF SURGERY. To resume, the biological discoveries, which have been made during the past 'ew years, have completely changed the basis of surgery and medicine. I have shown how far the surgeon's field of action has ex-tended, and shall now cast a glance into the future, where I see most consoling and bene-

ficent outlook for our race.

And first I see clearly that by means of these recent discoveries in regard to germs, which are contagious and to some extent tangible, the solidarity which unites us all, rich as well as poor, has been proved in a clearer and more satisfactory manner than has ever fallen to the lot of all the anostles of universal fraternity. How is that? How can it concern me, who am wealthy, if my neighbor dies of wretchedness? I will tell you have it concerns to well as the same of the you how it concerns you. Your neighbor's wretchedness, which a little effort-I do not even say a little sacrifice—on your part could alleviate and render harmless, is a standing menace to your health, to your life and to the lives or your family, for the reason that the misery, which surrounds him and his children, favors the development of microbes, which are the germs of all conta-gions, and from his body will escape all the morbid elements which will bring consumption to you and to your children diphtheria, meningitis and, in one word, death. THE TRIUMPH OF SCIENCE. Long enough has humanity patiently

paid tribute to the minotaurs of contagions

and epidemics. At last man, a new Theseus, has gained the victory, and, thanks to the strides of experimental science, is enabled to move freely in the midst of his van-quished enemies. To-day he holds on the point of his scalpel the elements of those mysterious miasmas which have rightly, and as it by intuition, been considered the sources of these dreadful scourges; he con-fines them in crystal vials; he watches their development by the aid of perfect instru-ments; he is enabled to test the action of the different chemical compositions which he extracts from surrounding objects which nature furnishes to him. He knows now the strong and the weak points of this enemy, which was only formidable be ore because it could neither be seen nor grasped. We can foresee the day when thousands of lives will be preserved from cholera and tuberculosis, when mothers will cease to weep over the bodies of their children who have been carried off by the deadly germ of diphtheria. Man will then be master of death. And when, thanks to an evolution mevertheless encountered a host of opponents
—so natural it is for man to repulse at first
every new truth which runs counter to their
cherished opinious. To-day, however, very
few scientists worthy of the name are open
disbelievers in this great new discovery.
And surely this is not surprising, consider. been closed by medical science—then, thanks to the progress of social science, another gate—blood stained, too—the gate of tratrigate-blood stained, too-the gate of tratri-cidal woes will be closed in its turn; a new race will necessarily be evolved, and a new golden age will appear, and such will be the heritage which we shall be enabled to the heritage waterity.
bequeath to posterity.
PAUL GIBIER, M. D.

New York Pasteur Institute.

MR. MACKAY'S RIVAL.

Charles W. Bonyuge, Who Proposes to Lay a New Atlantic Cable.

IT'S A WAR BETWEEN WOMEN.

Millions Won in Gold Fields to be Pitted Against Each Other.

HISTORY OF THE TWO FAMILIES

CORRESPONDENCE OF THE DISPATCE. 1 NEW YORK, Dec. 6 .- Considerable comment and curiosity have been caused among financiers and officials of telegraph companies during the last few days by rumors to the effect that Mr. Charles William Bonynge, a gentleman well known in London, but a comparative stranger in New York, has come to this country with the avowed purpose of making arrangements for the construction of another remarkable cable.

Mr. Bonynge arrived in New York by the Teutonie on her last trip, and he is now staying at the Fifth Avenue Hotel. When questioned concerning his purpose, he said that it was absolutely out of the question for him to give any information whatever about his proposed new cable. He did intend, he said, to begin an opposition cable, but if he were to give at this moment any particulars, he would be simply playing into the hands of his opponents. "I cannot for my life im-agine," said Mr. Bonynge, "how even the fact that a new cable was in contemplation has leaked out. However, to say anything about it now would be premature and see no purpose."

IT'S AN ENGLISH COMPANY. Mr. Bonynge, nevertheless, did say that the stockholders were all Englishmen, but he would not give their names because, as he said, Englishmen dislike publicity. The head offices would, of course, be in London, and the cables would be manufactured on the other side. According to Mr. Bonynge the transatlantic cable business is only in its infancy; another and yet another new cable would follow. He intimates that a rate war would be inevitable, as the estab-lished companies would naturally do all in their power to crush a new rival.

It is the impression among those who are well informed on the subject that the object of the new cable company will be to deseat the Commercial Cable Company, and that a long and bitter fight is contemplated. It is well known that between the houses of Mackay and Bonynge on the woman side a bitter feud for social preferment has long existed, and is still being carried on with much animus. The women are inimical, and a latent war is the result. Both families have moved in much the same lines, and it is doubtful whether there has ever been such a parallel history as theirs.

CALIFORNIA GOLD KINGS. Mackay and Bonynge came to this country and went to California in the good old bonanza days. Neither had a cent to speak of, yet both realized princely fortunes by mining; both married women having a daughter by former husbands and both subequently settled with their families in the English metropolis where they live in regal style. The wives of both became imbued with high social aspirations; both women, who had emerged from every-day surround-ings, succeeded, even as their husbands had, and are now recognized in the most select circles. One lady's daughter married a foreign prince (Prince Colonna) and the other is ambitious that her child should do likewise. The lady whose daughter is wedded deems the other lady a usurper and the wealth of the husband is brought into sacque which covers the shoulders and arms, play. It is an even fight, for both men are said to be equally rich.

Can the proposed new cable have any

bearing upon the social controversy? The life and adventures of John W. Mackay, the bonanza king, are known to almost any school boy and the vituperative stories about Mrs. Mackay have been read by most adults.

THE HOUSE OF BONYNGE. history of Bonynge, however, on this side of the Atlantic is but little known out

side of California. In a work entitled, "Mrs. Jonathan Abroad," an alleged complete "The Rise of the House Bonynge" is given, but Mr. Bonynge told me that it was a malicious production havource, he said, from which it emanated, but if he knew who wrote the story he would make it uncomfortable for him. Mr. Bonyage is a well preserved man for his 50 years. He is about 5 feet 7 inches tall; car-ries himself erect, and brushes his iron gray

hair and beard carefully. He has keen gray eyes, but not an unkind face. eyes, but not an unkind face.

His family consists of his wife, Mrs. Rodie
S. Bonynge, and two daughters, Miss Virginia Daniel-Bonynge and Miss Louisa
Bonynge, Miss Virginia Daniel-Bonynge
is a tall, slight young lady with a decided
taste for social pursuits. She is Mrs.
Bonynge's daughter by her first marriage
with a miner named William Daniel. Miss
Louiss is the fruit of the union between Mr. Louisa is the fruit of the union between Mr. and Mrs. Bonynge, and is spoken of as an

amiable young lady with a taste for litera ture and the drama.

EDUCATED FOR THE CHURCH The progress of Bonynge reads like a romance. He is an Englishman by birth, but while yet a very young man he came to this country, where, by hard toil and manly efforts, he realized an almost fabulous fortune. In the old country Bonynge had been educated for the Church of England, but he declined to accept holy orders, and his brother, who is now the Dean of Miltown, Malbery, took his place. He realized that in Calliornia he must work, and, being no sing-

gard, he soon got employment as superintendent of Woodward's Gardens in San Francisco. Young Bonynge was very prudential, and roung Bonynge was very prudential, and from his earnings he saved enough money to buy one share of stock, when his employer, Mr. Woodward, located the Gould & Curry mine on the great Comstock lode. From this time forth Bonynge was a made man, and it is recorded that he never looked back, but went straight shead. The stock steadily advanced, and, as it did so, Bonynge hypothecated his share and bought others. Soon afterward he threw up his position with Mr. afterward he threw up his position with Mr. Woodward, and engaged in higher and more remunerative pursuits. He went to Virginia City, the capital of the mining world, where he carried on a mining and stock dealing business.

THE FIRST HUSBAND'S TROUBLE. Bonynge soon grew rich and powerful as an operator, and returning to San Francisco, he was elected Vice President of the Stock Exchange. In 1869, just ten years after his arrival on the Pacific coast, he married Mrs. William Daniel. Her maiden name was Miss Rodie S. Stephens, and she was born in Sedalia, Mo., in 1814. She belongs, however to as old Virginia lamily, which at one time is said to have been very wealthy. Mr. Daniel was in prison at the time of the marriage. The story goes that during a violent quar-

rel Daniel shot a man name i Galway, in-flicting a severe wound, for which he was tried, convicted and sentenced to four years' imprisonment in the State prison of San Quentin. During his incarceration his wife obtained a divorce from him, and, becoming acquainted with Bonyage they were mar-ried on June 5, 1869. Prior to her wedding with Mr. Bonyne, however, she had often thought of Daniel in jail, and at her carnthought of Daniel in Jan, and at her earn-est solicitation the man Galway headed a monster petition to the Governor of the State asking for Daniel's release, and on April 19, 1870, the Governor signed a par-

DIED ALONE ON THE PLAINS.

Upon leaving prison, Daniel wandered into the State of Nevada, where he obtained a precarious livelihood. A short time afterward his dead body was found on the road-side, and on examination it was found he had died of heart failure. Later op, the Bonynges removed to London, where they

now live in a palstial residence in Prince's Gate. Ex-Minister Phelps was a constant visitor and through him the necessary introductions into aristocratic society were ob-tained. Soon the name of Bonynge was To be Found on the Plains at the

on every tongue, and there was not a work of charity to which the Bonyages did not subscribe most liberally.

The result was that the mother and

daughters were very shortly presented to Queen Victoria at one of Her Majesty's drawing rooms. Here was a social victor enough to create unknown quantities of jeal-ousy. Mr. Bonynge became renowned for good dinners and his wife was described as a most charming hostess.

THE TONGUE OF ENVY. Miss Virginia was an acknowledged belle and much sought after both on account of her beauty and her father's millions, and all went swimmingly until mali-cious tongues went a-wagging with the view

or belittling the Bonvage pedigree.

Through all this Mr. Bonyage has looked on serenely. He is quite a philosopher and feels satisfied that whatever is said about his successful struggle with fortune is simply the outcome of a deep-rooted envy and malice. He says that his daughters are not hunting after princes, dukes or lords, and that although they will both have large fortunes neither young lady has yet lost

Mr. Bonynge's acquaintances say that his cable enterprise will soon be a reality.
L. N. M.

DRESS IN BURMAH.

Women Wind Themselves in a Single Strip

of Elegant Silk. In Burmah the poorer classes usually wear but one garment, consisting of a single piece them that they prattle about it almost as of colored cotton cloth about a yard and a refreshingly as a child. I recall a walk half wide and of such a length that it can be wound around the chest or waist and fall to



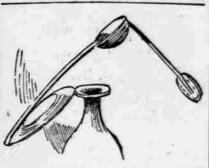
A Burmah Belle. the feet. The women bind this strip of cloth tightly around the bust under the arms, leaving the shoulders and neck bare, and the opening folds of the dress are at the front. The barefooted beauties have from infancy been taught to walk in such a way that they naturally kick the dress inward with the heels as they go along, and thus avoid any exposure of person. The higher and the better class wear the brightest of silks. Some of the ladies' dresses consisting of this single strip of silk cost hundreds of dollars, and some of the fine silks of the world are made in Burmah. The men are as gorgeous in their costumes as the women. Their gowns are wound about the waist and tied in a big knot at the front. Most men Western song the sweetest. From a strictly wear a bright handkerchief tied around the musical standpoint I am compelled to adhead, and inside of this is put up their long mit it; but as what you might expect it hair. Both classes wear their hair long and seems al

Which Makes You Think You Are in a

Mining Exchange. "Waleedi," after a defunct mine in Colo-rado, says the St. Louis Globe-Democrat, bird. Again and again did this little bird, and if you were to enter the parlor of some one of the Chicago "400" where Waleeds is being played you would imagine yourself on the Mining Exchange. A game is called a "fortune," a count is a "strike," a "large strike," or a "24-inch vein." The six-spot, knave, queen, king and ace are called "waste cards," because they do not count; the two, three, four and five-spot cards are "vein cards;" the seven, eight, nine and ten, "pocket cards;" the "pocket" cards of a suit complete a "pocket," of trumps a "rich pocket," and two pockets a "chimney." The cards are dealt and the rules and penalties are the same as in whist, the only difference being in the count. The game is 300. The "vein cards" of any suit count for as many as they have spots, a "nocket" counts 50 and a "rich pocket" 75. But when you strike a "chim-ney" your "fortune" is made, for a "chim-

ANOTHER BALANCING TRICK. How to Make a Plate Swing From the Mouth of a Decanter.

t. Louis Post-Dispatch.] The cook-spoon is the modest scepter of her who governs the realms of the kitchen, and with its assistance we are able to execute a highly remarkable counterbalance test, which seems to run in direct opposition to all the laws of gravity, With the addition of the skimmer we are enabled to balance a plate, up side down, on the edge of a glass or the neck of a decanter.



The Swinging Plate. Slip the edge of the plate into the nook of the ladle or cook-spoon, making the same fast with a piece of cork to prevent the plate from sliding about. Hook the skimmer into the bowl of the cook-spoon, and after a few manipulations you will have found the center of gravity of the plate.

Ker Chew!

Soston Globe 1 Sneeze on a Monday, you sneeze for danger; Sneeze on a Tuesday, you kiss a stranger: Sneeze on a Wednesday, you sneeze for a letter; Sneeze on a Thursday for something better. Sneeze on a Friday, you'll sneeze for sorrow; Sneeze on a Saturday, you'll sneeze for sorrow; row: Sneeze on a Sunday, your safety seak, The devil will have you the rest of the week!

A Pension for Mrs. Custer.

Foot of the Rocky Mountains.

How the Familiar Meadow Lark Changes His Voice in the West.

A SONG THAT CAME BACK IN A DREAM

[WRITTEN FOR THE DISPATCH.] On the plains, near the foot hills of the Rocky Mountains, altitude and latitude are so inter-convertable that the fauna and flors of the North and South are wonderfully blended. Here varieties of Eastern species are interesting, because, while so like, they are yet so unlike; and new species are constantly challenging the close observer's attention. It is remarkable how a little journey into the world quickens our faculties of observation. I have seen tourists out West lugging around "specimens" that might essily have been found near home had ap-

preciation of nature's treasures been as keen there as it was abroad. Our English friends, as a rule, are ahead of us in this respect. The more uncultured of them have an appreciation of the little things of rural life that very largely broadens their field of enjoyment. The strange wildness of the plains so impresses taken some years are with such a companion one hot June afternoon out to the lakes north of Denver for fish and exercise. Besides some notes that are before me now, we got little other than the exercise.

LATITUDE AND THE CACTL.

The plains were at their prettiest then, The Mexican poppy, with its large, white flowers, and the evening primrose, similar but not so stately, surrounded by a host of smaller beauties, were conspicuous, while it was no strong simile to say that the yellow and pink cacti spangled the earth as the stars do the sky. How expressive of climatic influences the cacti are! At the North they are apt to be dwarfed and melon-shaped; at the South they increase in height till they culminate in trees in the tropics. One can nearly tell his latitude by their size and varieties. The common prickly pear here scarcely puts more than one leaf above another, while one or two hundred miles further south it attains an altitude, so to speak, of four or five stories. Species of the cacti are found on the Arkansas that are

never seen on the Platte. The dry air and hot sun of these high plateaus affect familiar birds, sometimes in plumage, sometimes in song, often in both. Others, however, strictly maintain every eastern peculiarity in every respect. These latter puzzle the American evolutionist, for the executions are about as greaters the minimum of the executions are about as greaters the minimum of the executions are about as greaters. the exceptions are about as great as the rule.

The English Darwinian smiles in his com-The English Darwhalan smiles in his com-placency at those that do not change, and says: "There have been no re-cent variations of the species" and thinks the matter is rendered clear. The one thinks if "circumstances make the man," they should also make the bird. The other believes in "blood," and that the only way to get away from it is to sport into a new variety of the old species, and then circumstances help to maintain the permanency of the new kind.

MEADOW LARKS OUT WEST, An excellent illustration is the familiar

neadow lark. His saucy chatter, his impudent shake of the tail, his low, jerky, flitting flight, his lovely plumage and song are among our earliest remembrances; and when, on the walk mentioned, one fluttered from the ground, in the old way, to the top of a low cottonwood, I, without thinking, expected the old song I had heard so often. I knew of the Western bird's peculiarities of knew of the Western bird's peculiarities of song, had I thought a moment, but as it gurgled forth my feelings were shocked for the instant by the strange perversion of a familiar melody. Cou-noisseurs in bird music pronounce the Western song the sweetest. From a strictly sang an old hymn in variations or a mother

suddenly changed a strain of a familiar lullaby from soprano to bass. Indeed this seems to be the great difference, that whereas the Eastern bird sings in a high key and ends in a high note, the other Mining Exchange.

They have a new game in Chicago called in a low tone with a sort of liquid gurgle with every attitude of his Eastern brother, sing his new song in the old way, till my friend caught it with his whistle and could repeat it cleverly. In vain did I try to re-produce for him the old song. The new one had entire possession and had perverted my

memory. A SONG IN A DREAM. The matter worried me. That night, tired and restless in my sleep the Eastern birds sang around me in a dream, and the re-membrance of their songs was ringing plainly in my ears next morning. My mind had

brought back East an account of this old bird with a new song. Audubon and other naturalists had been calling our old one Sturnella Ludoviciana, S. Magna, etc., etc., but now they very appropriately styled the new one S. Neglecta—and, strange to say, they call him that yet; but they have been wrangling ever since as to whether he is variety or a species. The difference in plumage peculiarities are never very marked, and the two kinds in this respect are claimed to shade into each other in direct proportion to the amount of rainfull. But this does not apply to their songs, for where the two birds are sound occupying the same territory their songs are quite distinct. Once in Missouri I shot a Neglecta in the act of singing and likewise a Magna, and by the closest scrutiny with the aid of the books I could perceive no plumage difference.

DIDN'T DISSECT HIS VOICE. It occurred to me that they might have It occurred to me that they might have been distinguished by the dissection of the vocal apparatus, but I was not anatomist enough for that. Such a thing as hybridiam of voice, I think, has never been recorded. Ouce, while sneaking onto some ducks with a very unsentimental companion, I heard a boarse song from a lark that sat not for away which I then the control of the control sat not far away which I thought possibly was from a hybrid. I wanted to turn aside and investigate it, but the old hunter ex-claimed: "O, come on; 'snothin' but a fee-lark with a bad cold," and as just then the

ducks began to rise I was perhaps the more easily persuaded that he was correct. bird is not a lark at all-let us not forget that—but rather an oriole—more properly a starling. But there are larks on the plains here and others more truly resembling larks than our Sturnella, but our stroll shall have to be extended. Shall we go again some other day? I hope so.

JAMES NEWTON BASKETT. STORY OF EMPEROR WILLIAM.

How an Officer Avoided Embarrassment of Himself and His Master. Toronto Mail. 1

A story is told of the Emperor o. Germany which may, or may not, be an invention. During the Emperor's trip to Norway in the summer he took, it is said, great pleas-ure in roaming about incognite. One day an officer attached to the imperial yacht had the misfortune to come face to face with His Majesty when the latter had a very pretty girl by his side. What was to be done? It was too late to turn back. To halt, face front, and sainte would put the

struggled on with the task while my body I think it was Lewis and Clarke who first