like covering, which protects the parts well, while healing progresses beneath.

Finally, Unna has introduced quite a line of plaster-mulls and salbe-mulls, in which various medicaments are incorporated. These certainly are of very considerable value in certain cases, and afford a means of keeping the remedy required in close juxtaposition with the diseased surface.

I have said nothing in regard to the various medicated soaps, and have little to say commendatory; for, as a rule, little washing is desirable in diseases of the skin, and they have always seemed to me to be an irrational method of making other applications to the skin.

There are many more of the newer remedies and measures which I might, with advantage, bring before you. But this paper has already overstepped the limits within which I had proposed to speak, and I must leave them for consideration on another occasion.

I have said enough, however, to show that there have been real advances of late years in the therapeutics of diseases of the skin; although I still feel that I must repeat what I said at the opening, that caution should be exercised against accepting much of the new which is brought to our attention. The science of medicine is a grand and difficult one, and we must not be content with ordering this or that remedy, on however high authority, without understanding the diseased condition we have to meet, and the true nature and uses of the remedy we are to prescribe. All thoughtful men must regret the ready and often careless way in which some of the newer remedies have been pushed, too often for the gain of manufacturers or proprietors, and the profession should make a stand against and repudiate the impudent manner in which many of them have been vaunted, for commercial purposes.

4 East Thirty-seventh Street.

EULOGY ON JENNER.

Delivered before the Jenner Centennial Memorial, held under the auspices of the Golden Belt Medical Society of Kansas, at Salina, Kan., Oct. 1, 1896.

BY WILLIAM B. DEWEES, A.M., M.D., LL.D.

SALINA, KAN.

Mr. President, Ladies and Gentlemen: We have gathered to-night to commemorate the life, worth and work of a really good man—a great country doctor. It is meet that the doctors of a community, and especially the members of a medical society of country doctors, pause a brief while and assemble with the people whom they serve in a public gathering like this, to pay their tribute to him who laid the foundation of preventive medicine.

By invitation of your committee, Mr. President, on the celebration of the centennial memorial of the Jennerian discovery of the protective value of vaccination, I appear before you. Your learned and greatly beloved secretary, Dr. LaFevre, has most ably and interestingly made known to you much of "The Life and Works of Jenner." In my paper I am limited to an "Eulogy on Jenner." Standing as I do on this occasion to speak for the memory of the illustrious dead, I shall earnestly endeavor to judge as I would be judged, and

"If, unhappily, I dream,
And prove too weak for so divine a theme,
Let charity forgive me a mistake
Which zeal, not vanity, has chanced to make,
And spare the speaker for the subject's sake."

Dr. Edward Jenner was preëminently one of the noblest benefactors of the human race. His precepts and examples are ever a trustworthy guide to the true physician. He earned and held a proud position in the medical world and in the public thought. He stood for independence, for intelligence, for self-discipline, for courage, for reason, for temperate thought, speech and deed, and above all for absolute integrity. He disdained and spurned the temptations of wealth and fame. His sympathy was wide as want, and like the sky, bent above a suffering world. He found happiness in diligently laboring for the prevention and relief of human suffering, and the elevation of the race, being content with a competence sufficient to supply all real wants. His full measure of joy was realized only in the felicities of his domestic life.

This distinguished Briton was a great man, a good man, a renowned physician, whose name and work were honored by millions of his fellow-men throughout the civilized world; even so a hundred years after his great and immortal discovery. The thoughts and deeds of such a man are truly worthy of commemoration.

The literature of many lands is rich with the tributes that admiration, gratitude and love have paid to the noble deeds of the great and honored dead. These tributes disclose the character of nations, the ideals of the human race. In them we find the estimate of greatness, the lives, the thoughts, the deeds that challenged praise and thrilled the hearts of humanity.

They teach us that men are only fragments; that the greatest walk in shadows; that faults and failures mingle with the lives of all; that silence is the most complete refutation for every misinterpretation of motive, for every unjust charge of wrong; that charity holds the scales in which are weighed the deeds of mankind; that peculiar traits, born of locality and surroundings; prejudices and passions, born of conflict and envy; superstition and egotism, born of ignorance and vanity; these are but the dust of the race—these are accidents, customs, clothes, habits, fashions that have nothing to do with the individual, except to hide character.

These tributes show us how poor this world would be without its graves, without the recorded memories of its mighty dead, without their indisputable proof that only the voiceless speak forever, and that a noble life enriches all the world.

Again, we learn from these tributes, that each discovery that marked a new epoch in the history, and started a new era in the advance of medicine, was rightfully subjected to the crucial test of that wonderful and only scientific crucible—practical experience—and thus received in due time its merited accordance of the profession. That, moreover, the authors of such discoveries have been in the meantime made to suffer most unjustly the pangs of envy and prejudice, of designing and deluding intelligence, of fanaticism and ignorance, but all to no purpose in dissuading them from their conviction.

Not all men have the courage of their convictions. So it is with doctors. But, nevertheless, the imperative duty of every doctor remains to support and stand up bravely for what he believes will benefit mankind.

Did Ambrose Paré cease to tie arteries after amputation, because all the doctors of Paris denounced him?

Did William Harvey recant from his immortal discovery of the circulation of blood, because he was renounced by his colleagues and because his discovery

proved a boomerang which cost him his practice for many years?

Did Ephraim McDowell cease to follow his convictions, because a raging and howling mob threatened to lynch him and because the entire medical world stood still to denounce him, while he dared to step forward in the advance of science to save the life of a patient, thus unconsciously inaugurating abdominal surgery?

Did Chamberlain refrain from advocating the use of the obstetric forceps, because he was ridiculed and censured as a fanatic and egoist?

Did Long of Georgia, who was the first man to produce general anesthesia and do a painless surgical operation, cease to prevent all surgical pain, because his colleagues and friends showed their contempt for so rash a deed?

Did the Atlees of Philadelphia cease to operate for ovarian tumors, because Dr. Charles D. Meiges denounced them as murderers and asked the aid of the law to stop their operations?

Did Jenner—the subject of our sketch—cease to struggle in following the light of his brain and the impulse of his heart, because he was made the victim of medical hate and scorn for years, before he was honored and rewarded for his immortal discovery, which marked a new epoch and started the era of immunization which remained to be augmented by the labors of Pasteur?

I answer, No! No! These are the examples of the character of men who had the courage of their convictions, the integrity that is guided by reason, and the sincerity that has the light of truth; men whom we ever delight to honor, because to the influence of such men alone is due the real progress in medicine.

Edward Jenner was a progressive and a loyal physician. Progress in medicine is simply improvement of the art in its application and depends upon the loyalty of the profession. With true physicians loyalty does not stand on the side of concealment, but on the side of exposure. The only dictum of medical progress is reason. Well may we say then, in the language of the Prophet Isaiah, "Come now, and let us reason together and take counsel, since

"A little counsel now and then
Is relished by the wisest men."

A close observer of history will note that the progress of rational medicine in each succeeding age had to contend with the influences of preceding ages. Each succeeding generation is based on the preceding one. We are the children of our parents; we reap what they sowed. In the same way the future depends to a great extent upon the present. If this be true in political, religious and social life, in matters of science and trade, it is, perhaps, most of all the truth in medicine. If we wish to throw a glance on the future of medicine we must construct it on the basis of the influences prevailing in the present age. We can predict future progress only upon the basis of judging the past and present. However, in doing so we must always make allowance for the fact that in the natural course of events forces of peculiar strength may and do come forward which we can not foresee. Such forces are, for example, the appearance on the scene, of men of extraordinary power. If politically, men like Napoleon, Bismarck and Washington gave a new turn to the history of France, Germany and America; if men like Luther in Germany and Wesley in England gave a new stamp to the religious life of their

age, we point with much pride to such country doctors as McDowell, Long, Sims, Battey and the immortal Jenner, who have marked some of the most profound epochs in the medical history of the world.

Jenner stood in the front ranks braving truth, progress, harmony and peace. He was a pioneer, a torch-bearer of truth and reason, a ceaseless toiler in the great field we call the world, an honest worker for the progressive welfare of his fellow-men. He was endowed with a great mind, blessed with a heart filled with benevolence and possessed with self-discipline to philosophic study. No wonder that the remark of the milkmaid proved such a prolific seed in so fertile a soil, as only the brain of a Jenner afforded. He abhorred all connection with a progress which can not discriminate between essence and accident, between truth and her clothes.

He knew that the practice of medicine is not and can never progress to become an *exact science*, because the individual equation always contains an unknown quantity—*vital resistance*.

He worked on common ground; he had common-sense, because he knew the law of average.

He taught the principles of loyalty as a virtue which should never go out of fashion.

He ever oiled the troubled waters, knowing that medicine serves best when it builds, and not when it fights. With him the law of progress in medicine was not an inexorable edict, but a command of reason. He knew that our instincts are the legacy of ages; that the office of reason (the oldest and yet most acquired faculty of man) is not to inaugurate a sort of nihilism of the senses to strangle and crush out the instincts, as some suppose, but to train, cultivate and develop them along the lines made necessary by the ever-changing conditions of civilization.

Edward Jenner was a man of absolute integrity, of superb courage and of true sincerity. Integrity is the oak around which all other virtues cling; courage is the support and guard of the other virtues; sincerity is the perfect mirror of the mind, it reflects the honest thought.

Jenner knew that sincerity is the foundation of character and that without it there is no moral sublimity. He knew that without character, without honesty, without bravery, there is no worth; and that below indolency, below poverty, there is the rayless abyss of reputation. His soul thirsting for truth, he was ever repulsive to a practice sunk into dead formalities. He honestly braved the work before him and showed to the world what living medicine means. He not only acted without fear, but he had the fortitude of soul that bears consequences of the course pursued without complaint. He demonstrated the truth, that the heart must be in any life-work that is to be of permanent benefit to humanity; and that above all wealth, above all station, above the robed and the crowned, rises the sincere man. He knew that the confidence of mankind is not set down in writing, signed, sealed and delivered to order, but resides in honor. He followed the light of his brain and the impulse of his heart.

He was attacked and made a "mark for every passing blast of scorn to whistle through" by "a class of critical dicta everywhere current," but he never wavered and he never swerved. He said nothing harsh; he did nothing rash. He answered the insulters with a smile, and labored on quietly, faithfully and patiently as eternity, knowing what the end would be. He

knew that truth can wait, that the day would come, and he lived to be rewarded and honored by seeing the best and greatest minds of the world acknowledge the rays of light shed by his torch.

We can proclaim truly that, were it not for such brave, sincere and honest souls like Jenner, "the dust of antique time would be unswept, and mountainous errors be too highly heaped for truth to overpower."

Edward Jenner was the ideal country doctor. Born in a quiet country town, a representative of an honorable family, an orphan at the age of six years (his father dying), reared amid the influences of his native groves, meadows and the health-giving country air, and the cruel superstitions and traditional customs of his age and time, Jenner developed a passionate love for nature and a marked manhood and courage to investigate. He found the height of his ambition and the zenith of his power to benefit mankind while walking with nature—a country doctor during his entire professional life. He had the physicianhood and fortitude to search nature by following her, and to honestly reveal the light he saw. He belonged to the distinguished class of country doctors to the credit of whom truth records most of the greatest discoveries freighted with the greatest good to humanity—who did accept early Dame Nature's invitation to Agassiz:

"Come, wander with me, she said,
Into regions untrod,
And read what is still unread
In the manuscript of God."

Jenner thus learned to know early that "childhood is the era of scientific acquisition," and ever after labored as a child of nature:

"To search through all I felt or saw,
The springs of life, the depths of awe,
And read the law within the law."

He assumed the whole responsibility as is common to country doctors, with whom responsibility is an educator. He wholly disapproved any attempt to stifle doubt as distinct from the effort to confront it fairly with the deeper facts of life. He taught us well the lesson of magnanimity and toleration. He was the ideal country doctor, a boon to medicine and humanity, cultivated by true and natural methods, enlisted in the service of love, daily exercised in deeds of benevolence and unselfishness, and representing a class who are walking together in the pathway of progress in honorable and rational medicine, who can justly proclaim:

"We are the ancients of the earth,
And in the morning of our times."

Unless all signs fail, the medical world will ever delight to honor the memory of Edward Jenner, for his love of nature and all that is truthful and good, for his benevolence and unselfish desire to prevent and relieve human suffering, and for his patient and persevering pursuit of whatever promised to result in material benefit to mankind.

When the great work of a good man has bestowed its boundless blessings upon nations for an hundred years; when it has stood the scientific test of practical experience for a century in spite of jeer and taunt; when the entire civilized world has bowed in acknowledgment its centennial homage; in honoring the memory of such a man, in speaking words of praise and gratitude to the commemoration of his name, we pay a lasting tribute to ourselves.

ORIGINAL ARTICLES.

THE FIELD OF MONOCULAR FIXATION AND ITS RELATION TO HETEROPHORIA.

Read before the Section on Ophthalmology at the Forty-seventh
Annual Meeting of the American Medical Association, at
Atlanta, Ga., May 5-8, 1896.

BY CASEY A. WOOD, M.D.

CHICAGO.

So little is said in English text-books on ophthalmology about the field of fixation—monocular or binocular—and so much space is given to it in that portion of foreign works devoted to physiologic optics that it seemed worth while to bring up the subject for discussion here. We are so concerned in investigating the relations of the extrinsic ocular muscles, as they are engaged in fixing some point (doubtless the most important point) immediately in front of the eyes, *i. e.*, at the center of the field of fixation, that we are apt to lose sight of the fact that the fixing of eccentric objects and points at the extreme periphery of the field is also of great importance. It should be remembered that while binocular vision may be obtained and maintained with ease, so long as the object fixed is directly in front, this result is often difficult or impossible when looking obliquely to the extreme left, right, up or down. Not only is this true in marked parietic conditions of one or other of the straight or oblique muscles, but it is also true in the so-called insufficiencies. In other words the usual tests for heterophoria or heterotropia—the various kinds of photometric measurements especially—give us but one phase of the conditions under which the extrinsic muscles do, or fail to do, their daily work.

I wish to confine my observations to one of the means by which we may measure the excursions, in all directions, of each eye separately, as indicative of the part which eccentric excursions play in the production of muscular asthenopia.

It is to Landolt that we are chiefly indebted for utilizing the field of fixation in practical ophthalmology. The monograph written by Eperon in the *Traité complet*, taken in connection with Aubert's chapters in the Graefe-Saemisch Handbuch, tell us in a few pages about all we know of this subject.

My only apology for referring to these fundamental laws of optic physiology is that I have made a few observations which may be of use to those who are now pursuing this interesting study.

The field of fixation of an eye includes all those points which the eye can successively fix, the head being completely at rest. The limits of the field represent the extreme excursions of the eyes in all directions. At least three methods (two objective and one subjective) have been and may be employed in making these measurements. One of the objective tests consists of observing, on the center of the cornea, the image of a small flame carried along the arc of the perimeter, just as one does in determining the degree of squint. Another plan of objective observation is seen in the ingenious and excellent tropometer devised by Stevens and described by him in the *Annales d'oculistique* for July, 1895. By means of this all the movements of rotation can be exactly measured.

In the subjective method we utilize the visual acuity and the perimeter. The object is usually a