

SCIENCE AND INVENTION.

MEDICAL SCIENCE AND THE PRESIDENT'S DEATH.

THE medical journals are now beginning to have their "say" in the President's case. They do not by any means agree except in acknowledging that the wound was necessarily fatal. Whether the attending physicians ought to have known this and whether they adopted the best method of treatment are different questions. *The Medical Record*, in an article from the pen of Dr. George F. Shrady, criticizes the President's physicians sharply. He says:

"Taken in connection with the clinical history of the case, and the extremely optimistic views of some of the consultants, the discovery of certain of the lesions named is both a surprise and a disappointment. It is a pity, indeed, that such an evident failure in diagnosis should have been so conspicuously demonstrated to the general public. It has proved, in fact, the lost opportunity for an entirely contrary exhibition of judgment, skill, and tact.

"The operation of suturing the stomach wounds was timely, proper, and, so far as it went, brilliant. Medical men the world over were proud to hear that it had been done so promptly and so well upon a person of such importance.

"But now, in the light of the autopsy, we know that the operation, carefully conducted as it was, was necessarily an incomplete one. This is speaking of the procedure from a strictly surgical standpoint, irrespective of the ultimate doom of the patient in any event. Time was precious, and prolonged search for the ball was impossible, consequently the condition and course of the wound beyond the stomach could not be positively ascertained at the time. The surgeons satisfied themselves, therefore, that it was safe to leave this terminal wound to itself and close up the abdomen. They used their best judgment under trying conditions; but unfortunately that judgment was in error.

"Then came the bulletins and interviews so eagerly read by an anxious nation. It was stated at first that the stomach wounds were the only causes for anxiety, that the ball having lodged in the muscles of the back would become safely encysted, and that septic peritonitis from possible leakage of the stomach contents was the only thing to be feared. When the latter danger was over, there came the surprising intelligence that the patient would certainly recover. This in the face of a continued high temperature and rapid pulse! Then it was announced that all the wounds had healed perfectly, and the only real danger was centered in a weak heart. Hardly had this bulletin been issued when it was announced that the external wound was found to be infected, necessitating the removal of some stitches. Still it was said that the distinguished patient was doing excellently well—in fact, even better than before. Next was the report of an attack of indigestion, claimed to be due to food given too soon, and last of all and without warning came the appalling accounts of his rapid collapse and surprisingly quick death.

"Worst of all, however, were the actual facts of the autopsy that seemed to prove to the public that the doctors had been wrong in their conception of the case from the beginning to the end. Sadly enough, not one of the principal lesions gave any evidence of its existence during life. The good condition of the wound behind the stomach, of which all the surgeons were so pronouncedly confident, was an illusion and a snare. Instead of the terminal track of the bullet being healed and the ball encysted, it was found at the autopsy to be gangrenous throughout. Thus a most startling error of diagnosis was flauntingly accentuated by an indignant and astonished press."

A much more moderate criticism is that of the *New York Medical Journal*, which, while holding that the physicians committed an error, considers it a pardonable one. Says the writer:

"It is perfectly certain that there was no technical fault in the operation, and that it may be said with equal positiveness that it would have verged on madness to prolong the search for the bullet after it had been ascertained that it had not inflicted any very

grave injury beyond that of the stomach—ascertained that is to say, within the limitations of warrantable efforts. The amount of time consumed in a major operation, especially one dealing with the abdominal organs, is of vast importance as affecting the patient's chances of recovery; other things being equal, a short operation promises much better results than a prolonged one, for every minute of exposure of the viscera to the air and of their subjection to manipulation detracts from the probability of the patient's ultimate recovery.

"The operation having been finished without seriously taxing the distinguished patient's vital powers, there followed at least five days of freedom from serious symptoms. This we say with full appreciation of the fact that the record of the pulse and respiration seemed ominous, for the high rate might have been due to any one of a number of conditions not in themselves of grave import. The hopeful view was taken, and quite naturally, that it could be so explained. It is easy to be wise after the event, and to say that in this respect the surgeons were in error; err they certainly did, as the result shows, but to err in such a way argues no incapacity or avoidable lack of judgment—it simply, we repeat, illustrates the fact that the medical man is not a perfect being."

That everything possible was done to save the President's life, and that his physicians are in no wise to blame, is the opinion of *The Medical News*, which holds the President's "constitutional lack of vitality" responsible for the fatal issue. It says:

"It is clear that no human skill could have saved the President's life and that everything that modern scientific medicine could possibly suggest was done for him. The surgeons have been all too freely blamed for their optimistic bulletins. Their wishes may have obscured their better judgments. It is always easy to be wise after the event. At noon on Tuesday, September 9, the President's pulse was 104 and his temperature below 100° F. This certainly presented a most encouraging condition of affairs after the shock to which the patient had been subjected. There was every reason to think that danger from infection was past. The fatal issue emphasizes the necessity that always exists for most careful prognosis whenever patients are much advanced beyond middle life. The present case, however, contained elements so entirely unusual that no human foresight or even the greatest possible caution could have prevented the sad disappointment that ensued."

This paper particularly examines the theory that the bullet was poisoned, and dismisses it as untenable. To quote again:

"The President died because he could not carry on the processes of repair, and because the effort to do so was more than the vitality of the tissues involved could support. This, of course, excluded the possible presence of poison brought by the bullet or of destructive action by the pancreatic juices. If either of those was a factor, it needs only to substitute it in the statement for the assumed defective vitality of the patient. Whatever cause acted, it was unrecognizable at the operation and uncontrollable then or subsequently."

The Balloon as an Aid to Exploration.—The recent success of M. Santos Dumont in aerial navigation recalls to the editor of *The National Geographic Magazine* the argument of the famous American aeronaut Wise in favor of the use of balloons in exploration. "If, for instance," writes Mr. Wise, in "A System of Aeronautics," 1850, "we take a balloon of limited size, about 18 feet in diameter each way, it will, when inflated with hydrogen gas, be capable of raising 160 pounds, independent of its own weight. Now, if this be so fastened to man's body as not to interfere with the free use of his arms and legs, he may then ballast himself so as to be a trifle heavier than the upward tendency of the balloon, which will be nearly in equilibrio. . . . He may then bound against the earth with his feet so as to make at least a hundred yards at each bound.

"This the writer has often done, in the direction of a gentle wind, with the aid of his feet alone, after his balloon had descended to the earth; and, on one occasion, traversed a pine forest of several miles in extent, by bounding against the tops of the trees. Such a contrivance would be of inestimable value

to exploring expeditions. Landings to otherwise inaccessible mountains; escapes from surrounding icebergs; explorations of volcanic craters; traversing vast swamps and morasses; walking over lakes and seas; bounding over isthmuses, straits, and promontories, or exploring the cloud-capped peaks of Chimborazo, could thus all be easily accomplished."

PEARY'S CIRCUIT OF GREENLAND.

IN Lieutenant Peary's sledge journey of the spring of 1900, as described in the letters recently brought from him from the Arctic regions, the indefatigable explorer greatly enlarged our knowledge of Arctic geography. We are now enabled, it appears, to draw a nearly complete map of the Greenland coast,



Reduced from "Northward." Courtesy of Frederick A. Stokes Company, New York.

LIEUT. R. E. PEARY.

showing it clearly as an island, with the exception of a very insignificant stretch. The results of this work are geographically very important, according to the *New York Sun* (September 18). Says an editorial writer in that paper:

"Mr. Peary's sledge journey in the spring of last year resulted in another most conspicuous addition to our knowledge of Arctic geography. Greenland is the largest island in the world. With the neighboring islands that geographically pertain to it, this Greenland land mass comprises probably nearly half of the total area of all the Arctic islands. No more important contribution could be made to Arctic geography than to fix the limits of this enormous territory, and this is the work that Peary has done. He has surveyed the northern edge of the Greenland archipelago, and it may now be mapped with approximate accuracy. The coasts of Greenland, extending for some thousands of miles, have now been outlined except the comparatively short stretch between Independence Bay, discovered by Peary nine years ago, and Cape Bismarck, on the east coast. The enormous task of determining the shape and extent of Greenland, in progress since the Norsemen discovered the island nearly one thousand years ago, is completed.

"Peary's contributions to this work have included the survey of a part of the unknown coast of Melville Bay on the west coast, the determination of the extreme northwest coast and of the en-

tire north and northeast coasts as far south as Independence Bay, and the rectification of earlier surveys, making important changes in our mapping of the long, narrow channel leading through Smith Sound to the part of the Arctic Ocean washing the northern shores of Greenland. In addition to his coast work, he has traveled 2,400 miles on the inland ice-cap, defining its northern termination, and has twice crossed Grinnell Land, extending farther south the mapping of its western shores. Two explorers have attained a higher latitude in the landless eastern part of the Arctic Ocean; but whether or not Peary succeeds next year in equaling or surpassing the approach to the pole made in the Eastern hemisphere, he will always be known as the pioneer who has made far larger additions to our knowledge of the extreme northern lands and of the most northern inhabitants of the world than any other explorer.

"Peary's plan for pushing north toward the pole next spring eliminates the route followed by Beaumont and Lockwood across Robeson Channel and up the west coast of Greenland, as his discoveries last year proved that he could travel along a shore line to the north only a few miles farther than the point Lockwood attained. If the ice conditions are practicable he will therefore strike directly northward over the sea from the west side of Robeson Channel. If the sea happens to be open or is choked with drifting floebergs, as may possibly be the case, his plans may be defeated, but no explorer can do more than he to surmount great difficulties. With reasonably good fortune it is to be expected that Peary will make another splendid record in his next and probably his last Arctic campaign."

FOOD VALUE OF THE POTATO.

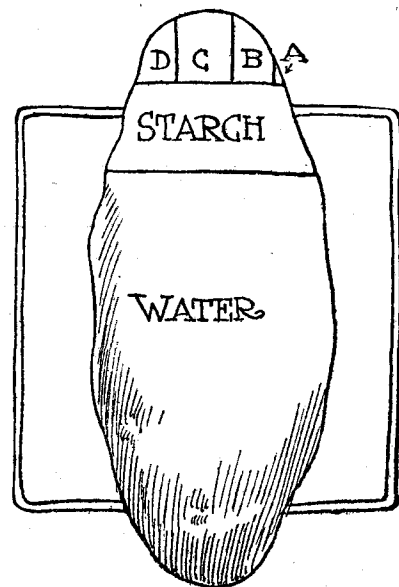
THE accompanying diagram, which illustrates graphically the composition of the ordinary potato, has been prepared for the United States Department of Agriculture and appears in one of its recent publications. We quote the following description from the *Philadelphia Record* (September 13):

"The popularity of the potato as a foodstuff is well founded, and is due to its prolific yield, superior keeping qualities, ease of propagation, and agreeable flavor. It was introduced into this country at the time of Raleigh's voyages to Virginia, and has steadily increased in popularity ever since.

"Every school child is aware that potatoes are classed as starch foods, and that their bulk is made up largely of water. . . . It is chiefly on account of the starch content that potatoes are eaten, and while they

are apparently not economical foods, owing to the large proportion of water which they contain, this is not actually the case. In other foods, as for instance, rice, there is four times as much nourishment as in an equal weight of potatoes, but then water or milk is added to the rice in preparing it for the table, so that when ready to be eaten it very much resembles potatoes in the assimilable proportion, bulk for bulk. Equal weights of the two foods do not cost as much in each case.

"Being chiefly starch, the potato is valuable as a source of muscular energy and does not serve to build or repair the body tissue, except in a very small degree. This explains why potatoes are generally served with foods rich in tissue-making properties, such as meats, and why it is that large numbers of the



COMPOSITION OF THE POTATO.
A, Fat; B, crude fiber and other carbohydrates, exclusive of starch; C, protein; D, ash.