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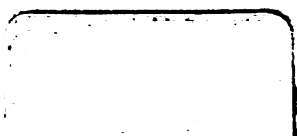
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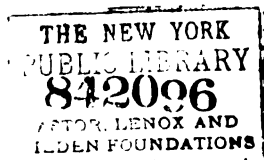


The
Quarterly Journal
of the
University of North Dakota



VOLUME SEVEN
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The Quarterly Journal

OF
THE UNIVERSITY OF NORTH DAKOTA

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The Quarterly Journal

VOLUME 7

OCTOBER, 1916

NUMBER 1

President Sprague's Administration of the University of North Dakota

HOMER B. SPRAGUE,

President of the University of North Dakota from 1887 to 1891

"**H**OW many Indians have you in your university?" was the first question asked by my son, then a student in a preparatory school; a very natural inquiry for a youth fresh from reading Longfellow's *Hiawatha*, on being told that he must come to the new institution

"In the land of the Dacotahs."

About that time, while a Faculty meeting was in session, one of our professors glancing thru the window saw a huge wolf standing apparently in deep meditation on the side of our campus toward Grand Forks. Instantly of course a five-minute recess!—a seizure of a rifle, a sixteen-shooter presented me by my brother-in-law, president of the Winchester Repeating Arms Company. But before we could question the intruder, he vanished toward the city.

A few weeks later there was a similar experience with a like result. A big prairie wolf, a quarter of a mile away beyond the railroad, declined an interview, and continued his swift journey toward Minnesota. But we saw no Indians, except fifteen or twenty migrating southward. They bivouacked on the bank of the "Coulee."

Arriving at Grand Forks at nine in the evening, October 4th, I was cordially welcomed and hospitably entertained by Professor Merrifield. I had met him at my son's table at Auburndale, Mass., and was so impressed by his evident good sense and sincerity that I was more than half persuaded to join in what seemed a romantic enterprise in "the wild and woolly west." Early in the morning of October 5th, as we started out to see the city, a young lady, a former pupil of mine in the Girls' High School in Boston, came tripping across the street exclaiming, "Why, Col. Sprague! where did you come from, and what has brought you to the end of the earth?"

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I answered "I have come from darkest Massachusetts to the centre of the continent, to take a look at your university."

Our walk took us to the Campus some two miles away. Except a little barn or stable, there was then only one building now known as Merrifield Hall. I was somewhat startled when he told me that three and a half months previously a wind storm had nearly demolished the southwest half, leveling walls, chimneys, and the ornamental cupola. I asked him if the inhabitants had cellars or subterranean retreats in case of cyclones. He assured me that they never had cyclones, tornadoes, or whirlwinds; that this was a "straight blow"; and "the reason the thing collapsed" was that the brick had been laid in mortar that froze before it had time to set.

A solid foundation had been laid for an astronomical observatory; but the ground was so much jarred by heavy trains passing on the railroad that it was feared the trembling might injure the instruments or interfere with the delicacy of their operations. So the plan was abandoned. On that foundation long afterwards the present Macnie Hall was built.

No quarters had been provided for president or professors. There were four of the latter, Henry Montgomery, Webster Merrifield, John Macnie, and H. B. Woodworth. They were all living at the city, two or three miles distant. For four weeks, Oct. 6 to Nov. 3, Mrs. Sprague and I were at the Hotel Richardson on Third Street.

For several reasons it seemed important that some if not all of us should reside on the premises; but for three years none had been willing thus to go into exile.

It is the inestimable advantage of a small college that the professors can keep in touch with the students, can be to them "guides, philosophers, and friends." I remembered that at Yale, thirty-five to forty years before, the young men were rarely or never visited by members of the faculty. Speaking of the Yale professors, one of the best men I ever knew, an intimate friend in college and for many years afterwards, said sadly, "No man cared for my soul." He was mistaken; but it often seemed that we were sheep without a shepherd. He sent his sons to Williams college.

There was another reason more visible and palpable. Here was public property worth perhaps a hundred thousand dollars; a building just repaired at great cost, 150 by 50 feet, three stories high above the basement, containing an auditorium (assembly hall or chapel) that would seat two hundred, lecture halls, recitation rooms, library, museum, laboratory, apparatus, lodgings for a score of young

women and for twice as many young men, much furniture, a boarding department with dining room and kitchen, janitor's living quarters, a heating plant that burnt up fourteen hundred cords of wood in a season;—the whole constituting a complicated machine.

A salaried military instructor resided there; but he seemed to repudiate the idea that he was to take care of the property, or that it was any part of his duty to keep order among the young men except during military drill. He was gentle and kind, and he "run" the boarding department; but was generally more ornamental than useful. A very intelligent and competent gentleman, a man of real ability, Major Hamilton, secretary of the board of trustees, rendered at times important service and always wise counsel; but he was much of the time inaccessible, residing on the banks of the Red River three miles away.

Here then was imperative need of constant supervision, often of careful guidance, sometimes of quick and strong executive action. It was no desirable position to be thus care-taker, counsellor, and policeman, in addition to my proper function as president; but the duty of undertaking it seemed clear.

Accordingly on the third of November, 1887, after I had partitioned off rooms on the top floor of Merrifield Hall and installed new furniture, I took possession of rooms 27 and 29. We hoped for the early completion of Davis Hall.

Taught by a four-years soldier experience during the war between the states, I immediately upon my arrival instituted Sunday morning inspections after the custom of the army. This inspection included at least once in every week, and sometimes twice, a glance at every young man's personal appearance and dress, and a careful examination of his room, furniture, bed and bedding, and the orderly arrangement of every thing (for each student took care of his own quarters). They were encouraged to make known their wants. I have a record of these Sunday inspections continued thru all the years of my presidency.

For the young ladies living at the University a similar service, modified to suit circumstances, was performed by Miss Jennie Allen. I seize this opportunity to speak of her as one of the most accomplished and faithful of women, a learned preceptress, a gentle care-taker, an efficient manager, and a wise counsellor. There should be a tablet conspicuously placed to her memory in Davis or Merrifield Hall.

In the fall and early winter of 1887 rapid progress was making in the building of the dormitory now Davis Hall. After eight

weeks' residence at the top of the main building, during which we labored not unsuccessfully to prevent cosmos from lapsing into chaos, my wife and I on Friday, Dec. 30, took rooms in the new dormitory, placing in it some four or five hundred dollars' worth of furniture which I chose to own, and which I left at last to the university.

The winter weather was severe. Often it was not agreeable or convenient for students to walk two or three miles to attend church and the same distance back. There was no regular conveyance, and the roads were sometimes bad. It therefore seemed best to institute Sunday afternoon discourses of a semi-religious, semi-literary nature. These began Sunday afternoon Nov. 20, 1887, with a lecture in the chapel on John Milton. I spoke of his early life and quoted freely from his minor poems. Other talks followed on successive Sundays. The last in the chapel was on Jan. 22, 1888, the subject being Milton's *Masque of Comus*. The public were invited, and they sometimes came in considerable numbers. On the 29th of January the subject was Milton's *Lycidas*. This was the first discourse in Davis Hall, the students bringing in chairs and a piano. Occasionally choice selections in prose were read and commented upon, especially passages from the greatest of all literatures, the Bible.

By and by we generally gave up Friday evenings to receptions, each preceded by a brief lecture or essay by president or professor or other speaker, with choice music, the object being to promote acquaintance and friendship, to improve the manners of some, to develop an *esprit de corps*, and to make the University a delightful home.

The trustees repeatedly express a desire that I should as much as possible bring the University favorably to the attention of the people of North Dakota. There seemed no better way than by popular lectures. There were 86 counties, each with a superintendent of schools. Many were remote and inaccessible. Nearly all wanted educational lectures, but they were glad to hear us on any subjects. I found myself in constant demand as a speaker and at all sorts of gatherings. Work at the University was strenuous and absorbing; but it was even a relief to get away and speak at any point which could be reached on a Friday or Saturday evening. My diary shows that, among other places, I lectured during my first twenty months at Grand Forks, Fargo, Lakota, Larimore, Hillsboro, Bathgate, Langdon, Towner, Bottineau, Valley City, Hamilton,

Moorhead, Mayville, Grafton, Minto, Jamestown, Inkster, Devils Lake, Mandan, and Bismarck. At some of these I was called twice and even three or four times. No compensation was expected or received. Occasionally the other professors lectured.

Never were audiences so hungry for speech. Several times, as at Bottineau, my train was late; but the committee were awaiting me as I alighted from the cars about ten o'clock. "Of course it's too late to have any lecture to-night; please show me where I am to lodge," I said. "Oh no," they replied; "the folks are all waitin' for you in the hall." In every case the lecture room was crowded. Once—I think it was at Towner, McHenry County, May 11, 1888—there were preliminary exercises, music, declamations, speeches. My subject was Milton as an Educator. I began speaking about eleven o'clock. When I finished at midnight, the audience was in a mood to sing "We won't go home till morning!" I left them dancing thru the small hours!

My subjects were mostly educational, often on Milton or Shakespeare; sometimes Oliver Goldsmith, Money and Manhood, Public Speaking, or The Bright Side of Confederate Prisons; usually including some glorification of the University.

It may be doubted if there was ever a more heterogenous collection of students than ours. Good schools had been started, but none specially preparatory to the University. Most of our pupils at that time were to some extent self-supporting, either teaching a few months every year in the common schools, or engaged on the farms in planting and harvesting. A preparatory department had been established at the University under the care of a brilliant salaried teacher, who was also a student, Miss Cora E. Smith. In this school valuable instruction was gratuitously imparted by Mrs. Earle J. Babcock and later by Mrs. George B. Hodge and normal students. It was too soon to expect erudition. A few, like Frances M. Allen, Helen M. Bangs, T. E. Griffith, and Walter J. Marclay, are pleasantly remembered for their scholarship, but the majority were in all stages of difficult or impossible classification. Working continuously towards regularity, and for the elimination of cases exceptional or permanently troublesome, we made it a rule to reject no one, but to assign, if possible, uplifting and edifying work in some part of our curriculum. Every such special student was watched over and instructed as carefully as if a professor's son or daughter.

Cases of emergency were incessantly arising, requiring the counsel and co-operation of every professor. This necessitated an

extraordinary number of faculty meetings. My diary records a hundred and three during the first two years of my administration; fifty-four in my third year, and forty in my fourth, with a statement of the topics discust and the decisions reached in each session. As many as twenty-four items were disposed of at a single conference. Every member of the instructional force, it seemed, labored vigilantly and harmoniously not only to promote the welfare of every student but to make the machinery of the institution run smoothly and more and more in regular grooves.

In 1887 there was but one literary society. It bore the modest name *Per Gradus*. Another was soon originated, for which an affectionate remembrance of a Brooklyn (N. Y.) academy suggested the name Adelphi. The Normal students started a third, to which they gave the severe classical appellation, The Chrestomathean. We afterwards established an athletic association and a Young Men's Christian Association.

In this connection should be noted a feature never before existing in any college. At Yale it had often been observed that in the great debating societies, Libonia and Brothers in Unity, pronounced by Hon. Wm. M. Everts the best schools of discussion in the world, the time and pains spent in attendance upon literary societies, and in preparing and delivering speeches, essays, poems, declamations, and critiques, however meritorious, invariably detracted from the student's standing in scholarship as registered in the tutors' books. These never recorded anything outside the class-room. The president of each of the three was requested to hand to me a monthly report showing either his own estimate or that of an impartial critic as to the merit of each member's performance. I still have that record, which was continued till I left the University. This estimate, combined with the instructor's class-room record, was allowed weight in deciding questions of promotion or graduation. Such recognition gave an unwonted dignity and character to society exercises.

At college thirty-six years before, I had been one of the editors of *The Yale Literary Magazine*, and at Worcester, Brooklyn, and Ithaca, had lent a hand in originating and maintaining magazines (*Thesaurus*, *Adelphian*, and *Cornell Era*). In faculty meeting, February 23d, 1888, I suggested the establishment of a periodical to be edited by selected scholars with the assistance and under the supervision of one or more of the professors. I brought the matter



HOMER B. SPRAGUE

**"We will draw the curtain, and show you the picture.
Look you, Sir; such a one I was."**

Olivia in Twelfth Night
I. V. 251, 252. Schmidt's paging
(in the *Shakespeare-Lexicon*)

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up again in the meeting of March 1st and March 8th. The project was approved. Professor Macnie was appointed supervising editor. Upon his suggestion the magazine was named THE STUDENT. Miss Allen, Miss Bangs, and Mr. Marclay were selected as editors, with Peter Sharpe for business manager assisted by Horace F. Arnold. At noon, March 13th, the students in chapel elected as associate editors May Travis, Geo. F. Robertson, and J. J. Armstrong. Miss Travis declining, Miss Marie Teel was elected March 22d to fill the vacancy.

I had promised the faculty that I would contribute at least one article for every issue. Upon looking over my files I find that I furnished for every number to the end of my presidency one on Shakespeare, sometimes several, and usually one or more pieces on subjects of literary or pedagogical interest, as college news, translations from the Odes of Horace or Goethe's Faust, etc. I paid many dollars to the business manager for copies, of which I mailed 80 in April, 1888, to periodicals or prominent persons likely to be interested in our University.

Except on the banks of the Red River, miles away, there was not a tree, shrub, or bush visible within a mile of the University till May 5th 1888. That day had been publicly designated by the territorial governor as Arbor Day. It was Saturday. In the morning, accompanied by janitor Guyot, whom I paid liberally for his assistance, I went to trustee James Twamley's farm beside the river. He had given us *carte blanche*. We picked out and dug up 1 ash, 1 elm, 1 cottonwood, 3 box elders, and thirty willow sprouts. We set the sprouts on the sloping bank of the "coulee," and the trees on the side of the main building some twenty or thirty feet from it. Trustee Fulton was equally kind, and from his and Twamley's grounds on both sides of the river we selected other comely trees on the 7th of the month. Students W. J. Graham, B. E. Ingwaldsen, Willie F. Crewe, Henry G. Vick, and the elusive "Phil" Wellington helped us at night to place them in position. Several friends joined us in making up a purse for the purchase of trees which we set out on Arbor Day two years later.

In faculty meeting, April 26th, 1888, I brought up the subject of a thoro revision of our curriculum with a view to its publication in the forthcoming annual catalog. We discust it item by item for many hours in faculty meetings May 1st, 3d, 4th, 7th, 9th, 10th. We submitted the result of our deliberations to the trustees. On

the 28th we received from Hon. Mr. Heidel a communication expressing their hearty approval of the course of study.

One question upon which there was earnest discussion and lack of unanimity was whether the study of Greek in the University should be encouraged. Some would omit it altogether, both in the branches prescribed for admission and as required or optional in the college course. It seemed to be a contest between the lower utilitarianism, so unavoidable in the new territory, and the higher idealism without which life is not worth living. I stood for the arts, useful and ornamental; the sciences which prophesied man's mastery over nature; the philosophies so far as they were not substitutes but aids to the loftiest wisdom; but above all for the humanities. Greek and Latin are precious as literature, but the usual methods of teaching them are a ridiculous waste of time. They spend three, four, or five years memorizing and applying rules and exceptions that will never be of any use in after life, feeding on husks and ignoring the rich fruit.*

The same questions recurred every spring, and the trustees favored the conservatives.

The division of labor had not been carried far. The talented Cora E. Smith at one time taught 20 hours a week. Professor Montgomery, besides having the care of the museum, was expected to teach anatomy and physiology, mineralogy, geology, physical geography, botany, zoology, and chemistry! Much correspondence ensued in efforts to find the best candidates for professorships.

About the first of June, 1888, the faculty unanimously recommended Ludovic Estes as professor of mathematics and physics for the next year. There was great need in the normal department of a skilled teacher of music. On the 16th of June at a meeting held at Professor Merrifield's house in Grand Forks we voted to urge the appointment of Miss Margaret Boasberg as instructor in music and drawing.

The attendance of students during the year next preceding my administration was seventy-five. The year before, it was but forty-eight. During my first year the number rose to ninety-eight. It closed with examinations. There was no commencement.

* Omitting non-essentials, and giving all possible aid to make the study easy, for it is hard enough at best, I have in one year taken students, who had never studied either Greek or Latin, thru these two languages as required in preparation for admission to the highest colleges. In one case it was done in five months. They were admitted to the Freshman class without conditions.

Naturally many annoyances had occurred. Only two will ever be mentioned. On the 28th of April, '88, Mrs. Sprague and I were threatened with a lawsuit to force us to pay for all the furniture that had been sent to Davis Hall. Two or three weeks later the suit was actually brought; but one of the best of our trustees, Mr. Fulton, graciously came to the rescue. He took all the burden upon himself.

The other annoyance was far more serious. For a while we were filled with anxiety; but in dealing with the trouble a plan was wrought out that proved a great and unmixed blessing to the university.

"Man shall not live by bread alone," says the highest authority; but some one irreverently asks, "What is more vital than victuals?" There were complaints about the quality and quantity of food in the boarding department. The mild and amiable colonel, perhaps in feeble health, did not superadd to his military genius the skill to "run a hotel." Information came to me at evening on the 31st of January, 1888, that without my knowledge a petition had been circulated and extensively signed by the boarders protesting in strong language to the trustees against what they called their "fodder" as insufficient and unfit. Some threatened to leave the institution and never return. The report was spreading thru the territory that our young folks were stingily treated, ill fed, half starved. Immediately (Feb. 1st) I communicated with Col. Topping on the subject, and to impress him more strongly I made a private statement to him in writing of what I had learned were the specific complaints.

On the same day I wrote confidentially to the president of the trustees, stating the particulars of the situation. The students' petition, which had 33 signatures, was already in his hands. He had at once sent a strong letter to the colonel, enclosing a copy to the faculty, and he now came with the trustees' able secretary, Major Hamilton, to the University. His letter did not reach us till Feb. 3d. At noon Feb. 10th, the floor was covered with rejected food angrily thrown there by parties unknown and undiscoverable. I ceased taking meals there Feb. 2d. There was no visible improvement in the dining room. No public denial could be made of the shortage or inferiority of provisions in the past; no confident assurance of better things in the future. There began to be much grumbling at the alleged high price of such board!

On the 13th of February, after two weeks of thought, I devised a plan that seemed likely to insure a happy solution of the distressing problem. That day I pointed out in another confidential letter to

the president of the trustees the absolute necessity of more business ability, more promptness, and more executive energy than the soft-hearted, half-sick old soldier had displayed in the management of the culinary department, the dining room, and the drill hall. I assured Mr. Roach that in my opinion better board could be furnished for two and a half dollars a week than that for which they were paying three and a half, and thus each student remaining with us from the beginning to the end of the academic year would save not less than thirty-five dollars.

This plan contemplated an entire change in the military department. The colonel had been receiving \$900 a year. The greater part, if not the whole of this, would be saved to the territory. Some of our students were members of a military company in Grand Forks, and capable of giving good drill in the "setting up" exercises, the "school of the soldier," and to some extent in the "school of the battalion"—better drill and more of it than the rest of our students had received from the salaried instructor. I had already inaugurated such effective tho inexpensive exercises.

The constant care and oversight of the buildings and grounds, superintendence from which both the military instructor and the secretary of the trustees had seemed to shrink, had already devolved almost wholly on me, and there seemed no prospect of their transfer to other shoulders at an early date.

Mrs. Sprague, the best of housekeepers and the most level-headed of business women, was willing to undertake the entire management of the boarding department, provided she could have the control of the "incidental fee" paid by each student to be devoted to its legitimate uses.

Accordingly on Thursday, the third of May, 1888, the faculty having expressed their hearty approval, a proposition was submitted in writing to the board of trustees, covering the four points, board, superintendence, drill, and "incidental fees." On the seventh of May, President Roach replied, "Your suggestions meet my entire approval, and I will endeavor to so arrange matters as to carry out the program outlined by you." All the members of the board concurred.

My second year opened with bright auspices Sept. 26, 1888. The standard of qualifications for admission was much higher than ever before. A course in letters had been marked out in the catalog. The preparatory department had been lengthened a year. In the preceding June a valuable man, Earle J. Babcock, had been ap-

pointed instructor, and his wife was able and willing to give gratuitous instruction. Here were two new and most efficient teachers. Miss Boasberg had been appointed at the same time in charge of large classes in vocal music. Professor and Mrs. Estes had just arrived. The teachers' certificates which we issued May 26th were recognized and honored as valid. The younger preparatory pupils constituted desirable practise classes for our normal students under the skilful supervision of Professor Woodworth. Our curriculum offered an education at a lower cost and yet not inferior to that of any other college in the United States.

Miss Smith continued to do excellent work in arithmetic and English. To supplement her drill in reading, the president of the University for many weeks gave an hour daily from three to four training those who were to read or speak in the literary societies, or at appointed times in chapel as was required of all.

The young men rooming in the upper story of Merrifield Hall on and after October 23d constituted one military company; those in the second story another; those who lived "down town" were after a time organized as a third company. It was understood that the best drilled should be designated as Co. A; the next best as Co. B.; the third, Co. C. They were allowed to choose their company officers. Oct. 25th the upper company chose for captain Peter Sharpe; the lower, G. S. Sprague. In the absence of a professor the ranking officer present was charged with the duty of keeping order, and prompt obedience was required to his commands.

The students boarding at the University paid but two and a half dollars a week, and the meals were acknowledged better than ever before. But on the sixth of October a rude shock was given to our confidence in our ability to furnish them at so low a rate. A contract unmistakable in its terms and distinctly admitted, to deliver to Mrs. Sprague fifty sacks of flour at an agreed-on rate, was flatly repudiated because the market value of flour had taken a sudden rise. But she kept her promise to the students, having the incidental fee to fall back on, in case of a deficit. She occasionally released the student and paid it herself. This breach of faith by the flour merchant would not be mentioned, were it not that, later on, far more serious violations of express contracts occurred.

At the beginning of the year 1889 we were suddenly made to face a dangerous epidemic. January 2d a very estimable student returned from the funeral of a relative who had died of diphtheria

at Buxton. I immediately required him, before he associated at all with other persons, to bring from the physician who attended the case a certificate that there could be no danger of his communicating the infection. But it seems there had already been exposure: on the 9th of the month a new comer, Charles S. Ritchie, had diphtheritic sore throat. I isolated him and, by advice of Dr. Wheeler of Grand Forks, detailed our fireman, Henry General, to take care of him. On the 11th Dr. Wheeler came at my request and again prescribed for him. The evening of Friday, the 18th, Drs. Wheeler and Logan of Grand Forks were summoned to see Ritchie and James Young, who was also ailing. They came between 9 and 10 o'clock. About 10 they took me aside, and whispered that those two and fireman Henry, acting nurse for Ritchie, all had diphtheria, and must instantly be quarantined! But how and where, they could not tell me.

Here was a critical situation. By a strange coincidence the territorial legislature, agreeably to repeated notice given long before, was to visit us on the morrow, scheduled to arrive between 9 and 10 in the morning! Our professors and students were expected to make it a festive occasion.

The attic which I had long planned to convert into a gymnasium for the special use of our athletic association, and which extended nearly the whole length of the building, was nearly empty. A long flight of steps led up to it. It was midwinter and I reasoned that the powerful upward draught of warm air would render it impossible for any taint of infection to be wafted down. A moment's reflection convinced me that the big room would be an admirable hospital. Instantly about ten o'clock, I called janitor Guyot. He and I, after half disrobing, immediately removed the three patients and all their personal belongings to that attic. I appointed Young's brother Samuel to stay with them. I charged him to look constantly after their comfort, and minister to every want of theirs.

It was now near eleven o'clock, but I summoned all the young men in the building to meet at once in the chapel. Explaining the situation, I made them pledge themselves to show all possible courtesy to the legislators who were coming in the morning, but not to lisp or hint a word to them or any one about diphtheria.

The senators and representatives, about sixty strong, some of them accompanied by their wives, arrived that Saturday morning about eleven o'clock. We entertained them as best we could with speeches and music in the chapel. At two o'clock they sat down

to a dinner carefully prepared under Mrs. Sprague's direction in the dining room of Davis hall. In the evening there was a banquet for them at the Ingalls House in Grand Forks with more speeches and music, the festivities lasting till one o'clock Sunday morning. They went away impressed with the belief that the University was a decided success!

That Sunday the locked room of the patients was thoroly fumigated under the directions of the doctors.

The visiting Solons would have remained all the while in blissful ignorance of the sickness, had not a self-appointed investigating committee, mousing around, discovered in the third story the mysterious stairway leading to the attic. At its foot was a large placard strictly forbidding every one to ascend. Of course they immediately rushed up and demanded of the four young men why they were there. At the word "diphtheria" they scampered back. The news spread like a prairie fire.

We flattered ourselves that we had effectually sequestered the dreaded disease. The regular exercises continued for several weeks. But on Tuesday noon, Feb. 5th, 1889, Dr. Logan of the board of health, who had been called to see Mr. E. T. Burke, a normal student in Merrifield Hall, and Georgie, the janitor's child in the basement, diagnosed both cases as diphtheria. All the professors being present, a faculty meeting was summoned, Dr. Logan was called in, and we immediately voted to close Merrifield Hall. Between one and two o'clock the students were assembled in chapel, and the necessity of vacating the building was explained. We found that we could make room in Davis Hall for twenty-one who had not been exposed to the contagion. So, next morning we took in the two Ogdens, two Engebretsons, Clayton, Gram, Bjornson, Schellenberg, McBain, Marclay, Vick, Rod, Fiveland, Hempsted, Yon Steenberg, Harvey, Egerton, Richard, Arnold, Evanson, and Goldwin Sprague.

The students and teachers in the building numbered forty. We endeavored to keep them all usefully occupied. That evening a Shakespearean lecture was given them in the parlor. Miss Allen gave Latin lessons daily. We hoped to be able to reopen Merrifield Hall and resume regular exercise in a week or ten days; but the University was closed from February 5th to March 4th. During that period Professor Merrifield lectured in Davis Hall Feb. 19th and Feb. 21st on his travels in Europe; Professor Macnie Feb. 18th on the Fall of the Roman Empire, and at noon Feb. 20th on the Feudal System. President Sprague during that month gave four-

teen Shakespearean lectures in Davis Hall, and one at Minto, Feb. 16th on Rebel Prisons.

At noon, Feb. 6th, a telegram came from Trustee Fulton, requesting me to come immediately to Bismarck. Leaving by train at 4 P. M. I reached my destination at 5:40 next morning. After two and a half hours walking the streets, I succeeded about 8 o'clock in getting into the Hotel Sheridan. Much discussion with committees or individuals ensued on the needs of the University. At evening I had to make a speech at a so-called "Camp Fire" in the Skating Rink. Next day I again address the legislative committee. Sunday morning, Feb. 9th, I left the capital for home.

That day Guyot's child died, Guyot having remained with his family in the basement of Merrifield Hall. Mrs. Sprague, whom I left in charge of everything, promptly sent them in a carriage to a house in East Grand Forks. While there two other fair children of the janitor passed sadly away.

During my three days' absence a son of the territorial Superintendent of Instruction violated the strict quarantine rule against entering Merrifield Hall. Mrs. Sprague who had had experience in a noted yellow fever case at Wellesley college, saw him as he issued. She instantly locked the doors to prevent his return to Davis Hall. He tried in vain to enter. The day was bitterly cold, but the air between the two halls was hot, and the third commandment of the Decalogue was treated with scant respect. She was inflexible, and he at last vanished.

On the 11th of February I arrived from Bismarck at 7 A. M. Six days having elapsed, and little or nothing having been done by the authorities to make Merrifield Hall safe, I called a faculty meeting to be held at 4 o'clock that afternoon at Dr. Logan's office. All the professors were present. We unanimously requested Professor Montgomery to cooperate with Dr. Logan in examining the plumbing, causing all needed repairs to be made, and then without delay to assist him in thoroly and promptly disinfecting by fumigation and washing. The plumbing was found very bad; it took a long time and many tests to rectify it: the fumigation was most thoro, beginning at noon Feb. 25th, burning up 750 pounds of sulphur, turning Merrifield Hall into a volcano; the washing and scrubbing with disinfecting fluid, commenced Tuesday evening, the 26th, and continued with the assistance of ten or twelve loyal students till noon, Friday, March 1st. At last on Saturday, March 2d, Dr. Wheeler, health officer of the county, gave his consent to the reopening of the building on the following Monday.

By vote of the faculty Feb. 15th, the usual Easter vacation was omitted.

On Monday, Feb. 25th, Josie Forbes, the young child of the housekeeper in Davis Hall, was taken sick. Mrs. Sprague instantly recognized the illness as scarlet fever and insisted on the girl's immediate removal. This was done, tho all doubted the judgment of Mrs. Sprague. The child was carefully wrapt in blankets and carried by students to the house of Mr. Davidson a long distance to the southeast. It was none too soon; for Dr. Herriman of Grand Forks next day pronounced it a clear case of scarlet fever.

Late in the evening of May 6th a committee of prominent citizens, of whom Principal Clemmer of the Grand Forks high school was one, waited upon me and urged me to permit my name to be used as candidate for delegate to the approaching Constitutional Convention at Bismarck. They were sure that I would be elected and very likely be made Speaker to preside at the Convention. I answered that my first duty was to the University; the present was a critical period in its history; we were discussing proposed important changes in the course of study; deciding upon the contents and wording of the annual catalog; preparing for final examinations and our first annual Commencement; deciding what degrees should be awarded and to whom; and considering other matters of importance: therefore I must decline to enter upon any new field of activity, however attractive and honorable. I promised, however, to study the question, What should be the provisions of the Constitution on the subject of Education?

Accordingly a careful examination was made of the fundamental laws of different states. As a result of such investigation and much reflection, it seemed to me that there ought to be incorporated in the article four basic principles: (1) a high standard of qualifications, intellectual and moral, as a prerequisite to admission to the exercise of the elective franchise; (2) except the strictly professional schools, a unification of all the educational forces of the state; (3) free tuition without cost in all grades beginning with the primary and ending with the collegiate; (4) a solemn injunction upon all who as teachers have the care of children and youth, to inculcate by precept and example correct principles and right conduct. To this I added a recommendation that no lands donated for education by state or nation should be sold but by the exprest consent of two or three successive legislatures.

These matters appeared to me of so much importance that on

the 19th of June, 1889, I mailed to all the County superintendents whose addresses I could obtain, and to many prominent educators and influential gentlemen, a letter of which the following is a copy:

"Dear Sir,

"The near approach of our Constitutional Convention, and the importance of incorporating right educational principles in the fundamental law of our state, and of realizing the largest possible income from all lands and other property that have been or may be received from any source for the promotion of public education, will, I trust, be accepted by you as a sufficient explanation of my action, which might otherwise seem officious or presumptuous, in sending you this letter.

"The question, What ought the Constitution to contain on the subject of Education? is certainly one of the most important that will come before the delegates. I have reason to believe that some of them would be glad of an expression of opinion from practical educators.

"You belong to this latter class. Will you kindly aid in the solution of the problem by at least presenting your views? If you will embody these in the form of an Article such as you would like to see in the Constitution, and send the same to me at Bismarck on or before the tenth of July, I will endeavor to have due weight given to your suggestions, and you may thereby render most valuable service to the cause we all have at heart. Please extend a similar invitation to other teachers and school officers.

"Would it not be well also to have a quiet conference of educators at Bismarck, say on the 12th and 13th of July? Will you attend such a meeting?

"I venture to suggest for your consideration two points among others:

"1. Would it not be advisable to have an earnest general statement in the new Constitution, expressive of our sense of the importance of the subject and of the duty incumbent upon all superintendents, teachers, legislators, magistrates, and persons in authority, to promote, to the extent of their power, the interests of right education? Such an article exists in some of the State Constitutions, and I know that it has a silent yet powerful influence for good.

"2. Would it not be wise to place such restrictions upon the sale of school and other lands donated for public education as should insure against the possibility of an ill-advised or hasty alienation of them? Specifically, would it not be well to require the concurrent action of two or three consecutive legislatures, securing ample pub-

licity and careful deliberation, before any such sale should be authorized?

"Hoping that you will at least transmit to me at Bismarck your counsel on these matters, and also that, if possible, you will be present there in person July 12th and 13th, I am,

Truly yours,

HOMER B. SPRAGUE."

Quite a number of the gentlemen thus appealed to, among them Joseph Kennedy, Supt. of Traill Co., responded with interesting and wise suggestions. A large number were represented either in person or by letter at the conference in Bismarck on the 12th and 13th of July. There, after reading and comparing the Articles on Education in many of our most advanced states, I submitted as desirable to be incorporated the following propositions:—

"1. A high degree of intelligence, patriotism, and integrity on the part of every voter in a government by the people being necessary to ensure the efficient and harmonious working of the governmental machinery, and to avoid costly and dangerous mistakes, as well as to promote the general prosperity and happiness of the people, it shall be the duty of the first legislature after the adoption of this Constitution to establish upon a sound basis, and of all future legislatures liberally to maintain and by all suitable means to perfect, a system of common schools beginning with the primary and extending without interruption through all grades, so as to include a normal and a collegiate course, free of tuition throughout to all the children and youth of the state.

"2. In all such schools instruction shall be given, so far as practicable, in those branches of knowledge which cause the possessor to understand the nature of our government, to know his rights and discharge his duties as a citizen, to love his country, and to cherish as sacred the principles which underlie our free institutions.

"3. All legislators, magistrates, and other civil officers, and especially all teachers in public schools shall endeavor by instruction and precept, and still more by example, to impress upon the minds of the young within their influence or under their care, the vital importance of truthfulness, temperance, purity, industry, kindness, public spirit, fair dealing, respect for honest labor of every kind, and loyalty to enlightened conscience.

"4. The legislature shall take such action as may be needful to prevent illiteracy, secure a reasonable degree of uniformity in courses of study, and by all proper means to promote literary, industrial, scientific, and moral improvement."

These propositions were unanimously approved.

In the matter of lands donated for education, my proposition was rejected. The educators present would allow one-fourth to be sold during the first five years, one-half during the first fifteen, and three-fourths during the first twenty-five; the remaining one-fourth never to be sold.

On motion of Delegate Johnson of Lakota I was invited to address the Constitutional Convention. This I did briefly at 4 P. M. Saturday, July 13th. But my legislative experience in Connecticut many years before had taught me that judicious action is to be secured by argument and persuasion with individuals rather than by forensic efforts, and so for several days the work was carried on privately.

Tuesday, July 16th, I attended an educational conference at Fargo. Territorial Superintendent Rose had invited the 86 county superintendents. They made me chairman of a committee on the proposed constitutional article. By invitation I submitted to the meeting the results of our Bismarck deliberations. In substance they were cordially approved.

Some of my propositions fared hard in the hands of the tinkers at that July Convention at Bismarck; but what is perhaps the most important of them all, the recognition of the imperative need of sound education and high moral character as essential prerequisites to admission to the exercises of the elective franchise, mesurably escaped mutilation. It still stands at the head of the Article; and thus, in theory at least, North Dakota is in one important respect placed in advance of all other states and nations.

With the approval of the faculty our Athletic Association observed "Field Day," Saturday, May 25th, with interesting sports and contests on the campus. In the evening of June 12th interesting "Class Day" exercises were held in the parlors of Davis Hall. A third and more important new feature in university life was the first Commencement. It took place in the chapel Thursday, June 13th. The essays and orations were creditable. Seven diplomas in science, arts, and normal were awarded to as many graduates. Ex-Gov. Ordway and Gov. Melette were present and made handsome speeches. At 1:30 P. M. all in attendance were invited, and most of them partook of a bountiful collation in the dining room of Davis Hall. The trustees held a session that afternoon and elected or confirmed as instructors Mr. George B. Hodge and Mr. Earle J. Babcock. The wives of these two offered to give gratuitous in-

struction, and for a very long time they rendered invaluable service as teachers in the preparatory or normal department.

The new academic year, my third, opened with examinations for admission Sept. 25th, 1889. Next day, Professor Montgomery having resigned, William Patten, who had distinguished himself by his scientific investigations, and who had been strongly recommended by the faculty to be Professor of Biology and Curator of the Museum, was requested by the board of trustees to "enter at once upon such duties as the president of the university might assign."

Notwithstanding the strengthening of our instructional force, our labors were as multitudinous and as strenuous as before. It was necessary to hold fifty-four faculty meetings before the 10th of the following June. The routine of one year was much like that of another. We have time and space for mentioning only a few matters; those of facts specially illustrative, and these for the most part in their chronological order.

Sept. 17, 1889, Hon. H. W. Blair, U. S. Senator from New Hampshire, appealed to me in a personal letter asking my aid to secure the passage of his bill to overcome and banish illiteracy. "I hope you will help us to pass this bill. The new states are our main reliance."

The original Blair bill, which passed the Senate Feb. 15, 1888, by a vote of 39 to 29, proposed to distribute seventy-seven millions of dollars to the different states to enable them to educate the illiterate. It was impossible not to sympathize with the object in view. The statistics showed millions entitled to vote who could not read the names on the ballot, and more millions who knew next to nothing of the issues involved. The bill in a modified form had been pending many months. Making a study of it, I came to the conclusion that it was constitutional and fraught with great possibilities of good, but sadly lacking in guarantees of the wise distribution of the national bounty.

On the 12th of February, 1890, I mailed to each U. S. Senator and many of the most prominent members of Congress a printed letter urging support of the bill, provided certain amendments could be incorporated. I still believe that such action by the federal government, directed with proper safeguards and supplemented with earnest cooperation by the state's meeting the national bounty half-way, would ere this have given us an electorate quite free from the present appalling ignorance. The parents' need of the earnings

of their children, which is now the insuperable obstacle to their obtaining the education offered in the upper grammar grades and in the high schools, would have been gloriously met, and the children would have been nobly stimulated to faithful study and good behavior. It may not be too late even now.

For a year and a half after my arrival and for years before, need was felt every day when the University was in session of a post office on the premises; also of a regular army officer to give military instruction and drill. It was also felt that a signal service station at Merrifield Hall would have instructional value and enhance the reputation of the institution. President Roach had been urged repeatedly to secure these desiderata from the Washington authorities. For some unknown reason his appeals were unheard or unheeded or refused. Having an engagement of long standing to deliver another course of lectures at the Peabody Institute in Baltimore, during the week ending Saturday, Feb. 22, 1890, I determined to visit Washington and there make application in person to the Postmaster General, the Secretary of War, and the Chief of the Signal Service. I assigned written work for my classes during my absence. Having made some preparation, I presented our desires to each of these officers with as much skill as I could command. To my surprise they immediately granted all three requests; a post-office was established, Lieut. Leon S. Roudiez of the Fifteenth Regulars was detailed to be resident military instructor, and my son, Goldwin Smith, was appointed signal service officer and supplied with the proper instruments. The post office still remains in Merrifield Hall, and the signal flags still float at the top. Roudiez did good service for some years; then married and vanished.

North Dakota had been admitted as a state into the Union Feb. 22, 1889. In less than a year the new commonwealth was threatened with what many regarded as a deadly poison. The people of Louisiana had determined to drive out from their midst the notorious lottery. Its managers made a desperate attempt to establish it here. Enormous sums of money were offered, it was said, to the public treasury and to the pockets of legislators. Many politicians favored it; many respectable people. As the poet Pollok wrote of the old-fashioned theater before it had been purified by the great artists,

“Some very honest, wise, and worthy men
Maintained it might be turned to good account.”

They showed that Harvard college had several times been saved from collapse by lotteries; that many noble charities had been financed by them; that a pious lottery scheme had been planned to put a copy of the Holy Bible into the hands of every citizen in eastern Massachusetts; that at the head of the Louisiana Lottery was a great and good man, the Confederate General who commanded at the capture of Fort Sumter, at the first Bull Run, and at Shiloh, P. G. T. Beauregard; admired by all the South and incapable of doing anything wrong; justly deserving the fine tribute implied in the toast pronounced by President Davis at the Montgomery banquet, April 16, 1861, celebrating the fall of Sumter—

“With mortar, paixhan, and petard

We tender ‘Old ABE’ our beau-regard.”

Without impugning any one’s motives, the president and professors of the University concurred with a majority of the best citizens in deeming it a dangerous establishment, likely to prove an infernal nuisance. Careful not to allow the University to appear to take sides as an institution, they as individuals made vigorous protests in confidential letters, unsigned newspaper articles, and sometimes in bitter public denunciations.

On the 9th of February, 1890, the territorial superintendent, one of God’s noblemen, Hon. William Mitchell, wrote from Bismarck as follows:

“My Dear President Sprague:—

“Sunday as it is, I must write you a line. Here one topic overshadows every other, the infamous lottery scheme. Protests and petitions pour in from all directions. The outlook is good for its defeat, unless too much is offered for votes. Five in the House and two in the Senate must be bought by the gamblers to put their bill through. ‘Every man has his price’ may prove true; and if that price is offered, woe to North Dakota. * * * The Senate is in no proper humor to do right things just now.”

We finally got a promise from the governor to veto the bill and we breathed more freely. Our Professor Estes, a belligerent and pugnacious Quaker, was the most outspoken, active, and efficient in fighting it; but we all thought it a devil’s saddle, and we all did our best to keep it off the back of North Dakota. Accordingly we must all be punished, and the University, if it could not be killed, must at least be crippled.

On the fifth of March, 1890, Senator George B. Winship, whose name is still held in high honor in North Dakota, wrote me from Bismarck as follows:—

"The bill passed the Senate with all salaries cut; yours to 2,000, the others to 1,800 each.

"After it reached the House, we recalled it.

"During the absence of _____ and some of his Lottery pals, we restored all the salaries. But on final passage, a majority of all the members must be had, which is 16.

"Last Monday the bill was again considered, _____ and his friends having returned. They were indignant when they learned of our action during their absence. L_____ made another attack upon you, to which I replied. He then moved that your salary be fixed at 2,000— An amendment making it 2,500 prevailed.

"I have assurance from a good many members that they will make a fight to restore your salary. I shall do all I can to bring that about."

His effort failed. But we were "let off easy"; disaster to the University was averted; the state escaped the infection; the lottery octopus was killed; and I was the only one punished.

"The man recovered from the bite;

The dog it was that died."

I looked for redress, but it never came.

On the first day of April, 1890, Governor Miller approved an act of the legislature cutting down my salary five hundred dollars as the lottery men had decreed. This repudiation of a clear contract crippled some of my plans, particularly one for the conversion of the spacious attic of Merrifield Hall into a well-equipped gymnasium at my expense. The wrong was keenly felt; but I kept silence, trusting that, by "patient continuance in well doing" I should disarm hostility; and that the obnoxious law would be rescinded.

In this I was disappointed. My opposition was too recent, too pointed, and too effective to be forgotten or forgiven. I heard of two excuses; first, that the infant commonwealth was very poor; and, secondly, that the appropriation for the University was insufficient, and somebody must suffer. This last was Gov. Miller's plea, quite naturally put forth on the first of April!

One of North Dakota's most respected citizens, a member of the first board of trustees and one of the most useful of them all, Hon. James Twamley, correctly voiced the convictions of those upright men who best knew the "true inwardness of the facts." On the 8th of April he wrote to me, "I cannot see how Gov. Miller or the legislature can pass a law impairing the obligation of con-

tracts. I will write to him to-day on the matter." On the 13th of the month he wrote me again—

"I told the Governor if we had power to make that contract with you, that contract was binding on the State, and we were not repudiators. I told him _____ might cut a big swath in _____ County, but when he ran his head against the Constitution of the United States, he would strike a snag. I don't want to be a member of a Board that will be under control of such men."

In May each year the most important work of the faculty was the preparation of the annual catalog and determining the scope and contents of the curriculum. Here the question upon which there was most disagreement was as to the propriety of eliminating Greek. The majority (4 to 2) were against me. In faculty meeting May 23d I gave my reasons for desiring to retain it, and immediately thereafter submitted them to the trustees. I urged that we should adhere to it as in former years: (1) to avoid the charge and fact of vacillation, instability; (2) to demonstrate that even a single year of the study is a good preparation for common English; (3) as we are situated, by retaining it we avoid the multiplication of classes and subjects; (4) we thus keep our standard of scholarship high, make our institution attractive, and refute the charge that we are a high school masquerading as a college; (5) we continue able to transfer students to equal high standing elsewhere; (6) we attract desirable students; (7) the public have a right to expect it, some parents even demanding it; (8) we furnish a desirable qualification for admission to the highest professional schools; (9) for culture, and in its relation to the best literature and art and the finest civilization, there is no real equivalent for it. On the third of June the trustees notified us that they favored retaining Greek and including it in the published courses of study in the catalog.

At the opening of my fourth year in September, 1890, the faculty was strengthened by the addition of Lieut Roudiez. We were still under the necessity of facing and solving problems that seemed innumerable. There were 38 faculty meetings between September 26, 1890, and March 26, 1891. By act of the legislature during the preceding March a school of mines had been added to our curriculum, and we were fortunate in having Professor Babcock to begin its work. Professors Merrifield, Macnie, Woodworth, Estes, and Patten, would compare favorably with any selected five

in any college, and the instructors, both salaried and volunteers, were rendering really excellent service. The whole of eastern and middle North Dakota seemed eager to hear from the University, and president and professors were glad to fulfil appointments to speak at educational gatherings.

It may be proper to mention a movement which, had I foreseen the experiences of the next few years, would very likely have withdrawn me sooner from the University.

In March, 1889, The Pioneer Press of St. Paul and Minneapolis in its editorial columns surprised me by suggesting my name as that of a possible senator in the United States Congress. Soon thirty other newspapers in Minnesota, New York, Massachusetts, Connecticut, Illinois, Missouri, California, North Dakota, caught at the idea. They would have had me elected in a few days, had their wishes prevailed. But there are two things I never have sought: viz., office, and riches. Some of my friends were gratified. They saved up the newspaper notices, and thought that for their sakes I should enter the lists. I attached no importance to the movement, until a prominent gentleman, an entire stranger, in an eloquent speech in the legislature eulogized me and ended by formally nominating me for that high office. Immediately I was urged by letters and by telegraph to come to Bismarck and conduct a personal campaign. I judged it was time to put a stop to the business. This I did by publishing extensively the following card:—

“My position on the subject of the senatorship, having been misrepresented, I beg to state my attitude.

1. Of course I should like to be a senator; but as constituted and manipulated, the eager pursuit of so sacred and responsible an office by the only means likely to secure it, seems presumptive if not conclusive proof that the aspirant is not fit for it.

2. If it were tendered me in honorable fashion, without any other pledge than that I should faithfully, to the best of my ability, serve my state and my nation, I should gladly accept. But—

3. To get it I can engage in no scramble, no intrigue, no bargain, no fight; shall neglect no present duty, make no speeches, curry no favor, solicit no votes, pull no wires, promise no offices, pay no money, fling no mud, and tell no lies. I am not for sale.”

No room rent was ever paid at the University buildings, nor was any tuition fee paid by any student. Excellent board was furnished at three dollars a week, the two and a half dollars paid the preceding year having proved insufficient. January 7th, 1891, a prominent and influential citizen, apparently ignorant of the understanding between the trustees and Mrs. Sprague, endeavored, in his excessive loyalty to the state, to deprive her of a large portion of the "incidental fees" (paid by most of the students, amounting to \$5 each), and to turn it into the state treasury. He was in a position to know perfectly the conditions of the express contract, in which it was stipulated that the whole of those fees should be placed in my hands to aid in carrying on the boarding department and that I should not account for any of them. This being the third time that it had been sought to impair the obligation of financial contracts with me since I undertook the management of the University, I was led to do some thinking on the precariousness of my tenure of the office.

On the 24th of February, 1891, I tendered my resignation of the presidency. I had three reasons for resigning. The first was that I was overworked and needed rest; the second, that the winter climate had sometimes been too severe for the health of my nearest and dearest. The third and chief reason I have never stated.

Early in March, 1891, the board of trustees, being about to retire to make room for the new state board which was to be appointed, adopted unanimously the following resolutions:—

"Resolved, That we cannot sever our connections with the University without expressing our regret that the institution is about to lose the services of Prof. Homer B. Sprague as President.

"Resolved, That we desire hereby to express our hearty appreciation of his valuable services to the University during his incumbency, of his unselfish devotion to its advancement and greater usefulness, and our acknowledgment of the success that has attended his efforts.

"Resolved, That we accord to him a great measure of praise for the present high position which the University has attained, and are impressed with the belief that his connection with the Institution will be a bright page in its history for all time to come. We do hereby as a Board and individually tender Prof. Homer B. Sprague our heartfelt respect and esteem, and our sincerest wishes for his future health, happiness and prosperity.

"Resolved, That a copy of these resolutions be furnished Prof.

Sprague, and that they be spread in full upon the minutes of the Board."

In the middle of last June, after an absence of twenty-five years, I was so fortunate as to revisit the University. Never have I seen a greater or more surprising change. The rough campus seemed by contrast to have become almost a paradise. Instead of a stubble field of twenty acres, here were a hundred and twenty which had felt the touch of the landscape artist. In the midst were elegant walks, velvet-like lawns, flower beds, a fine fountain, a winding watery mirror, arching trees whose tops vied in height with the highest roofs, pleasing alternation of light and shade. Instead of the one solitary building which I found when I first came, and the two lonesome ones which I left, there were now thirteen, some of them magnificent.

In the distance on the once treeless uninhabited prairie, I could see, across the green fields, thrifty dwellings, each nestling in a sheltering grove.

The hundred elms, which the Hon. William Budge had set along the avenue between the University and the old Fair Grounds, and which I feared would not live a year, had grown very tall, and with others, nearer the city, had made the street very handsome. The stunted trees that once lined the streets had grown to stately heights, and Grand Forks, once so plain and humble, had become one of the most beautiful cities in America.

The University library when I first came had less than a thousand volumes; less than three thousand when I left. It now contains over 53,000. We had four professors and two instructors when I came. There are now 47 professors, 28 instructors and 15 special lecturers. In my first graduating class I think we awarded but 7 or 8 degrees. Last June the University awarded 110.

I have attended some 40 commencements, but none, I think, more creditable to any institution than this in June. I have witnessed many pageants in war and peace, but none finer or more instructive than the dramatic display at the lovely Bankside Theatre on the University campus the evenings of June 12th and 13th. Unique and original in its origin, of all which I have heard or read of, it seemed to me not only the most fitting to mark with splendor the conclusion of the Shakespeare Tercentenary Commemoration, but to be prophetic of still greater achievements in the centuries to come.

Vocational Training

CALVIN HENRY CROUCH,

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THE purpose of this article is to discuss certain phases of vocational training and to describe very briefly a vocational school which the writer visited some two years ago, hoping that the same may be of interest and perhaps suggest ideas to some who may be interested in such work.

The term vocational training is one of those popular terms which has been greatly over-worked in recent years. It has been used to cover such a great variety of educational work that it really means nothing definite unless accompanied with more or less explanation. The writer having served considerable time as an apprentice in a machine shop before going to college and, since graduation, having spent several years in the shops of engineering and manufacturing concerns, as well as having been connected for some years with a trade school which turned out skilled machinists, pattern-makers, carpenters, bricklayers, and allied tradesmen, has had excellent opportunities to study both the older and the more modern apprenticeship systems of manufacturing concerns and is well acquainted with the trade school plan of producing mechanics. Because of this experience, he has always taken a keen interest in vocational training when by that term is meant a training which trains for a specific vocation or for a line of industrial work requiring skill.

After all that has been said and written in favor of vocational training, one would naturally expect to find in our larger cities and communities, fully worked out, comprehensive plans for the proper training of the older boys and girls to become skilled workmen, so that by the time they are sixteen or eighteen years of age they would be able to take more or less responsible positions in the commercial or industrial life of the community. This should, it would seem, be a part of the educational programs of such communities, but apparently such is not the case. Still, many of our cities and smaller towns are attempting to adapt their schools to the needs of the communities. Bookkeeping, stenography, business law, domestic science, and education have been given prominent places in the curricula of the high schools, and in some of our agricultural communities agricultural high schools have been established or are being contemplated. But that is about as far toward vocational training

as most of our communities have gone. Manual training has been given a prominent place in many high schools, but the writer does not class manual training under the head of vocational training. He has no quarrel with those who advocate manual training as a general educational subject for he heartily approves of it for that purpose, but as usually taught it is altogether too superficial to be considered as vocational training.

Manual training has quite a different function to perform from that of vocational training. It has frequently been introduced to give an all-round development, to train the hands as well as the head, and to coordinate the two. This, the writer believes, should be its real function. In other instances it has been introduced hoping it would arouse the interest of certain classes of pupils in the product of their hands and thus be a means of stimulating their interest in other branches of school work and assist in keeping them in school longer than they would otherwise remain. As such an agent it is doubtless effective. In other cases, manual training has been introduced for no well-defined reason other than that it has been thought to be the popular thing to do. One community has not wished to be outdone by some other and has therefore introduced manual training, equipping its woodworking shops with the most expensive power tools and boasting that it had the finest equipment in the state and the best that money could buy. When this spirit prevails, it means that the community is loaded up with a large and needless expense which probably precludes the possibility of establishing other and more desirable courses and which will defeat the purpose for which manual training is usually introduced, i.e., the all-round development of the hands and head.

We frequently see woodworking shops of manual training schools equip with the latest types of power tools such as joiners, planers, circular and band saws which the students are allowed to use freely because by so doing they can do a job so much quicker and better than they could possibly do it if using only hand tools. If the object of manual training is to arouse the interest of the boys in such work, then there may be an excuse for such elaborate equipment, but if the object is to train the hands, the machines are not only needless but detrimental, for their use cannot give one the training he should get from using hand tools. A shop provided with workbenches, well supplied with hand tools, a grind stone, an excellent instructor, and a good supply of rough unsurfaced lumber will enable a school to give a most excellent course in manual training as far as woodworking is concerned. Some of the most

proficient boys in woodworking that have come under the writer's observation have come from schools which had no power tools but which did have excellent instructors.

The writer would not be understood as minimizing the value of manual training as a general educational subject and as an agent to help a boy find himself, for he values it highly as such an agent, but he would emphasize the importance of giving to those of our boys and girls who are not destined to go to more advanced schools such training as will equip them, by the time they are seventeen or eighteen years of age, to fill more or less important positions in the educational, commercial or industrial activities of the community of which they are a part. This should be a training which would give them a feeling of independence and cause them to have more self respect because of their ability to support themselves by means of skilled rather than by means of unskilled labor.

At present our children begin their school life at six years of age. Our high school graduates have spent approximately twelve years in school, and yet for what kind of a position in our industrial life are they prepared? Before they can fill any important position they must serve a long apprenticeship which would be eliminated or greatly reduced if their training in school had been such as to fit them for such positions. It may be argued that our boys at fourteen years of age, the age they enter high school, do not know what their vocation will be, but such is probably not the case with a very large proportion. They may not know the exact field in which they will labor, but many if not most know whether they intend to become skilled or unskilled workmen, business or professional men. The selection of a vocation by a boy is quite likely to be greatly influenced by that of his father. The son of a machinist is quite likely to become a machinist molder, carpenter or a closely allied mechanic unless he desires to become a professional, or business man. The prevailing industries of a community doubtless also exert a marked influence in determining the vocation of most youths of the community, and if such be the case it would seem that it would be wise for the schools to articulate more closely with the industrial activities of the community and cater to their needs.

Even tho a young man or woman should learn a trade and later decide to follow some other vocation or profession, the writer believes it would be far better for him or her, except in those cases where the student expects to go to an advanced school, to be prepared to earn a comfortable living as a trained accountant, or skilled workman, than to have taken a general elective course which would

allow wide latitude in the choice of studies and train for no specific community activity. While the elective subjects in such a course may have what are called cultural values, it is quite probable that the subjects one would study in preparing for a specific line of work would have equally high values as such.

We lament the fact that so many of our boys and girls drop out of the high schools or do not go beyond the grades. We think they show poor judgment and are often at a loss to account for this lack of appreciation of their opportunities. The writer may be mistaken, but he believes that the average boy at fourteen years of age is seriously thinking about his future and that he could usually be induced to continue in school if he felt that the training he would receive would have a direct bearing upon what would be his life work. He and his parents observe that the graduate from the high school has to serve as long an apprenticeship in becoming a skilled mechanic as tho he had never seen the inside of a high school and they naturally ask themselves the question, does it pay?

The writer believes that if the schools above the grades should give, in addition to the regular academic courses, courses which would train for specific vocations, many of our boys and girls would gladly avail themselves of their opportunity to continue in school instead of dropping out as at present at the completion of the grades or at the end of the first or second year of the high school course. He would not eliminate the present high-school course but he would supplement it with industrial or vocational work which would train pupils for specific lines. Even tho a girl should learn dressmaking and later decide to follow some other vocation, it is quite probable that later, in a home of her own, she would find the training she had received in dressmaking of inestimable value. The same may be said of the work in foods and cookery, for a knowledge of foods and of how properly to prepare them is a knowledge always useful and of greater value to the average girl than that gained from a study of most other subjects of the high-school curriculum. The only ones to be compared with it in value are hygiene, sanitation and such others as are of vital importance to the well being of the community.

The same may be said concerning the training a boy would receive in learning a trade or in becoming a bookkeeper or accountant. Even tho he should not follow his chosen vocation, the fact that he knew he could support himself and family by skill in at least one line of industry would cause him to have more self respect than if he had been trained for no place in particular and was de-

pendent upon his ability to do only unskilled work. The field open to him in which to earn a living would be greatly enlarged and he would be better able to secure that kind of employment which would be congenial to him or for which he might be best adapted because of his natural qualifications and special training.

The ability to do skilled work is said to create a love for work which is something to be fostered in youth. The ability of a girl to make her own dresses should give her much satisfaction and pride and would doubtless be the means of much saving. When one realizes the comparatively small amount of time and energy required to learn dressmaking and appreciates what it may mean in the future, he feels that every high-school girl should be required to take such a course. With such a training a woman could support herself and family should necessity require it for, under present conditions, there are few classes of laboring people more independent than the first class dressmaker. In many localities, if the services of a dressmaker are desired, one must make an appointment weeks ahead and, as for remuneration, the competent dressmaker in some localities makes as good or better wages than the average grade school teacher. When all girls shall have learned dressmaking, the demand for the dressmaker will be reduced but the time will never come when there will not be a strong demand for the competent one. Likewise the time will never come when there will not be a strong demand for competent cooks and housekeepers. The writer believes that a thoro knowledge of dressmaking, and of foods and cookery should be required of every high-school girl for it would not only enable her to make a dollar go farther but will make her a better mother and a more efficient homebuilder than would any other kind of training she could get from a high-school training.

Under present conditions our high-school graduates have spent twelve years in school and yet they are prepared to assume responsible positions in only a few of the community activities such as teaching, bookkeeping or office work. Fortunately many of our high schools have well developed commercial courses and offer special courses for the training of teachers. Such courses have received encouragement and support from educational boards and school officials, but educational work which would train one to become a skilled artisan has, in most communities, either thru ignorance or lack of appreciation, been considered by the school authorities as non-cultural, bread-and-butter courses—not of sufficient importance to be encouraged or supported as part of the educational plan of the community. Such work has been left to the industrial interests

to care for or to the patriotic impulse of some public spirited citizen to provide for by establishing and endowing trades schools. And yet this training is essential for the well being of every industrial community. Why courses which train one to become a bookkeeper, stenographer, or teacher are not as truly bread-and-butter courses as are those which train one to become a machinist, patternmaker, or bricklayer, is difficult to conceive, and why a community should spend large sums of money to train a small proportion of the youth for business pursuits and neglect the many who might become our skilled mechanics is equally difficult to understand except on the ground of precedent and the habit of caring for the favored few. It will perhaps be argued that even the larger cities cannot afford to maintain trades schools in which all of the trades common to the community can be taught, but that is no reason why none of them should be taught, especially those in which there is the greatest demand for skilled workmen.

Manufacturing conditions have greatly changed during the last quarter of a century. Twenty-five years ago it was the custom for manufacturing concerns of moderate size to offer apprenticeship courses. They would take a limited number of apprentices, teach them a trade or trades, and make all-around mechanics of them, but, with the development of our modern factory system, manufacturing conditions have so changed that the manufacturing concern which at present maintains even a semblance of the apprenticeship system so common a comparatively few years ago may be said to be the exception.

We live in an age of specialization. Factories are erected to manufacture specific lines of goods. Their managements and shop organizations are organized along modern lines, their shops are equipt to manufacture but few articles or lines of goods and to produce them in large quantities at a minimum cost, and this means specialization. Special machines are installed to perform specific operations. Frequently these machines have been so perfected that they automatically perform operations which formerly required much skill on the part of the operator. Indeed many of them have been so highly perfected that they are fully automatic and require only to be supplied with the necessary power and raw material and they will turn out a product in accordance with the most exacting standards. In the same way special men are employed to perform special operations. Frequently the processes of manufacture are divided into steps; one man or set of men perform one operation, another man or group of men another, and so on. In this way a man may

be kept continuously at one job performing perhaps only a very simple operation, but he becomes a specialist in that operation. It is not necessary, from the manufacturer's standpoint, that he be an all-around mechanic, capable of performing any or all of the operations for he has but the one task to perform. The result of this highly developed specialiation is that the relative number of highly skilled all-around mechanics is very much smaller than would be needed if one man were called upon to perform several or all of the operations as was frequently done in the older methods of manufacturing. An unskilled laborer can be taught to perform a simple operation so that in a short time he will be able to do it as well as the most skilled mechanic and, altho his skill will be limited to the one operation, he will turn out as much work as an all-around mechanic and do it for a much smaller wage. As a result of this method many manufacturing concerns have discontinued their apprenticeship systems so that at present it is difficult if not almost impossible for a young man to find an opportunity to learn the trade he most desires. The natural outcome of this policy was apparent from the first, to students of the problem, and to remedy the situation some of the larger concerns have found it necessary to re-establish apprenticeship systems so as to supply their own needs for skilled mechanics, but such concerns are mainly the larger ones and comparatively few.

The continued growth of this condition makes it more and more the duty of the community or state to make provision so that the young man who has the natural qualifications and wishes to become a bricklayer, machinist or carpenter, or the young lady who has the ability and wishes to become a dressmaker, tailoress or milliner should have an opportunity to become such, that they may be better able to find congenial employment and become more contented and efficient members of the community than if they were to depend upon their ability to do only unskilled labor.

A few communities and a limited number of cities have awakened to a realization of their opportunities and responsibilities in connection with this problem and have made a beginning by the establishment of trades schools. In some instances but a meagre beginning has been made while in others the trades schools have been launched on a large scale and give great promise.

The writer was greatly encouraged and inspired in the spring of 1914 when he had the pleasure of visiting the Boys Trades School of the city of Milwaukee. This city evidently believes that after one has spent twelve years in school he or she should be capable of earning a living by means of skilled rather than unskilled labor. The

writer was not surprized at the work he saw being done, for he was familiar with trade school work, but that which greatly interested him was the apparent enthusiasm and vigor with which the city had attacked the problem. At the time the writer visited this school he had no intention of securing material for an article or address but visited it simply to acquaint himself with what was being done in the line of vocational training in some of our large industrial cities. Had he had in mind the securing of such material he would have visited the Girls Trades School which would have doubtless been equally interesting.

The Boys Trades School of Milwaukee was established in 1906, while the Girls Trade School was established in 1909. They are parts of the city school system but are managed by a special Board of Directors. This Board of Directors is made up of people from various walks of life such as the manufacturer, the professional man, the merchant, and mechanic. The school officers report to the Board of Directors who in turn make recommendation to the Board of Education.

The Boys Trade School is situated not far from one of the business and manufacturing districts of Milwaukee so that its environment is not very different from that of many manufacturing plants. A large fire-proof building admirably adapted to the needs of the school was in 1914 in process of construction. Two wings had been completed and were occupied while the remainder was under construction.

To enter this school a boy must be 16 years of age. The course for the average boy is two years. Each course is well planned and well arranged requiring for graduation the completion of a definite series of exercises, or its equivalent. If it is desired that a machine be built, it is constructed by the boys and credit given for its equivalent in exercises. Altho it requires on the average two years to complete the course, should a boy complete the assigned list of exercises in less time he is graduated upon the completion of the same. Students may enter at any time. The working conditions are quite similar to those the boy will meet after graduation. They work eight hours per day, five and a half days per week and forty-nine weeks per year with the usual holidays so that the working conditions are quite similar to working conditions in the average manufacturing plant.

The trades taught in the Boys Trades School consist of the machinist, plumbers, patternmaking, carpentry, cabinet making, mechanical and architectural drafting, and eventually other courses

will doubtless be offered. The boy who plans to become a machinist or shop man, spends eight hours per week in mechanical drafting and in recitations in English, civics, and arithmetic, the remaining thirty-six hours are spent in the shop at his trade work; while the boy who plans to become a draftsman spends eight hours per week in the shops and in recitations in English, civics and arithmetic and the remaining thirty-six hours in drafting.

A night school is operated seven months per year from 7:30 to 9:30 for the benefit of those who work days but wish to improve their condition by fitting themselves for more responsible positions.

The product of the shops is utilized in various ways. For instance, wood turning lathes, grinders, and band saws are made in the machine shop, and according to reports much of the equipment of the manual training schools of Milwaukee is the product of her trades school. The quantity of product turned out is not the all-important factor for the machinery is built for instructional purposes, its utilization is of only secondary importance hence no outside help is employed and the boys do all the work which is apparently of a high grade. If an instructor finds that a student is not adapted to the course in which he enrolled the student is advised to change his course or leave the school. The result is, the graduates are skilled mechanics and after having had some experience on heavy work they should be the equal of or superior to many of the regular mechanics in the ordinary shop and should be able to handle the heaviest of work.

A brief description of the plumbing course will illustrate the methods employed in the school. This course, like all of the others, consists of a definite series of exercises. These exercises are all listed and the maximum time within which each must be made is also listed. To be accepted an exercise must not only be well done but it must have been made within a given time so that the result is both workmanship and speed. The grade a student earns on an exercise depends largely upon the amount of time he is able to save over the allotted time. After a student has completed all but the last exercise he is assigned a "house" in which to install the plumbing. The "house" is a portion of the shop fitted up into apartments or small flats. These flats have the studding, joists and rough flooring, the identical conditions a plumber meets when he installs the plumbing in a new house. In this house, or flat, the student installs a complete system of plumbing such as is usually found in a house. When completed it is subjected to the same tests

by the instructor as would be made by a city inspector and if found satisfactory the student is graduated.

Upon completing the courses at this school the graduates command nearly full journeymen's wages. According to statistics the average wage earned after being out eleven and a half months were as follows: Patternmakers 31.8c per hour, machinists 32.6c per hour, and the plumbers 53.2c per hour, which speaks well indeed for the work of the school.

The Girls Trades School was opened in 1909. It teaches dressmaking and millinery. The requirements for admission are that the student must be fourteen years of age. They attend seven hours per day, five days per week, eleven months per year. They spend twenty-one hours per week at their trade work and fourteen hours per week at their studies. Their probable wage one year after graduating is said to be \$2.00 per day which would indicate that the Milwaukee Girls Trades School is doing an excellent work.

It is the custom in the middle and western states of the United States for each state to support, in whole or in part, institutions of higher education which give not only general educational training but train men and women for the practise of law, medicine, engineering, teaching and other professions. If it is wise that the state support such institutions for the training of the professional man would it not be equally wise and proper for the state to support vocational schools or trades schools for the training of the artisans and skilled laborers for the industries of the state?

Every state has many small communities which cannot support a trade school but every community of any size needs its bricklayers, carpenters, machinists, dressmakers, milliners, etc. Would it, therefore, not seem wise to have trade schools established as parts of the state educational systems instead of leaving this training to be given by the various industrial interests. Much may be said in favor of the apprenticeship systems of many of the industrial concerns. An apprentice in the industrial plant receives a small wage while the student in the trade school does not, but it should be remembered that it requires much less time to secure a given training when one has a competent instructor over him at all times, as in a trade school, than it would require without a well organized system of instruction as in commercial shops where the instruction is given by whoever the apprentice may happen to be working with or in the commercial shop where the instruction is given by one who has other duties than that of instructing the apprentices.

There are, however, a few industrial concerns that employ in-

structors whose sole business it is to look after the apprentices, to see that they receive proper instruction and are given the proper variety of work so that they will continue to grow or improve thruout their course. Such concerns should, with a competent instructor, give an excellent training for they have the shop atmosphere and the variety of work needed. They maintain what is virtually a trade school tho under a different name. However, the up-to-date concerns offering such apprentice courses are few in number so we must look for some other means to train our skilled workmen, and as we cannot expect philanthropists to establish and maintain trade schools, it is incumbent upon the cities and state at large, to provide for this training, the same as they do for the general academic training in the high schools and the professional training given in the universities. This would mean that every city of moderate size would have some kind of a trade school or would offer vocational training in its high school, and the state at large would maintain, in part or in whole, trade shcools in which many trades would be taught.

It will doubtless be sometime before the public will realize the importance of vocational training but there are signs of an awakening to the realization that it is as much our duty to provide proper training for the many who are to become our skilled workmen as it is that we should provide training for those who are to become our teachers, business, or professional men.

It is to be hoped the day is not far distant when our schools will be so organized and managed as to supply the real educational needs of the community and when this is done the vocational or trades schools will be occupying positions of first importance in our public school system.

The Limitations of Science*

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THE suggestion contained in the title of this address—that Science has any assignable limitations—may at first thought almost convict one of heresy. For in the realm of intellect, what greater spectacle does the world afford, since the Reformation, than the rise and brilliant development of our knowledge of nature which has now attained such vast proportions?

One conversant with the history of natural science might almost be pardoned for enthusiastically maintaining that before the simple and powerful scientific method all obstacles to the advance of knowledge must sooner or later give way; that there is no part of the universe which will not ultimately yield its harvest of principles and laws to the victorious logic of induction.

But at this crisis in human affairs—a crisis which owes its magnitude and gravity to Science, and which marks the close of another epoch in the history of the world—it may not be out of place to consider again whether or not science has limitations, and in what realm, physical, biological, mental, or spiritual, those limitations are to be found.

If there is a region where phenomena can not be isolated, or where they appear without any assignable cause, no foundations are available for any superstructure. As we penetrate the undiscovered regions surrounding our knowledge we step from effect to precedent cause with an assured belief in the validity of the law of causality. It is possible, however, that when we have passed triumphantly from one outpost to another we may arrive at a set of phenomena to which it is impossible to assign causes—to which the law of causality does not apply.

In consideration of our general subject let us turn our attention to physical science and see if there are boundaries which may not be transgressed.

One of the most important problems—one whose age is now measured by milleniums—is the constitution of matter. The history of the solution of this fundamental problem is of the deepest interest. We may read the ancient rival speculations of Anaxagoras and Aristotle, of Democritus and Lucretius, who taught their disciples that

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matter was either continuous and infinitely divisible, or that matter is not indefinitely divisible, but that all substances are formed of indivisible particles or atoms which are eternal and unchangeable.

In modern times we have the quantitative atomic theory to which the name of Dalton is inseparably attached. Well do we remember how conclusive was the evidence from all branches of science that in this direction science had pushed its way to the limit and recognized atoms as the ultimate and smallest particles of matter. It is true that in some quarters an uneasy feeling was manifested that all was not well with the atomic theory. What constituted the difference between the elemental atoms? Why should they differ in weight and properties? Was there after all a fundamental stuff or protyle from which all atoms were made?

Such considerations as these, tho occasionally finding a resting place in the mind of the professor, rarely extended to the student, who reposed his science securely on the impregnable foundation of the atom.

What a difference have the discoveries of the last few years made in our knowledge of the atom! Under the skillful assaults of Sir Joseph Thompson, Sir William Crookes, Sir Ernest Rutherford, and others, the long indivisible atom was discovered to be a most complex structure of electrons, whose number and arrangement were the physical causes of the diverse chemical properties of the elements. Electricity, long suspected, was simultaneously found to be atomic in its structure and to be associated with the new ultimate particle in precise and mesurable proportions. Indeed, one scientist has gone so far as entirely to dispense with the particle of matter and leave its electric companion as the sole and ultimate entity—a conclusion which explains matter by explaining it away. Alexander the Great evaded the difficulty of untying the Gordian knot by cutting it; this last suggestion would meet the difficulty of the Gordian knot of matter by calmly denying its existence.

It is remarkable now with what ease the hitherto indivisible atom has been resolved into hundreds—1700 in the case of hydrogen—of electrons, which form systems as intricate and wonderful as the solar system itself.

Has science here reached a limit, as we now seem to be convinced, or is the electron in its turn capable of subdivision? One might advance much evidence for finality in this new theory of matter, such as the fact that electrons from all sources are alike. Nevertheless, it is conceivable that we may yet discover still smaller par-

ticles, and so bring the atomic theory into harmony with the celebrated zoölogical epigram:

Great fleas have smaller fleas
 Upon their backs to bite 'em;
 And small have lesser fleas,
 And so ad infinitum.

Tho the simple but powerful scientific method has given us such remarkable insight into the constitution of matter, yet the inconclusive nature of that method may be an intellectual embarrassment to us in trying to discover whether finality is now or may even be hoped to be reached.

Again, let us consider the lowest possible temperature that may be imagined. Our modern theory declares that the heat of a body is due to the energy of motion of its atoms. On this basis the familiar figure of 273° below zero centigrade has been computed as the temperature when the motion of the atoms ceases, and this has consequently been called the absolute zero of temperature. Is this, after all, the lowest conceivable temperature? I can scarcely think so; for when the weary atom or rather its center of force action, is at last enjoying its frigid rest, the electrons are still in vigorous and incessant motion. Would not an intelligent being of sub-atomic dimensions, escaping from the chilly inter-atomic spaces of such a substance as frozen helium, the coldest known substance, find warmth among the electrons within the confines of the atom itself?

We know that at the absolute zero the relative motion of the atoms ceases, and they are crowded as close together as possible, so that the volume of the substance reaches a minimum; but if the enormous energy of the electrons were then to be taken away, a further shrinkage in volume must result, accompanied by some other physical manifestation, such as a further lowering of temperature to the 'ultimate zero.'

Further, free electrons are now recognized in the atmosphere, ejected perhaps from the sun. Imagine a mass of these free electrons; would it not possess a temperature due to the motion of the several particles? When the electrons are in motion in the atom would the case be different, and would there not be a temperature of the atom resulting?

In problems such as these, tho no further advance may at present seem possible, it would be rash to conclude that science has yet reached any limitation.

In the consideration of many parts of physical science, we come inevitably to the consideration of space and of a possible medium

filling that space. To this medium is given the name of the ether. In times past there were many ethers: "ethers for planets to swim in, to constitute electric atmospheres and magnetic effluvia, to convey sensations from one part of our bodies to another and so on till all space had been filled three or four times over with ethers." At last a horror of ethers was raised in the minds of scientists. Now but one ether is postulated which must serve all purposes that require such a medium. In order to meet the demands made upon it, the ether must be endowed with properties so astonishing and seemingly contradictory, that the limits of credibility, if not of science, seem to be reached. If, however, we abandon the idea of an ether, then space itself must be endowed with such properties that will enable force and energy to be transmitted thru and by means of it. With prudent caution I refrain from attempting to settle off hand either of the two perennial problems—space and time—of the philosopher. Yet space from the standpoint of the physicist usually implies extension alone and its most conspicuous property is "emptiness."

Repelled by the extraordinary properties of the ether on the one hand, and bewildered by the difficulty of ascribing any properties at all to the "emptiness" or "nothingness" of space, one is indeed in a grave dilemma, and may sympathize with the unfortunate mathematical student who dreamed he had fallen under the sign of the square root and could not be extracted.

Difficulties of the most formidable character begin to crowd upon us when we contemplate such problems as the origin of matter, the origin of energy, and perhaps the origin of the ether. How came it that such forces as electric and magnetic exist? Is gravitation a property of matter or of the ether? Or what relation do these forces have to space if the ether does not exist?

Matter either was eternal in its duration or else it had a beginning, however remote that primal event may have been. If, as was the opinion of Herschel and Maxwell, the atoms bore the appearance of being manufactured articles, how much more is this the case when we know of their complex electronic structure! Then as matter is the abode of energy, and as the energy of the universe is tending to a state wherein it is evenly distributed thru all matter, so the principle of the dissipation of energy stands like a signpost on the highway of knowledge, pointing us to a distinct and unmistakable beginning of things. LaPlace's "principle of sufficient reason," "that a thing can not begin to be without a cause to produce it," brings us to the necessity of recognizing a first cause beyond which there is no other conceivable. The dogmatic assertion of some scientists

that matter always existed is simply a confession that here science has reached its limit.

Leaving the domain of physical science, we may glance briefly at one of the problems of biology—the origin of life. The solution of this extraordinarily important problem has engaged the attention of many of the most distinguished biologists, but so far with no results.

The latest discussion that I am aware of is the presidential address of Sir Edward Shaefer, delivered before the British Association for the Advancement of Science at Dundee. In this address an argument is made for the probability of living matter being produced from non-living by chemical processes. "Setting aside," says Sir Edward, "as devoid of scientific foundation, the idea of supernatural intervention in the first production of life, we are compelled to believe that living matter must have owed its origin to causes similar in character to those which have been instrumental in producing all other forms of matter in the universe; in other words to a process of evolution."

Now in this short statement there is much suggested. Instead of "setting aside as devoid of scientific foundation the idea of supernatural intervention in the first production of life," there is as yet, whatever the future may bring forth, no scientific foundation for any other beginning of life than supernatural intervention. It is an old principle that all life comes from life, and nothing yet is known that controverts that simple but pregnant statement. Further, Sir Edward casually implies that living matter is on the same plane with "all other forms of matter," instead of being transcendently different from them. Is it possible to consider Homer and Hydrogen, or Shakespeare and Sodium, or Newton and Nitrogen as natural phenomena of the same order of magnitude, or as differing from each other only in complexity of structure?

But Sir Edward goes on to discuss the undoubtedly great achievements of chemistry in producing by synthesis many organic compounds, and then proceeds to apply this idea to the production of what may be called 'synthetic life.' "The elements," continues the professor, "composing living substance are few in number. * * * The combination of these elements into a colloidal compound represents the chemical basis of life; and when the chemist succeeds in building up this compound it will without doubt be found to exhibit the phenomena which we are in the habit of associating with the term "life." * * * From any beginning of living material a primitive form of life would spread and would gradually

people the globe. The establishment of life being once effected, all forms of organization follow under the inevitable laws of evolution."

What is the significance of these ideas? Is life a combination of chemical and physical properties of a certain form of matter, much the same as hardness or malleability? The biologists have decided that there is in living matter no vital force; and physiologists are fond of asserting their science to be merely the physics and chemistry of the living organism. The science of physiology may indeed be so; perhaps it could not be a science unless that were so. Still between physiology and life itself a deep gulf is fixt, nor is this gulf passed over by denying the existence of a vital force; while the denial instead of solving the riddle of life, so far at least leaves it where it found it.

It is worthy of attention that Sir Edward Shaefer has considered a piece of living matter merely a chemical compound. Undoubtedly it is this, but far more. It is a heat engine of splendid efficiency, and one, moreover, that enjoys the remarkable power of self regulation and self perpetuation by reproduction. What would not the mechanical engineer give for such a device in the industrial world! The imagination of the inventor kindles at the idea of such a machine; one that would seek its own fuel, selecting that which is best for its welfare and then, in its prime, reproducing a new, equally perfect, or even an improved variety to take its place when the parent is worn out.

Worthy of special consideration is the last sentence of the quotation from Sir Edward's address, that "the establishment of life once effected, all forms of organization follow under the inevitable laws of evolution." Imagine the triumphant chemist to have produced at last the long awaited synthetic life. Far more than a piece of protoplasm it is that lies in its infancy before his gaze. Therein is contained a new population of the globe, the wonderfully varied forms of floral life, of delicate fragrance and exquisite beauty; the countless varieties of animal organisms, exhibiting forms of adaptation to their environment the most ingenious and the most complete; and under the blind forces of natural selection all tending thru multitudinous stages to one conscious and intelligible end. But more than this is wrapt up in the no longer mysterious protoplasm; a new race of intelligent beings dwells therein; a new Aristotle to lay the foundations of yet unimagined systems of logic and philosophy; a new Euclid to explain to the inhabitants of this three-dimensional world the profound vagueness of the Fourth Dimension; a new Babel to provide additional language options for vastly remote generations of

students; a new President and Faculty for the University of North Dakota, and a new speaker to address its convocation! The 'promise and potency' of that synthetic protoplasm bring thronging visions to the imagination, but I must resist temptation and hurry on.

If this is what the chemical synthesis of life means, and certainly all this is implied in the quoted address, I will venture the assertion that here science has reached its limit, and that the problem of the origin of life will baffle future generations of scientists as completely as it has those of the past. Here as in the analogous problem of the origin of matter we shall have to make our way thru the discarded speculations that lie about our path and assign life to that Creative Power, that Great First Cause, which Mr. Herbert Spencer, because he did not choose to know Him, had (shall I not say?) the effrontery to call unknowable and unknown.

Much discussion has gathered around the question of the "evidences of design" in the universe. There is a view held by many that the universe presents to us a grand series of phenomena tending necessarily to some sort of a conclusion, inevitable indeed, but purposeless; that our own globe viewed in the same light, presents nothing but the natural phenomena of a cooling sphere. From this standpoint everything is fixt and determined as a function, perhaps, of the falling temperature. The change from non-living to living matter, for instance, will occur as spontaneously and necessarily as that steam will condense into water and that water will freeze at certain pressures and temperatures; that after a time life in its turn will disappear causing everything on this planet "to be as tho it had never been."

From such a repulsive view of the world we turn with relief to discover evidences that a great purpose underlies the phenomena of the earth and the life which is so prominent a feature. It may be that many so-called "evidences" adduced in support of Paley's great argument may have to be replaced by others of a more fundamental nature. Nevertheless, the fact that the universe is intelligible to our finite minds is a powerful support to the belief in an intelligent Designer. Lord Kelvin was always greatly impressed by the argument from Design and frequently referred to it in letters and addresses. Let me give two quotations:

"But it does seem that the marvelous train of discovery * * * must lead to a stage of knowledge in which the laws of inorganic nature will be understood in this sense—that one will be known as essentially connected with all, and in which unity of plan, through

an inexhaustibly varied execution, will be recognized as a universally manifested result of creative wisdom."

"The relations of matter and life are infinitely too complex for the human mind to understand. Science brings us face to face with creative power in the beginning of life on this earth and its continuance."

The argument from design has received a somewhat sensational treatment in a popular work published a few years ago by Dr. Percival Lowell on "Mars as the Abode of Life." The opening sentences of this work depict the beginnings of the solar system as imagined by this eminent astronomer. "So far as thought may peer into the past the epic of our solar system began with a great catastrophe: two suns met; what had been, ceased; what was to be, arose. Fatal to both progenitors, the event dated a stupendous cosmic birth. It is more than likely that one or both of the colliding masses were dark bodies. * * * It is not to be supposed that the two rovers actually struck, the chances being against so head-on an encounter; but the effect was as disastrous; tides raised in each by the approach tore both to fragments."

It is to be noticed how large a part chance played in this primeval event, and how completely is ruled out any premeditated design in the origin of our system. Nor is it likely that we shall ever know how nearly we came to not being at all. A further interesting fact is found in this quotation, that such a rigid uniformitarian as Dr. Lowell has to start his uniformity with a catastrophe.

Elaborating his argument, Dr. Lowell then proceeds to evolve the planets, the earth as we know it, and particularly the life which is its most important feature. "Upon the fall of the temperature to the condensing point of water, occurred another event in the evolution of our planet, and one of great moment to us: Life arose. For with the formation of water, protoplasm first became possible, what might be called the life molecule then coming into existence. * * * There is now no more reason to doubt that plants grew out of chemical affinity than to doubt that stars did. Spontaneous generation is as certain as spontaneous variation, of which it is, in fact, only an expression. * * * From all we have learned of its constitution on the one hand, or of its distribution on the other, we know life to be as inevitable a phase of planetary evolution as is quartz or feldspar or nitrogenous soil." Gradually life outgrew the need of living in the water, its first home. I can not refrain from quoting Dr. Lowell's description of the next stage, tho it is really foreign to the purpose of this address.

"But at last a better habitat offered itself and was speedily appropriated. Weathering of the land and constantly changing chemic processes prepared the continents for organic use. Plants, as we have seen, at last found foothold and insects an abode. Then came the exodus from the sea." (This exodus too, you will observe, had its Moses.) "We may picture some adventurous fish, spurred blindly from within essaying the shore in preference to the main. Tentatively at first he must have ventured, as became such bold endeavor. Finding the littoral not inhospitable, the pioneer reported his exploit, and was followed by others whom mutation had specially endowed."

Since the imagination may be invoked, we may extend the description and further picture some piscine Shakespeare enthusiastically contemplating Dr. Lowell's anthropomorphic fish and exclaiming in panegyric rapture: "What a piece of work is fish! How noble in reason! how infinite in faculties! in form, and moving, how express and admirable! in action, how like a monkey! in apprehension, how like a man! the beauty of the world! the paragon of animals!"

In order to establish his thesis Dr. Lowell proceeds to describe the peculiar markings on Mars which resemble straight lines, and which converge at many points forming a complicated geometric network. Dr. Lowell considers that these lines are canals bordered by cultivated areas, and that the whole network is a gigantic irrigation system to bring water from the poles and distribute it over the arid plains of Mars.

Let us quote from Dr. Lowell's book; "But long before the catalogue of geometric curiosities had drawn to its close * * * it becomes apparent to anyone capable of weighing evidence that these things which so palpably imply artificiality on their face can not be natural products at all, but that the observer apparently stands confronted with the workings of an intelligence akin to and appealing to his own. What he is gazing on typifies not the outcome of natural forces of an elemental kind, but the artificial product of a mind directing it to a purposed and definite end.

"It would be interesting, doubtless, to learn how are bodied these inhabitants that analysis reaches out to touch. But body is the last thing we are likely to know of them. Of their mind as embodied in their works, we may learn much more, and after all, is not that the more pregnant knowledge of the two?"

"The laws of physics and the present knowledge of geology and biology, affected by what astronomy has to say of the former

subject, have conducted us * * * to the recognition of other intelligent life. We have carefully considered the circumstantial evidence in the case, and have lighted on one which thoroughly explains the evidence that observation offers. We are justified, therefore, in believing * * * that life at present inhabits the planet.

"Part and parcel of this information is the order of intelligence involved in the beings thus disclosed. Peculiarly impressive is the thought that life in another world should thus have made its presence known by its exercise of mind. That intelligence should thus mutely communicate its existence to us across the far stretches of space, itself remaining hid, appeals to all that is highest and most far reaching in man himself. More satisfactory than strange this; for in no other way could the habitation of the planet have been revealed. It simply shows again the supremacy of mind."

Is it not remarkable that an eminent astronomer like Dr. Lowell can see in the lines on Mars conclusive evidence of design, of mind, of the existence of intelligent beings, whether men, or cephalopods, or ants, or other animals according to whatever line of development the Martian environment happened to favor; and not see it in the solar system or in our own earth, with all its orderly processes, its exact and harmonious laws, its teeming living creatures of utility and beauty, its intelligent beings who consciously exercise their dominion over it all, contemplate their origin and destiny, exercise their reason and freedom of will, cultivate their intellectual life, and recognize a moral law which, incapable of being evolved, and resting only upon itself, elevates their thoughts to the sublime conception of a Supreme and Omnipotent God? Is it not remarkable that in all this Dr. Lowell sees no evidence of the operation of a designing mind, nothing but the merest chance?

Never do I remember seeing the ideas of chance and design thrown into such high relief in the same work, and both used for the solution of the same problem. A rational science, it would seem, leads us with sure steps to the recognition of design and of a Designing Mind presiding over the genesis and unfolding of the universe. If we deny this we must postulate an irrational chance, or else fall back on the dogma of the eternity of matter and of law, which is nothing but a despairing admission that science is incapable of formulating a rational belief as to the beginning of things.

In his extremely interesting Gifford Lectures on "Naturalism and Agnosticism" Professor Ward discusses and criticises a mechanical view of the world which was put forward a century ago by LaPlace, the great French mathematician and astronomer.

Let me quote the ideas of LaPlace: "We ought then to regard the present state of the universe as the effect of its antecedent state and as the cause of the state that is to follow. An intelligence, who for a given instant should be acquainted with all the forces by which nature is animated, and with the several positions of the things composing it, if further his intellect were vast enough to submit these data to analysis, would include in one and the same formula the movements of the largest bodies in the universe and those of the lightest atom. Nothing would be uncertain for him; the future as well as the past would be present to his eyes. The human mind in the perfection it has been able to give to astronomy affords a feeble outline of such an intelligence. Its discoveries in mechanics and in geometry, joined to that of universal gravitation, have brought it within reach of comprehending in the same analytical expressions the past and future states of the system of the world * * * all its efforts in the search for truth tend to approximate it without limit to the intelligence we have just imagined."

This imaginary intelligence of LaPlace's has inspired part of an address by Professor Du Bois-Raymond. "As the astronomer," he says, "has only to assign to the time in the lunar equations a certain negative value to determine whether as Pericles embarked for Epidaurus there was a solar eclipse visible at the Piræus, so the spirit imagined by LaPlace could tell us by due discussion of his world formula who the man with the iron mask was, or how the "President" came to be wrecked. As the astronomer foretells the day on which—years after—a comet shall reëmerge in the vault of heaven from the depths of cosmic space, so that spirit would read in his equations the day when the Greek cross shall glance again from the Mosque of St. Sophia, or England have burned her last bit of coal. Let him put $t = -\infty$ and there would be unveiled before him the mysterious beginning of all things. Or if he took t positive and increasing without limit, he would learn after what interval Carnot's Law will menace the universe with icy stillness. To such a spirit even the hairs of our head would all be numbered, and without his knowledge not a sparrow would fall to the ground."

This mechanical theory of nature is supposed to be attractive and satisfying to the mind of the scientist, and in order to give it the slightest probability LaPlace and his followers have found it necessary, as is obviously the case, to exclude human free will from the realm of fact. If free will is an illusion, then our actions are conditioned by forces outside ourselves as completely as the disposition of matter on the globe is attributable to the laws of mechanics.

Instead of the members of this audience, for instance, assembling here for whatever reasons may have influenced them, to test their powers of endurance possibly, they are here of necessity and for the same kind of necessity as the occurrence of lignite and granite in various parts of the state. To deny the freedom of the will is to make all human actions, good and bad alike, simply natural phenomena, and for example, would be equivalent to declaring that nobody is responsible for this hideous world war. Free will must be regarded as a fact or characteristic of the human being, even tho its operations may be regarded as miracles, as Lord Kelvin did not hesitate to say.

Here we find a region into which science will find it impossible to enter. It is a region, too, that is after all the most interesting and by far the most important; for the conditions established by the material world will terminate sooner or later for each of us; but the consequences of the freedom of the will, involving responsibility in its exercise, will follow us thru the unending future of our existence.

In the realms of the mind and spirit the difficulties inherent in the nature of the problems enormously increase. Science can weigh the brain but not the mind; the spirit refuses to betray itself to instruments of precision. Towards the former of these—mind—many even opposing attitudes have prevailed. To some the mind has meant everything; to others nothing. But what are we to say of thought which, to DesCartes, was the proof of self-existence? Is thought a form of matter? That is unthinkable. Is it a form or mode of motion? That is impossible.

“What is mind? no matter,

What is matter? never mind.”

The materialistic scientists seem to be possess of an uneasy fear in admitting the existence of anything but matter and motion. Hence the crude materialistic dictum “that the brain secretes thought as the liver secretes bile.” To the bulk of thinking humanity this bilious theory of thought—of which the quotation is an excellent example—and all that is implied by it, can never be anything but repellent. Matter is matter, and energy is energy; we may just as well and as logically go one step further and say that thought is thought. As energy is known to us in association with matter tho not identical with it, so thought is associated with both matter and energy without the least necessity of being identical with either. Religious belief leads us easily to the idea of thought entirely apart from material beings; tho many scientists would say that this is a

realm where nothing but speculation and hypothesis is to be found. While not in the least admitting any necessity for such an attitude, it yet serves to remind us that in this direction restrictions are imposed not only by the limitations of science, but also by the limitations of the human intellect.

There is a realm in which all are fundamentally interested which in recent years has received a new attention from the attempted investigations of certain scientists. The spirit world has long been left for the exercise of religious ideas and beliefs. Some have sought by scientific methods to rend asunder the veil of mystery so impenetrable to human curiosity. From being a subject to which only a solemn interest attaches, it is now exhibited to popular gaze by the discussions of many eminent men, notable among them being Sir Oliver Lodge, and by others of a manifestly uncritical and credulous nature. Many claims are made that the world invisible has been reached and communication with its spirit population established. One could feel more satisfaction if this realm had not been made the scene of so much trickery and deception, and if it did not in its nature lend itself so well to gross imposture. To brush such aside may indeed seem commendable and scientific; but even the most scrupulous and careful investigation appears to have brought nothing from the unseen but the most trivial and puerile communications, which lend to the invisible intelligences, if such are reached, neither importance nor dignity.

If, indeed, we may command the illustrious of the past, what might not be accomplished in elucidating so many problems of interest? What lover of Shakespeare would not gladly know how he really spelled his name, or the curious learn the identity of the author of the Letters of Junius? Then Livy might reproduce his lost books, and Horace inform us whether his ode to Fuscus is a hymn to virtue, or an enduring and elegant monument of delicate Roman humor. Sappho again might sing for us her burning songs of love. Manetho and Berosus, perhaps, might be invited to affirm how much of their histories of Egypt and Babylonia are based on sober fact. The numerous Isaiahs might declare why it took twenty-two of them to write their incomparable prophecy, when far humbler modern literary men can easily compose whole shelves of books and still enjoy abundant leisure to spend their royalties. Moses, too, might be requested to furnish an affidavit regarding the sources of the Pentateuch, and in turn be politely but pointedly informed that while we don't know yet how the world did originate, we are cock-sure of how it didn't.

As far as my humble judgment goes it will be far better for the human intellect to recognize its own limitations, and also the limitations of all methods of investigating the universe. There is a region which we must still associate, as it has ever been associated, with the spiritual faculty of our nature. In disregarding this we may easily arrest the unfolding of spiritual truth by the very means we adopt to hasten the process. Nor is it difficult to see that an intelligence far wiser than ours would for our own happiness and welfare intentionally interpose a barrier to curiosity as well as to detailed investigation.

The marvelous achievements of science in modern times may sometimes almost unbalance our judgment and lead us to believe all knowledge is possible to us by one method only of investigation. It is not without significance in human development that rich stores of truth were obtained by other than scientific means.

And in a distant day when sensational discoveries have ceased to excite us and men look calmly upon the universe, they will realize more clearly than we are able to do that all methods of discovery of truth are necessary, each in its own sphere; that they supplement each other, and that only in their combination shall we find harmoniously blended a full and consistent apprehension of the worlds of nature, mind, and spirit.

Some Reasons Why North Dakota Should Adopt the Uniform Sales Act.

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A. PLAN OF THIS ARTICLE

✓ THE purpose of this article is to recommend the Uniform Sales Act for adoption in North Dakota. As the Uniform Sales Act is a codification of the American common law on the subject of sales it seems appropriate, before dealing at large with the present defects in our law, to make a few preliminary remarks on the subject of codification, and to suggest why the Uniform Sales Act, as a piece of codification, accords well with our North Dakota legal system and history. After this preliminary explanation an examination is made of some of the shortcomings of our present North Dakota Law of Sales. Lastly follows the inquiry how these shortcomings may be mesurably remedied by the adoption of the Uniform Sales Act, and why the objections usually urged against its adoption are unsubstantial.

B. PRELIMINARY SURVEY OF CODIFICATION

Codification is the act or process of reducing all the law upon one or more general subjects to a code. It is a new, systematized statement of the law, enacted as one statute.¹

I. THE ANCIENT WORLD

A thousand years of legal development in Ancient Rome beginning with the twelve tables culminated in an epoch-making period of codification.² The most thoro work of codification which this period produced is that which bears the name of Justinian. Justinian's codification has stood the test of time, has preserved to the modern world the laws of ancient Rome, and has thus furnished to much of the modern world a large part of the foundation upon which its present day law rests.³ It is said to be a master-

1. From Anderson's Dictionary of Law. Also see Bouvier's Law Dictionary.

2. Hadley's Introduction to Roman Law, p. 1. For a systematic account of this development see Muirhead's Historical Introduction to the Private Law of Rome. For a shorter concise account see Sohm's Institutes of Roman Law, (Ledlie's translation) sections 9-22 incl.

3. Sohm's Institutes of Roman Law, sec. 22, sec. 28.

piece of legal achievement, whose superiority over the heterogeneous mass of law which preceded it is universally recognized.⁴

II. CONTINENTAL EUROPE

Further codification of the law has in more recent times taken place in Continental Europe. The old German Code goes back to Frederick the Great. The Code Napoleon⁵ framed a little over a hundred years ago has been widely followed in Europe outside of France, as well as where it originated, and forms the basis for the law of South America, Central America, Mexico, and Louisiana.⁶ In recent years the new German Code,⁷ the most thoro work of general codification that has yet appeared,⁸ was adopted in the German Empire and has become the basis for legislative codification in Russia, Switzerland, and Japan.⁹ It is apparent, therefore, that practically all the advanced nations of the world, the English-speaking excepted, live now under some form of codified law, the history of which goes back to Justinian's codification of the law of ancient Rome.

III. ANGLO-AMERICAN EXPERIENCE

1. **ARCHAIC CODES.** At the dawn of English political history we have some "laws" which were general enactments to sum up what had preceded, based on man's memory, custom, etc., but not on any records of either legislation or court proceedings.¹⁰ These old laws still exercise the antiquarian and the legal historian, but have long since become obsolete as rules of law by which to settle any controversy between litigants.

2. **UNSUCCESSFUL PROJECTS.** Apart from these ancient laws, based on mere oral tradition, which have now been antiquated for a thousand years, the Anglo-American system of law has never in its entirety been systematically codified. Instead of codified law we have had a heterogeneous body of law consisting of the common law, so-called, a mass of decided cases occurring in litigation, and the statute law, a mass of separate statutory enactments. There

4. See, for example, Jenks: Edward I, in *Select Essays in Anglo-American Legal History*, vol. 1, p. 160.

5. See Wright's *French Civil Code*.

6. Pound's *Outlines of Lectures on Jurisprudence* (1914).

7. See Wang's *German Civil Code*.

8. Ames' *Lectures on Legal History*, p. 368.

9. Pound's *Outlines of Lectures on Jurisprudence* (1914).

10. See Thorpe's *Ancient Law and Institutions of England: Schmid, Gesetze der Angelsachsen; Lieberman, Gesetze der Angelsachsen*. A convenient collection illustrating the character of these laws may be found in the earlier part of Stubb's *Select Charters*.

Also compare these laws with the archaic law of the German tribes, for which see the "*Leges Barbarorum*," and with archaic Irish Law, in the *Brehon Laws*.

have been accessible court records since the time of the "Year Books,"¹¹ but no systematic general codification has yet resulted. From the time of Henry VIII to our own day various projects for codification of the whole law have been undertaken,¹² but without the indispensable culmination in statutory enactment as law of the codes proposed.

3. **THE FIELD CODES.** The most important attempt to codify the whole law was made in the United States a little more than fifty years ago. The result was the Field Codes, drawn up by a little group of New York lawyers of which Mr. Field was the leading member, as a codification of the American common law. As a complete system these codes failed of legislative enactment in New York, as they did in most of the other states. One of them, the Code of Civil Procedure, has been widely adopted, while in four states, of which North Dakota was one,¹³ all the Field Codes were adopted in their entirety. The failure of the Field Codes to secure legislative enactment into law is attributed mainly to two causes, the crudeness of the codes themselves, and the conservatism of the bar trained under the English common law system toward any such innovation as codification of the whole law.¹⁴

4. **PRIVATE CODIFICATION.** In recent times we have had, both in England and in this country, some attempts by various individuals, frequently law professors, to state some branch of the law in definite propositions compiled in one book. Such is, for example, Wigmore's Pocket Code of Evidence.¹⁵ These attempts at codification by individuals, on their own responsibility, of course have not the binding force of statutory enactment. They serve the purpose, however, of reducing the law to definite statements as guides to courts and practitioners, and in a measure pave the way for more thorough codification.

5. **COMMISSIONERS ON UNIFORM STATE LAWS.** The most important practical steps in the direction of codification in recent years in the United States have been taken by the Commissioners on Uniform State Laws. They act for the American Bar Associa-

11. i.e., Since the time of Edward I. See Year Books edited by Horwood in the Rolls Series. See also, Reeves History of English Law, Pollock & Maitland's History of English Law.

12. Pound's Outlines of Lectures on Jurisprudence (1914). The project under Henry VIII, Bacon's Project (1614), Lord Westbury's plan (1860-1863).

13. See prefaces to *Compiled Laws*, 1913.

14. Williston, in *Pennsylvania Law Review*, vol. 63, p. 197.

15. Other examples may be given, as Wigmore's Summary of Torts, in Wigmore's Cases on Torts, vol. II. A similar tendency appears in the black letter propositions in the West Publishing Company's Hornbook series.

tion in drawing up codes for certain branches of the law, and recommending the draft codes to the legislatures of the various states for adoption. Some of the draft codes recommended by the Commissioners are the Negotiable Instruments Law, the Uniform Sales Act, the Partnership Act, the Warehouse Receipts Act, etc.¹⁶ So far the Negotiable Instruments Act has met with widest approval, having been adopted in most of the states.¹⁷ Some have only recently been agreed upon and recommended, while others are still in preparation.

The Uniform Sales Act, which it is the purpose of this article to recommend for adoption in North Dakota, is one of these Acts of partial codification originating with the Commissioners on Uniform State Laws. It was drawn up by a recognized authority on the law of Sales, Professor Samuel Williston of the Harvard Law School. His drafts were for several years submitted to elaborate examination and criticism, and several revisions were made. The final draft was agreed upon by the Commissioners in the year 1906 and recommended to the states for adoption.¹⁸ The Uniform Sales Act has, up to the present time, (1915) been adopted in fourteen American jurisdictions: Arizona, Connecticut, Illinois, Maryland, Massachusetts, Michigan, Nevada, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Wisconsin, and Alaska.¹⁹ It will be seen by the geographical location of most of these states, that the older and more highly developed commercial section of the country has, for the most part, already adopted the Uniform Sales Act, and that among the states which have adopted it is New York, whose court decisions are, with us, such persuasive precedents on account of our living under the Field Code which was drafted in New York.

C. WHY CODIFICATION ACCORDS WITH OUR NORTH DAKOTA LEGAL SYSTEM AND HISTORY

I. THE FIELD CODES THE BASIS OF OUR LAW AND PRACTISE.

In recommending the Uniform Sales Act for adoption in North Dakota the arguments for and against general codification need not be repeated. We are in North Dakota committed, so to speak, to

16. For a complete list of the Uniform Acts recommended, and the states where each has been adopted, see Report of American Bar Association for 1915, p. 913. The Commissioners on Uniform State Laws also publish copies of their proceedings containing this information together with much other valuable material. Copies may be obtained on application to the secretary, George B. Young, Newport, Vermont.

17. Report of American Bar Association for 1915, p. 913. Also see Brannon's Negotiable Instruments Law, or the fourth edition (1916) of Crawford's Negotiable Instruments Law.

18. See preface to Williston on Sales.

19. Report of American Bar Association for 1915, p. 913.

the principle of codification by having adopted the Field Codes under which we now live. Even tho it were granted, for the sake of argument, that uncodified law is a better system of law in application than codified law can continue to be, yet the desirability of revision of the codified law which we have must be conceded when thru such revision its improvement can be secured. Since territorial days we have lived under the Field Codes, and with these codes our legislature has in minor ways been constantly tinkering.²⁰ As lawyers we have become habitual code-readers on every legal question that arises, and as a people we have had more than the usual occasion for becoming imbued with the idea, however mistaken, that the answer to every disputed question of law is to be found in the statute book. Seldom indeed, in the trial court, does either lawyer or judge attempt to go much deeper into the question of law involved if they can find a specific code provision in point.²¹ The work of harmonizing and piecing out the code provisions is generally left to our State Supreme Court on appeal, and even that court often dismisses its discussion of the merits of a case by a curt reference to a code section as controlling.²² As a people, and as a legal profession, we are therefore far from being averse to codification. On the contrary, we are so thoroly imbued with it that in the face of a code provision we are rather prone to forget that law exists, not as an end in itself, but as a means to the end that justice may be administered.

II. MODIFICATIONS BY LEGISLATIVE ENACTMENT

As we are not averse to codification but rather emphatically committed in its favor, so we are committed to revisions of the codes we have if it seems that improvement can thereby be secured. It is axiomatic that a complete and final code is impossible.²³ As conditions change and development takes place in the world about us, to which the law is to be applied, new conclusions must be worked out from old principles, and, from time to time, these new developments must be worked into the Code by revisions.²⁴ Such, indeed, has been the practise so far as our legislative history is con-

20. See the frequent notations of amendments to Code sections in *Compiled Laws*, 1913, and the fequent recurrence of the terms, "An Act to amend" sections of the Code, in every volume of *Session Laws*.

21. Even the most casual attention, in observing the trial of cases in court, will sustain the accuracy of this remark.

22. A few instances of such dealing with a case are here cited at random.

7 N. D. 388, at p. 396; 75 N. W. 772

10 N. D. 120, at p. 122; 86 N. W. 226

10 N. D. 601; 88 N. W. 710

24 N. D. 152; 139 N. W. 104

23. Terry's *Leading Principles of Anglo-American Law*, sec. 609.

24. *Ibid.*

cerned. Never a legislative session passes that there is no amendment to our Codes,²⁵ nor are these amendments always confined to mere details. We early adopted the Negotiable Instruments Law,²⁶ the first and most defective piece of partial codification recommended by the Commissioners on Uniform State Laws.²⁷ Lately we adopted another of the Uniform Acts, the Family Desertion Act.²⁸ We have modified the presumption of fraud in case of retention of possession by the seller of personal property.²⁹ We have modified the provisions relating to warranty in the sale of goods.³⁰ Numerous other examples of legislative changes in our Code might be cited. Even a casual examination of our Code will reveal, thru its notation of references to legislative years, the frequency of such amendments and changes. At the last session of the legislature (1915) the amendments or repeals of Code sections numbered upward of three hundred and fifty, more than fifty of which consisted of minor changes in the Civil Code alone.³¹ These legislative changes which have been made in North Dakota's history, have from time to time been worked into the Code at each periodical revision.³² We have not as yet had, however, any attempt systematically to incorporate in the Code the development of law which has been going on at the same time thru judicial decision. Starting with a Code which is based upon the common law, derived from judicial decisions, we have made legislative changes in it and incorporated these changes in code revisions, but have in our code revisions ignored the corresponding development in the law which is derived from judicial decision.

So far as we have proceeded, therefore, in the development of our law, we are committed to the principle of codification, and we are committed to the propriety of legislative changes in our codified law whenever such changes can remedy defects and secure substantial improvement. Our Code revisions have, however, up to the present time, been partial only in their character, taking no account

25. See note 20.

26. Session Laws, 1899, ch. 113, now appearing in the Compiled Laws, 1913, as secs. 6886 et seq.

27. See the Ames-Brewster controversy, in Brannon's Negotiable Instruments Law.

28. Session Laws, 1911, ch. 123, now appearing in the Compiled Laws, 1913, as secs. 9595 et seq.

29. Session Laws, 1893, ch. 78. The effect now appears in the Compiled Laws, 1913, as section 7221.

30. Session Laws, 1913, ch. 218, now appearing in the Compiled Laws as secs. 5991-5993.

31. This enumeration for the last legislative session is derived from the sticker pamphlet issued by the Lawyers Cooperative Publishing Company for pasting in the margin opposite the appropriate sections in the statute book the numbers of the sections amended or repealed by the last legislature.

32. For illustrations, see notes 26-30.

of the progress which is made in the law thru the process of judicial decision. It is progress in this respect, made the country over, which the Sales Act embodies, which we grope after whenever disputed questions of law arise, and which needs only the legislative fiat to make it definitely a part of our Code system.

D. SOME PRESENT DEFECTS IN OUR NORTH DAKOTA LAW

Stronger reasons, however, than merely the advantage of embodying the law we have in a definite code suggest themselves for the adoption of the Uniform Sales Act. It is the purpose in this article to point out briefly two conspicuous defects in our law, and to indicate how these defects can be in some measure corrected by the Uniform Sales Act. These defects are: first, lack of uniformity with the law of other states; and second, lack of certainty as to what our own local law is.

I. LACK OF UNIFORMITY WITH THE LAW OF OTHER STATES

The first of these defects, lack of uniformity with the law of other states, is constantly leading to confusion, especially in commercial matters, as transactions on an increasingly large scale involve action in different states governed by divergent laws on the same subject matter. Thus, with a promissory note made in North Dakota, payable to a person living in Minnesota, and by him indorsed in Iowa or Chicago, etc., if the laws of each of the respective states are different in regard to these simple transactions relative to a single negotiable instrument, the greatest uncertainty and confusion as to rights of the different parties must result. To remedy this situation in regard to negotiable instruments, the Negotiable Instruments Law, the first and crudest of the Acts proposed by the Commissioners on Uniform State Laws, has been adopted in nearly all the states of the Union.³³ The lack of uniformity between the laws of different states in regard to other commercial transactions, notably in regard to sales, bills of lading, etc., is equally conspicuous, tho less progress has been made in curing the defect.³⁴ It is a matter of every-day occurrence that goods are bought in one state by parties living in another, and that goods are shipped from state to state. Without uniformity as to when delivery of possession is essential to a valid sale, as to what is good consideration to make a contract

33. Report of the American Bar Association, 1915, pp. 913, 914.

34. The report of the American Bar Association, 1915, at p. 914 shows that the Uniform Sales Act has so far been adopted in fourteen jurisdictions, as against forty-seven jurisdictions which have adopted the Negotiable Instruments Law.

binding for the sale of goods, as to what is necessary to be done to pass title, etc., such every-day transactions can be carried on only with the risk of financial loss and disappointment in litigation whenever anything occurs to upset the calculations of the parties or to cause disagreement between them over their bargain.

It is needless in this article to examine at length the evils caused by lack of uniformity between the different states in regard to their commercial law. Every recent report of the American Bar Association contains statements and arguments from the Commissioners on Uniform State Laws covering elaborately this phase of the question.³⁵ It is primarily to remedy this situation thruout the country as a whole that the Uniform Acts, including the Uniform Sales Act, have been proposed for adoption. The difficulties arising from lack of uniformity are present with us, as they are in other states. The Uniform Acts can succeed in overcoming them only so far as they are generally adopted by the different states. By adopting the Uniform Sales Act we therefore not only improve our own law in this respect, but contribute that much toward improving the law of every other state thruout the country.

II. LACK OF CERTAINTY

The second defect in our law with which this article is concerned, the lack of certainty as to what our own local law is, touches us even more closely than the lack of uniformity with the law of other states. It is a defect in which the law of North Dakota is very conspicuous. Every lawyer in active practise knows how difficult it often is to advise a client who comes to consult him. The lawyer's difficulty may be due of course to uncertainty as to what actually happened which caused the trouble. It is frequently due, however, to the impossibility of finding out what the rule of law is.

I. LACK OF CERTAINTY AS TO THE FACTS INVOLVED. Lack of certainty as to the facts in dispute between parties is of course a problem inseparable from litigation. Where two parties get into a controversy it often happens that they disagree as to what actually took place between them, that they disagree as to what words were spoken in their dealings with each other, that they disagree as to the quality of the goods supplied, etc. Where the parties disagree as to the facts, where there is no agreement as to what really happened, no lawyer can presume to be omniscient enough to foretell with exactness what the jury, on consideration of all the evidence,

35. See, for example, the Report for 1915, pp. 919-948, and the Report for 1914, pp. 1044-1089.

may find the facts to have been. No legislation, and no amount of litigation, can preclude occasional disagreement between parties as to what actually happens in their current transactions. Such disagreement will lead to litigation so long as neither will yield the whole point and parties are law-abiding enough to resort, not to brute force, but to the orderly process of law for the settlement of their controversies. Lack of certainty as to the facts is therefore inevitable in ordinary litigation.

2. **LACK OF CERTAINTY AS TO WHAT THE LAW IS.** Lack of certainty as to what the legal rule is, as distinguished from lack of certainty as to what are the facts involved, is a defect which can be mesurably remedied, but which, while it remains, produces quite as much expensive and unsatisfactory litigation as is produced by lack of certainty as to the facts. How often does not our Supreme Court preface its opinion, in deciding a case, with the remark that there is practically no dispute as to the facts involved?³⁶

a. *Causes.* The lack of certainty as to what our own local law is, is due mainly to two causes. First, the Code under which we live was a crude first attempt at general codification made by men who were too few and too busy with the duties of an active law practise to study with sufficient care and arrange and correlate effectively all the law they were called upon to codify. The Code, furthermore, was drawn up more than fifty years ago when the conditions under which business was done were very different from what they are now, and when many of the questions which now occur and recur had never arisen. Our Code, therefore, is not only a crude piece of codification,³⁷ but is also entirely silent on many vital questions of commercial importance.³⁸

The second cause for the lack of certainty in our local law is the meagerness of our own authoritatively binding decisions, in comparison with the immense array of conflicting precedents from other states, all of which are more or less persuasive but none of which are binding upon us as authorities. Our North Dakota Reports number only thirty volumes. The number of volumes of reports of decisions from other states, which are for us persuasive but not binding authorities, runs into thousands. Our line of local decisions

36. The following are a few cases cited at random as illustrations:

22 N. D. 435;	138 N. W. 988
30 N. D. 43;	151 N. W. 988
30 N. D. 112;	151 N. W. 879
30 N. D. 292;	152 N. W. 803
	153 N. W. 187

37. Williston, in *Pennsylvania Law Review*, vol. 63, p. 197.

38. See below. (c). Examples of uncertainty in our law.

goes back only about thirty-five years. The decisions in many other states go back a hundred years or more, and for the period before that, the English cases go back hundreds of years further still.³⁹ Our local decisions have decided relatively few questions in comparison with the number of questions that have arisen and been passed upon, taking the courts the country over. These decisions from other states, however, are often conflicting, while all are more or less persuasive as precedents. Without local decisions in point we are therefore in a conspicuously worse position, so far as certainty of the law is concerned, than many of the older states, each with its own long line of authoritative decisions settling its own local law.

b. *Illustration.* The difficulties produced in practise by the lack of certainty as to what the law is may be conveniently illustrated by a concrete example. A farmer orders a machine from a machine company, to be delivered a certain time later. Before the time for delivery something happens to cause him to change his mind. He notifies the company that he does not want the machine. The company, insisting upon its contract, ships the machine and claims the contract price. What are the rights of the parties?⁴⁰ If the company sues the farmer for breach of his contract it will recover damages for the breach, i.e., it will recover the difference between the contract price and what the company could obtain on a re-sale of the machine.⁴¹ This may be nothing at all, and is ordinarily likely not to be a great deal, for example, \$100. If the company is allowed to recover the full contract price it will foist the ownership of the machine upon the farmer without his consent, and will get, if the machine is an expensive one, several thousand dollars. At this stage the farmer consults a lawyer to find out whether he must take and pay for the machine or whether he need only pay such damage as results to the company from his refusal to take it. The lawyer looks up the Code and finds nothing decisive on the question of whether title can be cast upon a person without his consent to receive it. He next looks diligently thru his set of North Dakota Reports. The exact question has never with us been decided. He looks next at the authorities from other states for guidance. In a number of states, as in our own, the question has not been decided. It has been decided in a considerable number of states, but different

39. For a more elaborate description of this situation, with reference to the country at large, see Williston in *Pennsylvania Law Review*, vol. 63, p. 203.

40. This illustration is taken from 153 N. W. 137, a recent North Dakota case.

41. Mechem on Sales, sec. 1690.

states have decided it in different ways.⁴² Some have decided that if a person contracts to receive title, the title may thereafter be forced upon him without any further consent to receive it. Others have decided that a contract to buy goods, like any other contract, may be broken by either party, the party breaking it becoming liable to pay damages for the breach. Having exhausted the available material for finding out what the law is, what is the lawyer to tell his client? If he is thoroly candid he can only tell him that our law is yet undecided on his question, but that if the client cares to bear the expense of litigating the case till it can reach our Supreme Court his question may be decided. Still, which way it will be decided he can only guess.

c. *Examples of Uncertainty in our Law of Sales.* That the above illustration as to uncertainty in the law is not unique but typical, as applied to our law of Sales, may be demonstrated even by a casual examination of disputed questions in this branch of our law. Our law is uncertain as to whether property which is to come into existence in the future, as future crops, etc., can be sold before it comes into existence, however absurd such a question may superficially appear.⁴³ Our law is uncertain as to what rules are to be

42. Mechem on Sales, sec. 1694.

See also elaborate collection of authorities on each side of this question in Williston on Sales, secs. 563-66.

See also note to Williston's Cases on Sales, (2nd. ed.) p. 512.

43. The law of North Dakota as to what personal property may be sold, as distinguished from what may be contracted to be sold in the future, is, despite our Civil Code and the decisions of our Supreme Court from the beginning down to the present time, in as great confusion as in the usual common-law states. With us, as with them, there is no doubt that a person may, in general, sell that which he owns, that he cannot sell that which has ceased to exist, and that tho he can make a valid contract to sell that which belongs to another, he cannot presently sell it because he has as yet no title he can transfer. So far all authorities are in substantial accord, and the law of North Dakota is no exception. But when the question is raised whether a person may sell now, so as to transfer title, that which is not yet in existence, there is great confusion in the common-law authorities.

The North Dakota cases have arisen in regard to future crops, reaching a rule of thumb for the particular facts raised under croppers' contracts, followed in the later cases as a matter of authority, but without consistent reasoning in the different cases. The consequence is that no one can tell, outside the narrow facts in the cases decided, whether under our law future goods are to be regarded as presently transferable.

For authorities see the line of cases following in the wake of *Angell v. Egger*, 6 N. D. 391; 71 N. W. 547, holding that the crop belongs to the owner of the land, not to the renter, under the stereotyped form of croppers' contract. In the principal case the question is left open whether it is a case of an owner of land, with another working on the land as his servant, and therefore the crop belonging to the owner, or whether it is a case of landlord and tenant, but the crops which would belong to the tenant sold to the landlord by the original agreement before they come into existence. Since the principal case was decided the court has several times come to a similar conclusion, but without further defining its position. In the last case examined, 30 N. D. 275; 152 N. W. 684, the court leans toward the former view, that there is no lease at all, and therefore no question of sale involved. For other cases on this topic see,

9 N. D. 627;	84 N. W. 561	9 N. D. 224;	83 N. W. 238
10 N. D. 37;	84 N. W. 563	16 N. D. 323;	113 N. W. 609
16 N. D. 596;	114 N. W. 377	17 N. D. 173;	115 N. W. 667
18 N. D. 93;	118 N. W. 242	19 N. D. 787;	125 N. W. 304
20 N. D. 211;	126 N. W. 1011	21 N. D. 255	
27 N. D. 235;	145 N. W. 821	29 N. D. 180;	150 N. W. 881

applied for ascertaining whether parties intended to transfer title,⁴⁴ a question which is immensely important when unexpected things happen, since the parties themselves often do not consider the question of just when title is to pass. Our law is meager as to what is sufficient appropriation of the goods to pass title under a previous contract to sell.⁴⁵ Our law is uncertain as to the effect a C. O. D. provision has upon the time of the passing of title to the goods shipped.⁴⁷ Our law is uncertain as to whether the existence or cancellation of an already existing debt is good consideration for a transfer of title to goods⁴⁸ or bills of lading.⁴⁹ Our law is, or at

44. The Compiled Laws, sec. 5535, leaves the question at large, merely saying on this point, that the title passes whenever the parties agree upon a present transfer. We have no series of cases working out the question what the result must be when, as usually happens, parties do not think particularly about the question of just when the title is to pass. In such cases there will be great difficulty if, before they have entirely completed their transaction the goods are lost or destroyed, or greatly depreciate, etc., and the question immediately becomes acute, "whose loss?", which must depend on who was the owner at the time the loss occurred.

45. It is submitted that we have in North Dakota no peculiar rules as to what amounts to sufficient appropriation to pass title under a previous contract to sell. There are, however, few cases dealing with the subject in our local reports, and none, apparently, which consider the questions in regard to appropriation on which the common-law authorities are divided. We accept, for example, the rule that there is appropriation by delivery to the carrier. (Compiled Laws secs. 5968-9, and 15 N. D. 557; 108 N. W. 545), while we have no local authority on the question of how title is to be determined in case of piecemeal delivery, a question on which the common-law authorities do not all observe the same distinctions. On the general question, see Williston on Sales, sec. 277, and authorities cited.

47. That the American Common-law authorities on this question are much in conflict, see Williston on Sales, sec. 345, Mechem on Sales, sections 740, 793, 794, and notes, especially note to Mechem sec. 740, containing a considerable compilation of authorities. For some further interesting cases on the question, see 89 S. W. 1132 (Ky.) and 130 N. W. 268 (Ia.).

The question has been most elaborately litigated in cases of liquor shipments into dry territory. By the ordinary rule of law that title passes on delivery to the carrier, if the shipment is in accordance with the order, the title to the liquor passes when it is shipped by the seller in wet territory. What happens thereafter is then not a violation of the prohibition laws unless the liquor is resold, a fact often hard to prove. Such has been the holding in the majority of states where the question has been litigated, the courts thinking that there was no basis for inferring any other than the ordinary intent as to the passing of title from the mere fact that the goods were marked C. O. D. Such restriction as to delivery has been held to indicate merely an intent on the part of the seller to insist upon his seller's lien.

The importance of the question, from the standpoint of enforcement or evasion of the prohibition laws has been considerably diminished by the Federal Statute. (U. S. Compiled Statutes [1913] sec. 10409) which prohibits railway companies, express companies, etc., from collecting on or after delivery in case of liquor shipments over state lines, and makes violations of that prohibition subject to heavy fine. The Federal Statute, however, does not directly touch the question of title to the liquors in the course of such shipments.

48. For a concise and able discussion of this question under the common law authorities thruout the country, see Williston on Sales, sec. 620 and notes, citing authorities.

It is held by the weight of authority in this country that the existence or cancellation of a pre-existing debt is not good consideration for a transfer of title to goods, and that a purchaser under such circumstances not being a purchaser for value, is not protected, even though acting in good faith, against defects in his seller's title. It is submitted that this position taken by the weight of authority is erroneous and ought not to be followed, for the cancellation, at least, of the pre-existing debt, by extinguishing it, subjects the purchaser of the goods to a detriment he was not bound to bear. Furthermore, any revival of the old debt by operation of law if the purchaser loses the goods he received in exchange for it is no adequate relief, since the original debtor may be and frequently is now insolvent.

least was until very recently, uncertain as to whether, if a contract to sell has been made, the title can be forced upon a party without his consent instead of leaving him merely to pay damages for his breach of contract. It is doubtful whether we even yet have that broad question finally determined.⁵⁰ Our law is uncertain as to which party is to prevail where there is a bona fide transferee for value of an order bill of lading after an unpaid seller's notice to the railway company to stop the goods.⁵¹ Even in our law of warranty in sales, as to which the Code goes into considerable detail, there is much uncertainty, as, for example, on the question of whether a breach of warranty in a sale is a ground for rescission.⁵²

These examples of course cannot purport to be a complete enumeration of the matters in regard to which our law of sales is uncertain. They are enough, however, to indicate that in regard to many ordinary commercial transactions it is impossible to tell with any certainty, in advance of litigation on the particular point, what the rule of law actually is.

The condition of our present law of sales is therefore curiously expressed in the one word "uncertainty." The Code is silent on a great many important questions. Relatively few of these have yet been decided by our Supreme Court. On many of them the authorities from other states are in more or less conflict. Every such question with us therefore presents a problem on which no lawyer can satisfactorily advise his client in advance. To get it settled involves the painful, dilatory, expensive, and uncertain process of litigating every point and appealing it to our Supreme Court for final decision. This process touches but a single point at a time,

49. See Williston on Sales, par. 620, and authorities cited. In the case of the transfer of bills of lading or warehouse receipts to order there is a greater tendency among the authorities to hold a pre-existing debt to be good consideration than in the case of transfer of goods. See 110 Cal. 348; 92 Pac. 918; 53 Md. 612; 132 Mo. 492; 33 S. W. 521. The reason for the difference seems to be that since bills of lading are regarded as more in the nature of commercial paper, semi-negotiable, so to speak, courts are more willing to follow the analogy of negotiable instruments in this particular. That an antecedent debt is held to be value in the case of negotiable instruments, see sec. 25 of the Negotiable Instruments Law, found in Compiled Laws of North Dakota (1913) sec. 6910. See also, Brannon's Negotiable Instruments Law, pp. 32-35, and authorities cited.

50. See 153 N. W. 137, the latest North Dakota case which has dealt with the question.

51. On this question California has held that the transferee is to prevail. See 51 Cal. 345. This view, the correct on principle, is opposed by the weight of authority. See Williston on Sales, sec. 542; Mechem on Sales, sec. 1567; Burdick on Sales, p. 236, and authorities cited. The best discussion on principle is found in Williston sustaining the California case and taking issue with Burdick and Mechem who approve the weight of authority.

52. Compiled Laws (1913), sec. 5994, "The breach of a warranty entitles the buyer to rescind an agreement for sale, but not an executed sale, unless the warranty was intended to operate as a condition." How the proviso is to be applied in practice does not appear, nor is any positive light shed on that question by the reported cases. See 14 N. D. 419; 21 N. D. 575.

leaving the old uncertainty still prevailing as to which way our court will hold on all the other questions. This is our condition, too, while many of these questions have been variously dealt with by other courts, whose decisions, tho not always very helpful as precedents because too conflicting, have supplied the material embodied in definite rules found in the Uniform Sales Act.

d. *Certainty the Prime Requisite.* Lest it be thought that a fetish is here made of legal certainty, a few words must be said on the question whether certainty is preferable to growth and development in the law.

Activity and change is the law of life. Everything which is in process of development must contain some elements of uncertainty. Technical rules of law form no exception to this general law of life. When the law ceases to grow the law is dead.⁵³ Every legal rule must in course of time be subjected to a process of growth and development which may change the force of its application. Every legal rule, like every moral precept, must be subjected to a process of progressive interpretation.⁵⁴

On the other side, without some regularity in application there can be no rule of law at all. As has been aptly said, "Law is the quality of being uniform and regular in a series of events, whether in human or in external nature."⁵⁵ Constant change in the law produces so much uncertainty that the rule of law itself is apt to be lost. Law which is in the process of growth must necessarily be somewhat uncertain. Then, is our alternative the unpleasant one of growth with uncertainty or certainty with stagnation?

The solution of the problem thus presented is found in two directions. In the first place, we must determine the relative importance of growth or of certainty in any particular field to which the law is to be applied. There are parts of the law where it is important that growth should be easy, where the importance of a set rule is of minor consequence. Thus, what is reasonable force to use in expelling a trespasser may vary with circumstances and may change with the times. The determination in the particular case is of minor consequence as far as it affects the rights of other parties. So, speaking generally, tho it is impossible to make sharp distinctions here, the rules of law governing ordinary human conduct

53. Holmes' *The Common Law*, p. 36.

54. The most conspicuous illustration of this process as applied to definite legal rules is to be found in the Roman legal development under the Twelve Tables, which in theory remained unchanged for a thousand years. See Sohm, *Institutes of Roman Law*, Ledlie's Translation, sec. 12. See also Muirhead's *History of Roman Law*.

55. Wigmore, *Summary of the Principles of Torts*, sec. 2, in *Wigmore's Cases on Torts*, vol. II, Appendix A.

should be capable of ready development to fit the cases to which they have to be applied. On the other hand, there are some situations in which the importance of having a definite rule understood by the parties is far greater than the importance of change and growth in the particular rule adopted.⁵⁶ The conventional example of the law of the road affords a ready illustration. It is highly important, especially in this age of automobiles, that parties should know to which side to turn to avoid collision, but it is of little or no intrinsic importance whether the rule requires them to turn to the right or to the left. So, in the law of property, it is considered more important to preserve the rules as they are, which people may find out in order to adjust their dealings accordingly, than to make frequent changes to remedy particular cases of hardship, because the ultimate result of frequent changes in property law will be to shake titles and undermine the security of acquisitions, which will destroy the incentive to accumulation of property.⁵⁷

In which class of cases do commercial transactions fall? Do they call for ready growth and change in the rules of law, with consequent uncertainty, or do they call for certainty as the most important consideration? The answer must be in favor of certainty. Unless, for example, there were some assurance that the obligation to pay debts would continue to be recognized by the law, money would be lent only at extortionate rates, and development of the country's resources on the basis of conservative credit would be impossible. Unless there is certainty in the laws affecting commercial transactions, such as buying and selling, and the giving of credit, such transactions can be entered into only at the risk of disappointment and litigation. If the rules of law are certain, parties may find out in advance what they are and regulate their conduct accordingly. If the rules of law are settled, business can be done more effectively because done with greater security.⁵⁸ Even if no inquiry be made in advance, if the rules of law are settled, a controversy can usually be settled without litigation, or, at most, by a trial of the facts in the lower courts. Without reasonable certainty as to the rules of law governing their transactions parties can not go far in the ordinary present day commercial transactions at all.

56. The suggestion that rules of law applicable to conduct should be flexible for the sake of securing justice in administration, while rules of property should be rigid, for the sake of security of acquisitions, is derived from lectures by Professor Pound, now Dean of the Harvard Law School, in a course on Jurisprudence.

57. See, for example, John Stuart Mill, *Principles of Political Economy*, Book V, Cr. VIII, sec. 1.

58. See Mill, *Principles of Political Economy*, Book V, Chapter VIII, sec. 3.

The greater the certainty as to the rules of law the greater is the security with which business can be done,⁵⁹ and the greater is the opportunity for settling controversies without resorting to litigation.

The second answer to the alternative of growth with uncertainty or certainty with stagnation is found in the fact that even conventional rules, laws of property, and codified law, are themselves subject to a slow process of progressive interpretation,⁶⁰ and can even be changed by legislative fiat, like any other laws, if such change seems necessary. The alternative is not one between growth and stagnation, but merely a question of where the emphasis is to be placed, on ready change, or on such certainty as will enable business to be carried on with reasonable security.

The conclusion therefore is that as to commercial transactions, such as sales, the prevailing uncertainty of our law is not a boon indicative of healthy growth, but an evil hampering the conduct of business which has been tolerated because apparently inevitable. If this uncertainty is not inevitable but in a measure avoidable, thru the adoption of the Uniform Sales Act, we should all be willing, by adopting the Sales Act, to reduce uncertainty to certainty.

The inquiry follows how the adoption of the Uniform Sales Act would contribute to cure the evils of uncertainty and of lack of uniformity which have been here set forth.

[To be continued]

59. Adam Smith's *Wealth of Nations*, Book III, Chapter II.

60. See note 54 on the progressive interpretation under the Twelve Tables.

Law Reform in North Dakota*

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A froward retention of custom is as turbulent a thing as an innovation, and they that reverence too much old times are but a scorn to the new. Bacon's Essay, "Of Innovations," quoted in Broome's Legal Maxims.

NOW that the times that tried men's souls in the fight against the invisible government are over, the honest citizen will hear no more about laws and reforms. "A plague on both your houses," is his sentiment. If one be so bold as to assert that in matters of consequence to every man who has a contract to be drawn or a civil suit to be litigated, the laws of North Dakota are sadly out of joint with the times, he is apt to be asked to prove his assertion by resort to ordeal or trial by battle, rather than be invited to give a bill of particulars. Nevertheless, despite the unfavorable dramatic background, as it were, I am going to have the hardihood to call attention to what seems to me the need for thoroughgoing reform in the branches of the law governing business relations, property rights, and civil procedure.

It will perhaps be a mild surprise to lawyers and lay folk alike to be told that the need for law reform is greater in North Dakota than it is in almost any other state in the Union. Generally speaking, the problem of American law reform is a problem of reform of procedure, a simplification in the machinery of the administration of justice. It is only the uninformed both in and out of the profession, that regard the law as a body of hard and fast rules. As Justice Holmes of the United States Supreme Court, probably our greatest American jurist, said a few years ago in a characteristic passage:¹ "I thought it dangerously near a platitude to say a dozen years ago that the law might be regarded as a great anthropological document. * * * Any man who is interested in ideas needs only the suggestion that I have made to realize that the history of the law is the embryology of a most important set of ideas, and perhaps more than any other history tells the story of a race. * * * An argu-

* Thru the curtesy of the editor of the California Law Review the writer of this article has been permitted to make free use of the material in an article entitled "Law Reform in California," that appeared in Vol. III: 300-312 of that publication.

1. 1 Continental Legal History Series, pp. xlv-xlvi.

ment that would have prevailed in Plowden's time and perhaps would have raised a difficulty to be gotten rid of in Lord Ellenborough's, now would be answered with a smile." Indeed the flexibility of the common law, (and in the common law I include the principles of the equity jurisdiction), is such that while the courts necessarily lag a little behind the advanced thought of the country, the law is dynamic and adapts itself to changing conditions. "The law should follow business," said an eminent English judge.² This flexibility may be called the genius, as it is the grandeur, of Anglo-American law.^{2a} Occasionally, however, social and economic conditions change so rapidly that the courts are not able to keep apace. The old bottles will not hold the new wine. Legislation then becomes necessary to prevent maladjustment. We have recently had a striking illustration of this in the inappropriateness of the common-law rules of fellow servant and assumed risk to the conditions of modern industry. In England and many of the great states of the country, this vexing situation has been dealt with by well-considered legislation. But such situations are rare and unusual. So in most states few, if any, sound lawyers would advocate a general overhauling of that great body of rules of conduct enforced in the courts, which represents the crystallized judgment of the ages,—altho Maitland thought that the English law of real property was a century behind the German. Why is the situation different in North Dakota? Because some forty years ago the Territory of Dakota attempted to reduce the common law to definite form by adopting a so-called "civil code," which was halt and lame at the time, and by the march of events has become obsolescent.

A moment ago I suggested that the general problem of American law reform consisted in meeting a demand for the reform of

2. Bigelow, *Bills, Notes and Cheques*, 2nd ed. 'Law' then 'should follow business.' In these words the author quotes a serious remark made to him by the late Lord Bowen, in a conversation concerning the decision of the Court of Appeal in the great case of the *Mogul Steamship Co. v. McGregor* (1889), 23 Q. B. D. 598 (affirmed [1892] A. C. 25), in which his Lordship (then Lord Justice Bowen) had just delivered his well-known opinion. The words quoted, it is confidently believed, contain the very substance of sound legal theory.

2a. "If there is any virtue in the Common Law," says Sir Frederick Pollock, "whereby she stands for more than intellectual excellence in a special kind of learning, it is that Freedom is her sister, and in the spirit of Freedom her greatest work has ever been done. By that spirit our lady has emboldened her servants to speak the truth before kings, to restrain the tyranny of usurping license, and to carry her ideal of equal justice and ordered right into every quarter of the world. By the fire of that spirit our worship of her is touched and enlightened, and in its power, knowing that the service we render to her is freedom, we claim no inferior fellowship with our brethren of the other great faculties, the healers of the body and the comforters of the soul, the lovers of all that is highest in this world and beyond. There is no more arduous enterprise for lawful men, and none more noble than the perpetual quest of justice laid upon all of us who are pledged to serve our lady the Common Law." *The Genius of the Common Law*, 124-125.

procedure. This is by no means a universal problem, but it is a problem that North Dakota shares with most American states. In this respect North Dakota lags behind Kansas and Missouri, not to mention Connecticut and New Jersey. So much has been written in these last few years about reform of procedure, that he who runs may read. I shall accordingly dismiss this part of the subject summarily. England led the way about fifty years ago. The principle of the English legislation was that instead of enumerating rules to cover every situation that the draftsmen could foresee, which is the theory on which the North Dakota Code of Civil Procedure is framed, the statute should state only the general principles underlying the law of procedure, and the details and minutiae of practise should be left to be regulated by rules of court. Kansas has the distinction of being the first American state to adopt the English system. New Jersey has followed suit, as has Ohio in the Cleveland Municipal Court Act, and the United States Supreme Court in prescribing the New Rules in Equity for the Federal Courts. Professor Pound of Harvard University, an expert on law reform, has summarized the advantages of the English system over the "code practice" as it prevails in states like North Dakota, as follows:³

"(1) The exact workings of a detailed rule of practice cannot be anticipated and as change and adaptation to the exigencies of judicial administration are inevitable this change and adaptation should be left to the judges who are best qualified to determine what experience requires and how rules are actually operating.

(2) The opinion of the bar as to the working of a rule may be made much more effective where the details are to be settled by the judges through framing new rules or improving old ones than where the legislature must be applied to. The judges are necessarily better able to judge how far complaints are well founded, how far they represent the sentiment of the bar generally and not that of one or two disappointed practitioners, and they know better whose opinions are entitled to weight and whose not in matters of procedure.

(3) Experience has shown that small details of procedure, which sometimes are very irritating in their effects, do not interest the legislature so that it is almost impossible to correct them by enactment.

(4) In state legislation with respect to procedure it has

3. 76 Central Law Journal 211.

very often happened that details in which some member of the legislature has a personal interest are made the subject of enactment under circumstances where there is no real advantage to procedure.

(5) Above all, there ought to be a possibility of speedy adjustment of the details of procedure to the exigencies of administration. Only rules of court can bring this about."

Coming now to the consideration of the North Dakota Civil Code, let us first glance at its history. In the early part of the nineteenth century there lived in England a philosopher and polemist named Jeremy Bentham, who made terrific onslaughts upon the common law. He berated it as irrational and unscientific, and saw the remedy for all its alleged shortcomings in codification. Bentham was ignorant alike of the principles of historical criticism and legal philosophy, and was equally ready to draw a code gratis for the English crown, the President of the United States or the Gaekwar of Baroda. Bentham's ideas met with scant response among the hard-headed English lawyers, and he turned to the United States. First he offered President Madison to draw a code for the United States gratis, but Madison, being a good lawyer, would have nothing to do with the proposal. Bentham then made a similar offer to the Governor of Pennsylvania, which was submitted to the Pennsylvania legislature and rejected. He then address a circular letter to the governors of all the states, but without results. Finally in 1817 he wrote and distributed a pamphlet entitled "Jeremy Bentham, an Englishman, to the citizens of the several American United States" in which he made the most astounding claims for his proffered code. "Accept my services in the book of laws, my friends," he wrote, "and so long as the United States continue the United States, among you and your posterity, in every such accepting State, shall every man, if it so please its appointed legislators, find, for most purposes of consultation, his own lawyer; a lawyer, by whom he can neither be plundered or betrayed. Accept my services; no man of tolerably liberal education but shall, if he pleases, know more—and without effort—much more, than at the end of the longest course of the intenses effort is is possible for the ablest lawyer to know at present."

Bentham's propaganda had no immediate results, but the evil that he did lived after him. In the middle of the century there was a strong movement in the United States for codification along Benthamite lines. In 1849 the New York Constitution commanded the legislature to appoint commissioners to codify the law. The

next year an attempt was made to start off the new State of California as the first common law jurisdiction with a civil code. It failed, the committee appointed to look into the project reporting:⁴

"We know it to be a favorite theme of some men that the entire laws of a community, regulating every variety of business, and defining and providing the penalty for every grade of crime, may be and ought to be, reduced within the compass of a common sized spelling book—so that every man might become his own lawyer and judge—so that the farmer, the artisan, the merchant, with his *vade mecum* in his pocket at the plough, in the workshop, or in the counting-house, might be enabled, at a moment's warning, to open its leaves and point directly to the very page, section and line, which would elucidate the darkest case, solve the most abstruse legal problem, clearly define his rights, and prescribe the exact remedy for his wrongs. It is scarcely necessary to say that all such notions are but the chimeras of ignorance and folly, or the fancies of a spirit more reprehensible and more to be deprecated than ignorance and folly conjoined. * * * To undertake by statute or by code, to establish a just and accurate rule for every contingency of human avarice and of human passions, and for all the endless phases of varied life, is to essay a task which never yet was accomplished—a task which, until the Almighty shall change the nature and attributes of man must forever remain equally impracticable and absurd. In truth, all the provisions of constitutions, and statutes and codes are but pebbles on the sea shore—the vast ocean of legal science lies beyond."

About 1857 the New York Code Commission, made up of three lawyers in active practise, was created. The most prominent of the commissioners was David Dudley Field, a leader of the bar, but an avowed disciple of Bentham. The commissioners worked upon the draft of the proposed "civil code" intermittently for about eight years, when they reported to the legislature the convenient *vade mecum* that they claimed would dispense with law libraries, and for most purposes make a man his own lawyer. These specious claims appealed to the uncritical legislature, and the code was adopted. About that time the New York bar awoke to what had happened, and prevailed upon the governor to veto the law adopting the "civil code." The legislature was not able to override the governor's veto. Thus might have ended the first attempt to codify the common law in America, had not the Territory of Dakota, where

4. See 1 Cal. Rep., appendix.

distances were great and law books scarce, seized the opportunity and, in 1868, adopted the New York draft Civil Code verbatim. A few years later California adopted the same code with some changes, few of them very radical, except a number relating to the law of husband and wife, for which the Spanish law was largely drawn upon. Montana, also, has enacted a civil code, following very closely the New York draft. Broadly speaking, the New York draft Civil Code remains substantially unchanged, and is the basis of a great body of the private law of the States of California, Montana, South Dakota, and North Dakota.

What kind of a code was this New York draft Civil Code? Clearly its foundations were insecure. But may it not, like the image of Nebuchadnezzar, have had a gold head along with its feet of clay?

Several years ago I visited a session of the Judicial Committee of the Privy Council in London. It was as tiresome as only an English court of appeal could be. Being restless, but reluctant to leave, my eye wandered about the room, and I spied a copy of Pollock's Indian Contract Act within easy reach. Being unfamiliar with the book, I proceeded to read the preface. My attention was almost immediately arrested by the following:⁵

"Another source of unequal workmanship, and sometimes of positive error, is that the framers of the Indian Codes, and of the Contract Act in particular, were tempted to borrow a section here and a section there from *the draft Civil Code of New York, an inflection which the sounder lawyers of that state have been happily successful so far in averting from its citizens. This code is in our opinion, and we believe in that of most competent lawyers who have examined it, about the worst piece of codification ever produced.* It is constantly defective and inaccurate, both in apprehending the rules of law which it purports to define and in expressing the draftsman's more or less satisfactory understanding of them. The clauses on fraud and misrepresentation in contracts—which are rather worse, if anything, than the average badness of the whole—were most unfortunately adopted in the Indian Contract Act. Whenever this Act is revised *everything taken from Mr. Dudley Field's code should be struck out, and the sections carefully recast after independent examination of the best authorities.*"

(The Italics are mine.)

5. Pollock's Indian Contract Act, 3d ed., p. ix.

I might rest here, but I prefer to make my criticisms more pointed, altho in a popular article and with the limited space at my disposal, I cannot hope to do more than touch the high places. Let me first enumerate the counts in the indictment. They are: (1) The arrangement is defective; (2) No provision is made for growth; (3) The draftsmanship is bad; (4) The principles of the common law are often misapprehended.

Taking up these counts in the order given:

(1) *Arrangement*. About two years ago Professor Sherman of Yale University in an article on codification remarked:⁶

“Almost at the very outset of the nineteenth century revival of Roman Law study, Sheldon Amos published in 1873 his ‘English Code,’ in which he laid down the essential principle of English law codification, namely accurate classification—the rock on which the hopes of David Dudley Field and the movement toward codification started by him were wrecked. What a pity Field did not try to make a thorough use of Livingston’s magnificent work so full of accurate classification—the famous Louisiana Code!”

But what difference does it make whether the arrangement of the code is systematic or hap-hazard? To say nothing of leading to confusion in statement, defective arrangement makes it next to impossible to find many provisions of the code. There are not a few decisions of the Supreme Court of California on matters covered in the code which do not refer to the pertinent code provisions, and some of the decisions are at variance with the code. This of course means uncertainty, not to say confusion. It also means that in litigation important enough to go to the Supreme Court, attorneys on both sides, as well as the trial and appellate judges, have not found the controlling code provisions. More than that, it means that a lawyer, trying to pilot his client in advance of trouble, must occasionally have a haunting fear that he may have given counsel at variance with the law as laid down in the code. The results may be serious, but they are sometimes ludicrous. A lawyer friend told me a short time ago of a case before the Supreme Court of California some few years ago, in which counsel, upon having it suggested to him from the bench that there were decisions contrary to his contention, called attention to a plain provision of the code which had been overlooked in the decisions referred to. One of the justices is said to have replied: “What you say is true enough, but

6. Greenbag 460, at p. 461.

we have disregarded that provision so long, that if we were to follow it now titles would be disturbed." And this is the code that was going to make the law understandable to the layman without the luxury, or the infliction, of a lawyer.

(2) *No provision for growth.* As has already been suggested, the law is an "anthropological document." The law as it is today and as it was forty years ago are radically different. It is perhaps not too much to say that the methods and researches of Sir Henry Maine, Professor Maitland, Sir Frederick Pollock, Professor Dicey and Mr. Justice Stephen, in England, and of Mr. Justice Holmes, Professor Langdell, Professor Ames, Professor Thayer, Professor Wigmore, and Professor Pound, in this country, have almost revolutionized legal thinking. Whole topics have grown up that were almost unknown forty years ago. A good illustration is found in the law of what is now called "quasi contract," the cardinal principle of which was laid down by the great Lord Mansfield about a century and a half ago, as being the duty to account for money or property that in equity and good conscience belongs to another. This topic, altho it had been developed by the Roman jurists centuries ago, and was systematically covered in the Code Napoleon, lay fallow in our law until about thirty years ago, when it came under the fructifying influence of Professor Ames and his disciple, Professor Keener. It has recently been re-expounded in an able treatise by Professor Woodward, of Stanford University. What says the Civil Code of North Dakota, as amended up to 1915 upon the subject of quasi contract? It is hard to know, but this much is certain, the code does not attempt to give a systematic statement of that branch of the law. There are, however, two sections attempting to generalize on the subject,⁷ which have, apparently, never been discovered by the bar or the courts of review of North Dakota, or of the states of California, Montana, and South Dakota, which have the same code provisions. In forty years these sections of the civil codes of four states have, it seems, not been cited once in any court of review! I might add that I know that these sections deal with quasi contract because the draftsmen of the draft New York Civil Code from which they are taken *verbatim* say so by

7. N. D. Civ. Code, §§ 5390-5391. See note New York draft Civil Code, (1865) p. 266. Compare California Code provisions with provisions of Indian Contract Act, §§ 68-70; Jenks' Digest English Civil Law, §§ 707-721; French Civil Code, Wright's Eng. translation, §§ 1870-1381; Louisiana Civil Code, §§ 2292-2314; German Civil Code, Wang's English translation, §§ 812-822; Institutes of Justinian, Moyle's translation, Title XXVII; see also Sohm's Institutes of Roman Law, Ledlie's English translation, 2nd ed., pp. 423-431.

indirection in notes appended to the sections.⁸ Otherwise I am not at all sure that any uninitiated person could fathom their purport.

It might be suggested with some warmth by worshippers at the shrine of the god of things as they are, "How do you expect codifiers to look forty years ahead of the times?" Frankly, I do not; but is that the end of the matter? By no means. The real suggestion lies in this, that the code should not be deemed the final word of wisdom, but should contemplate, and make provision for growth. This can be done by establishing a permanent commission of lawyers to report needed changes in the code to the legislature at each session. The French did this over a century ago when they adopted the Code Napoleon. Can we not, with profit, establish such a commission?

(3) *Draftsmanship defective.* If Macaulay's justly celebrated schoolboy had worked in a law office for six months he probably would have been well aware that only the bungling amateur and the testatrix who draws her own will, enumerate in a contract or will when a matter can be covered in general terms. Why? Because the enumeration may not be sufficiently extensive. Courts have acted upon this principle since time when the memory of man runneth not to the contrary. For example, courts of equity have refused to define fraud for fear that some crafty scoundrel might devise a new species of fraud and circumvent the definition. The "civil code" constantly violates this principle. There are other defects in draftsmanship; but I must hurry on to the next point.

(4) *Misapprehends principles of common law.* When the New York legislature created the Code Commission, it enjoined the commissioners to codify the common law with such modifications as occurred to them. Either consciously or unconsciously, the commissioners observed the second part of this injunction more religiously than the first. Indeed in many places they did not follow the then prevailing rule of law or any other authoritative statement of the law, and we have slavishly accepted their work. Take for example the rule against restraint of trade. That rule has recently been the subject of exhaustive examination and is fresh in the minds of most of us. It will be recalled that in medieval times the rule was one of absolute prohibition, because the guild system prevailed, and under it, if a man restrained himself by contract from carrying on his business he would probably deprive himself of the means of livelihood, to the injury of himself, his family, and

8. New York draft Civil Code (1865), p. 266.

the state. Later when conditions of trade became free; a merchant selling his store in London might restrain himself from carrying on his trade in London but not thruout the kingdom. Why? Because, in the quaint language of the early eighteenth century, if one engages in business in London, what booteth it him that his vendor carry on the same trade in Newcastle? At the present time, inasmuch as business has become national and international in scope, the restraint may extend to the whole world if it is necessary to the protection of the buyer and does not run counter to the public policy aimed against monopolies. This latter application of the rule has been definitely established since the New York draft Civil Code was drawn. The same principle, however, runs thru the cases in the various stages of development, namely, that if the restraint is not against the public interest, it is valid to the extent that it is necessary. What say the New York draft Civil Code of 1865, and the *North Dakota* Civil Code as amended to 1915? They declare that the *restraint must be confined within a specified county*. Apropos of this rule, the New York commissioners piously observed:⁹

"Contracts in restraint of trade have been allowed by modern decisions to a very dangerous extent. * * * In *Whittaker v. Howe* (3 Beav. 387), a contract not to practice law anywhere in England, was specifically enforced. Such a contract manifestly tends to enforce idleness, and deprives the state of the services of its citizens."

And these views have been transmuted into the law of North Dakota. Is not this like harking back to David's sling?

I venture to believe that almost any competent lawyer who takes the trouble to look into the matter will agree with me that our civil code is fatally defective, both in form and content.¹⁰ What

9. New York draft Civil Code (1865), p. 255, § 833.

10. I take the liberty of suggesting that there is no critique of the civil code to which to refer my learned readers. Those caring for further examples of the inadequacy of the code may look at Sir Frederick Pollock's *Indian Contract Act*, 3d ed., and the following articles in the *California Law Review*: The Need of Remedial Legislation in California Law of Trusts and Perpetuities, by Prof. W. N. Hohfeld, written before recent amendments, 1 Cal. Law Rev. 305; The Law Merchant and California Decisions, by Prof. A. M. Kidd, 2 Cal. Law Rev. 377; and Mutual Assent in Contract under the Civil Code of California, by the present writer, 2 Cal. Law. Rev. 345. Further examples of decisions inconsistent with plain provisions of the code may be found in an article, Contract Distinguished from Quasi Contract, by the present writer, 2 Cal. Law Rev. 177. See, also, a series of articles by the late Professor Pomeroy in the old West Court Reporter.

"The student who should approach his study of law thru the Civil Code would wholly fail to grasp the fundamental features of our system. Take, for example, the matter of water rights, a field of the utmost importance. He would find no trace in the Code of the doctrine of riparian rights; the information he would gain as to the doctrine of appropriation would be almost negligible, and for the most part erroneous. He would find no sections dealing with percolating or surface waters. In short, if he would learn anything substantial concerning our system of

is the remedy? Two courses are open: the repeal of the civil code and the return to the common law, or a new code. Powerful arguments might be suggested in favor of the first course, but as a practical matter it is too much to suppose that a generation of lawyers who have grown up under the code will permit its abolition. The force of inertia is too great.

If we are to have a new code, on what principle should it be drawn? Without going into detail, which is obviously impossible here, I might suggest that if the code is going to constitute a working system it must confine itself to the statement of principles, and not try to prescribe rules for every situation that may arise in the varied relations of life. Such is the theory on which the new German and Swiss codes were drafted. If the new code is to be dynamic and not static, it should also make provision for a body of experts to keep it up to date, as is done in France.

By whom should such a code be drafted? It needs no great acumen to perceive that no three or four active practitioners, regardless of their attainments, are equal to the task of reducing the whole body of private law to systematic statement. A code prepared as our present code was prepared is doomed to failure. Even a comparatively small branch of the law cannot be successfully codified by a small committee of lawyers. Some years ago a sub-committee of the Commissioners of Uniform Legislation drafted a proposed Uniform Negotiable Instruments Law, which has been adopted in nearly all the states including North Dakota. This law has not only been a flat failure, but it has also been a source of confusion. On the other hand, a very satisfactory negotiable instruments law has been enacted in England, but it was the result of the joint labors of one of the highest authorities on the subject working with a select committee of merchants, bankers, lawyers, and law lords. When the Commissioners of Uniform Legislation came to

water law, he would be obliged to go to the law reports. That branch of the law is of necessity judge-made, for the legislature has not acted upon the subject.

"But not only have our courts been obliged by the process of judicial law-making to supply the omissions of the legislature, they have also been obliged, in the interests of justice, to construe sections of the code in a manner which may be called spurious interpretation, but which so long as the true principles of legislation are neglected by our legislatures, will remain a continuing necessity. For example, the Civil Code not only enumerates the cases in which covenants run with the land, but provides in section 1461, that 'the only covenants which run with the land are those specified in this title.' Yet the law of California recognizes the doctrines of equity with respect to the running of covenants, and the courts enjoin breaches by assignees of the land of covenants not among those specified in the title. In fact, the whole matter of equity is practically unaffected by the code, although it purports to state the entire law." Professor O. K. McMurray in *Changing Conceptions of Law*, California Law Review, Vol. III, p. 451.

prepare the Uniform Sales Law, they profited by English experience and engaged as draftsman Professor Samuel Williston of Harvard University, one of the foremost authorities on the law of sales. Professor Williston made a provisional draft, which was submitted to many lawyers, discust in committee, and re-drawn several times before it was finally adopted. If such care is necessary in codifying comparatively small portions of the law, how much more so is it in case of general codification?

The greatest code the world has ever seen was adopted in Germany in 1896 to take effect in 1900. The Germans had a problem so difficult, due to the many varieties of law in the empire,—Roman, Canon, Germanic, Danish, French, as well as Austrian, and Saxon codes, and what not,—that in comparison our problem seems simplicity itself. The Germans set themselves to their task with the system and thoroness that characterize all public work in that “nation of damned professors.” First a committee of five prominent, practical jurists was constituted in 1873 to plan the work. Next, a committee of eleven of the leading university professors of law and judges was appointed to prepare a provisional draft. The actual work of draftsmanship was assigned to five members of the committee, who worked individually on the branches severally assigned to them for seven years. Then the committee came together and prepared several drafts, which they reported, together with arguments pro and con. These drafts and arguments were printed broadcast, and subjected to the severest professional criticism for several years. A new committee of twenty-two was thereupon appointed, that re-drafted the proposed code in the light of all the criticism and discussion. After twenty-three years of painstaking labor by the finest legal minds in the empire, the civil code was completed,—and it is a little book that any one may easily carry around in his coat pocket.

I am far from suggesting that the drafting of a new civil code that would meet the needs of North Dakota would involve anything like the labor expended on the German Civil Code. On the other hand it must not be forgotten, to quote a learned judge of the Pennsylvania Supreme Court, that “Laws seem to be born full grown about as often as men are.” If I were asked by a council of elder statesmen to sketch a *modus operandi* for the preparation of a new civil code, I should submit something like this: Let the subject of revision be discust as widely as possible for the next two years. Let the next legislature create a Code Commission with a life of about four years, composed of judges, law professors, and lawyers

in practise. Let the commission be instructed to plan the work, and then engage the best expert talent available to draft the various titles,—men like Professor Williston of Harvard for Contracts; Professor Mechen of Chicago for Agency; and Professor Woodward of Stanford for Quasi Contracts,—if they could be secured. Let the commission be further instructed to then engage the best draftsmen to be had to co-ordinate the various titles and work them into an articulate whole. Let about three years be given to this work. After the draft is prepared, let it be published with explanatory notes and distributed broadcast among the members of the bar, the business community, and the teachers of law. Invite the most searching criticisms. In the light of these, prepare a final draft for submission to the legislature of the following year, that is, six years hence. Let the legislature confine its changes to matters of policy, and leave the details alone. Let the code then be gone over again by the draftsmen, and have it take effect a year later. Then provide for keeping it abreast of the times by creating a permanent commission—with a changing membership—to report biennially to the legislature on needed changes. If this plan were followed the code produced would not, of course, be perfect; but what human institution is perfect?

As a last word let me assure the learned reader that I am not so innocent as to imagine that within the next few years the people of North Dakota or the lawyers of North Dakota are going to take steps to set their house in order. I must confess to sharing the rather cynical view of an eminent jurist who once observed that there is little hope of law reform to be expected either from laymen or lawyers, because “those who make the shoe do not feel its pinch, and those who feel its pinch do not know how shoes are made.”

Book Reviews

ANGLO-AMERICAN ISTHMIAN DIPLOMACY, 1815-1915: MARY WILHELMINE WILLIAMS, Assistant Professor of History, Goucher College. American Historical Association, Washington, D. C. The Lord Baltimore Press, Baltimore, Md., 1916. XII+356 pp.

This work was awarded the Justin Winsor prize in American History for 1914. It is a timely piece of investigation in view of the increased importance of the Caribbean Sea within the last decade. The author has succeeded thruout a very laborious research in bringing clearly before us the salient features of a century-long struggle between England and the United States over some disputed questions in Central American diplomacy. The significance of these tedious diplomatic intricacies is set forth in easy narrative style that enables the reader readily to avail himself of the voluminous sources used in preparing the work. The author has chosen to interpret the various diplomatic moves and changes of policy in terms of national or sectional feeling. Thus England's changing colonial policy is seen to be the outcome of a complex of forces more or less intricately involving European politics. For the United States the connection is still more elaborately worked out and the various stages in the diplomatic game are linked up with the particular contemporaneous event or political exigency that served as a chief cause or contributed to precipitate the crisis.

A most unexpected result of the study is the complete demonstration it affords of the nature of the process by which England has built up her colonial empire and United States has acquired her extensive possessions. In each case it was precisely that leisurely, unsystematic, illogical development to be expected of such nations whose people were in the midst of a national evolution toward democracy. No Englishman planned out in advance the magnificent proportions of her 19th century empire. So, similarly, no statesman in this country foresaw in 1800 what territory we should possess in another century. In the singularly tortuous diplomacy outlined in this work it is easy to find the key to the utter absence of a consistent policy. In the life processes of a great nation it is not often possible to forecast the outcome of a decade of growth. There are no mathematics, even of the fourth dimension, that can serve the purpose here. The only absolute certainty that the historian can depend upon in writing the diplomatic story of such a nation is that

the territorial growth which is accomplished and the colonial policy adopted is in full accord with the popular will. Whatever logic there is in the evolution of a democracy may be discovered in the territorial policy of England and United States. But unlike empires built up by the power of a single will, such territorial acquisitions come invariably to be filled by citizens fully in sympathy with the ideals of the larger nation. This has most significant bearing on the future of our Latin-American diplomacy and the development of the Panama-Caribbean commerce.

The value of the work is considerably enhanced by the very complete footnotes and an admirable bibliography.

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AGRICULTURAL COMMERCE: GROVER G. HUEBNER, Assistant Professor of Transportation and Commerce, Wharton School of Finance and Commerce, University of Pennsylvania. D. Appleton and Co., New York and London, 1915. XVI+406 pp. 11 maps. Price \$2.00 net.

THE MARKETING OF FARM PRODUCTS: L. D. H. WELD, Professor of Business Administration in Sheffield Scientific School, Yale University, Formerly Chief of Division of Agricultural Economics, University of Minnesota. The Macmillan Company, New York, 1916. XVI+496 pp. Price \$1.50.

"Agricultural Commerce," by Huebner, is exactly what it purports to be, namely, a textbook for universities, much of the information contained in it having been compiled for use in a course on the Organization of American Commerce which the author has conducted at the University of Pennsylvania since 1908. Says the author: "In discussing the commerce in farm products it is not necessary to deal with soils, seed selection, planting, cultivation, fertilizers, crop rotation, farm labor, production costs, crop pests and animal diseases, harvesting methods, feeding, livestock breeding, farm machinery, land rents and similar phases of agriculture; for such matters constitute agricultural production. They need to be mentioned only in so far as they exert an indirect influence upon agricultural prices."

The treatment is objective. The author adheres to his definition of the subject with severe logic. For convenience of treatment, he divides the subject into eighteen chapters, in the following manner:

one chapter to definitions and scope; one to classification of agricultural markets and market processes; three to the grain market; two to cotton; one to the speculative exchanges; two to livestock; one each to wool, tobacco, and fruit; one each to the following topics:—inspection and grading; crop reports; insurance of agriculture commodities; financing of crops; prices of agricultural commodities; foreign markets and market influences.

The treatment of the grain trade illustrates the author's thoroughness and particularity in dealing with each subject. Take wheat, for instance; a discussion, and a map, show the distribution of the local wheat trade. The length and cost of haul to the country elevator is given. Then follows a description of the country elevator and its methods, of the primary markets and the various terminal activities. Various forms, such as certificates of weighing departments, warehouse receipts, etc., are printed in the text.

Speculation on the organized exchanges the author holds to be a good thing for the producer and consumer. He accepts the findings of the federal government in its investigation of the Cotton Exchanges in 1907-1909. He also holds that there is active competition between the various primary markets, so that prices are determined largely by supply and demand. "The evils of undue dockage," says the author, "have now been mainly prevented, for dockage at present is more strictly controlled by the state grain inspector or the grain exchanges."

The tariff controversy is handled in a manner familiar to all orthodox economists. Says the author: "The protective rates on grain, meat, animals, meat products and eggs, throughout the earlier years of their existence and until after the close of the nineteenth century had practically no effect upon prices in the United States."

The United States Cotton Futures Act of August 18, 1914, is printed in full in the Appendix.

On the whole the book seems remarkably free from errors. On page 45 statistics are given concerning the number of co-operative elevators. These figures are a little misleading, since a large number of these elevators are co-operative in name only. Most of the 331 so-called co-operative elevators in North Dakota, for instance, were incorporated under the provisions of the 1905 code, that is, four years before there was a co-operative law on the statute books. One more point admits of debate, namely, is not marketing a part of production? The author's sharp differentiation of the two, however, does not detract from the merits of his book. The author

has done his work so thoroly that no new book need cover the same ground again.

Turning now to Professor Weld's work on "The Marketing of Farm Products," we have quite a new and distinctive treatment of the marketing problem. Huebner's viewpoint is commerce; Weld's is marketing. Huebner distinguished marketing from production; Weld calls marketing a part of production. Huebner's work is a compilation of data from wide sources, gathered and organized with scholarly correctness; Weld's book, while equally scientific and scholarly, bears evidence of much firsthand and personal contact with the living problems discust. Huebner's work is almost wholly descriptive; Weld's treats more of problems and, in a guarded manner, with proposed remedies. On the subject of the grain trade Weld writes with an unusually strong and steady hand. He brings to this task unique equipment, since, under commission of the federal government, he was given free access to the secretary's books of the Minneapolis Chamber of Commerce, and also to the books and private accounts of the individual members, including line-house operators, terminal elevator owners, flour millers, receiving commission merchants, option houses and brokers. The author also made an investigation of the grain trade in Kansas City.

The material in the book is arranged in this order: marketing at country points; the wholesale market; the retail market. There are twenty-one chapters in the book, apportioned as follows: one chapter on the fundamentals of marketing and the middleman problem; one on marketing at country points; one on methods of sale; three on wholesale produce trade; one on sale by auction; one on cold storage; two on cost of marketing; one each on transportation and the prices of farm products; four on produce exchange problems; one each on the following topics: inspection and grading, city markets and the parcel post, co-operative markets, problems of retailing, and the weaknesses, remedies, and governmental activities.

Only a few of the more common problems in this book can be reviewed here.

Are there too many middlemen? Weld thinks the middleman is not a fundamental weakness in our system. In some cases there are too many middlemen, in others, too few. Some middlemen actually cheapen production. He considers this problem one phase of economic division of labor. "The tendency," says Weld, "during the last twenty years has been towards a greater degree of functional specialization, and in spite of popular opinion to the contrary, it is also safe to say that as a rule such specialization cannot

develop unless it results in greater economy or efficiency in the marketing process."

Co-operation receives only twenty-six pages of unenthusiastic treatment. The chief success in co-operative marketing comes at the country shipping points, for here, says the writer, is where they fulfill the greater need. The attempt of the Equity Society to establish a grain exchange at St. Paul he views with many misgivings. "The grain trade is organized on such an efficient basis," says Weld, "that little if any improvement may be expected from attempts of this kind, although if sufficient business is obtained, such an organization may save its stockholders that part of the commissions (one cent a bushel) represented by profit. This could be accomplished just as well, if not better, by operating thru an organized grain exchange, as does the Grain Growers Grain Company in Winnipeg; to establish a second exchange in practically the same market,—i.e., if it is possible to develop a real exchange—would result in a certain amount of economic waste and duplication."

The various terminal market activities in the grain trade receive full and convincing treatment. Speculation is shown to have beneficial functions. Under speculation, price changes are more frequent but less severe. Futures are used to avoid speculation. The chief evil of speculation is due to the speculative efforts of those outside the grain trade. Grain not hedged on the exchange, such as barley, show wider fluctuations than grains hedged, such as wheat. Corners are of very rare occurrence. "There would be the same possibility of cornering the supply of actual wheat if there were no system of future trading, and the results would doubtless be more serious." Mixing is demonstrated to be a good thing for the farmer, since it raises the price of the poorer grades of wheat. The retail margins are the biggest of all, no matter what the commodity is. Wheat, however, shows the smallest margins of any product sold by the farmer, thanks to the highly organized, competitive terminal markets. The Minnesota farmer receives 90% of the miller's price for wheat, for butter 77% of the retail price, eggs 69%, live stock 58%, potatoes 55%, chickens 45%, and milk 37½%.

There is no single or simple universal remedy or no revolutionary process which may be applied effectively to the weaknesses of marketing, says Weld. The activities of the federal department of Agriculture, especially the Bureau of Markets under Chas. T. Brand, receive commendation. The tariff is not mentioned.

In method, style, and substance, this book is the best I have seen on the subject of marketing farm products.

Both of these books contain full and satisfactory bibliographies and indexes.

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REPORT OF THE MINNEAPOLIS SURVEY FOR VOCATIONAL EDUCATION. Bulletin 21, National Society for the Promotion of Industrial Education, 1916. 967 pp. Copyrighted by C. A. PROSSER.

This report marks a definite step forward in dealing with problems of vocational education, as it provides a fund of information upon which profitable discussion and school procedure may be based. It is valuable in that it shows the industrial structure of a modern city and presents those conditions by the light of which educators are supposed to be guided when dealing with vocational education.

The study appears to cover thoroly the lines of investigation selected and is particularly valuable for showing the vocational education needed for the building, electrical, metal, wood, and printing trades, the flour and baking business, the laundries, garment making, dress making and millinery, the knitting mills and department stores, and for office work and home work.

Employers and employees were interviewed. This taking of testimony brought out the actual requirements for holding the various industrial positions. One source of information seems to have been overlooked. It would be interesting to know what the employment bureaus could have told both as to the need for vocational training and as to the demand for workers in various employments.

The concrete evidence afforded upon aspects of industrialism comes with the pleasurable surprise of verification. We knew that industry was specialized; the report shows that it is. The building trades, for example, are carried on by contractors, brick layers, masons, carpenters, electric wire men, hoisting engineers, laborers, painters, decorators, plasterers, gas fitters, sheet-metal workers, stationary engineers, steam fitters, stone cutters and structural iron workers. In the flour mill are found the roustabout, head miller, second miller, smutter, oiler, grinder and bolter, sweeper, packer, coal passer, fireman, engineer, electrician, baker, flour tester, chemist, plumber and steam fitter, millwright helper, millwright, machinist,

elevator foreman, carpenter, and elevator man. Industrial specialization is revealed on every page.

Another fact stands out,—an industry makes widely varying demands of service. In the milling business various employees would not need to know how to read. Speaking of the elevator man, the report says, p. 328, "Thus far he is the first man who must know how to read, write and figure. * * * No technical knowledge is needed. A man with ordinary intelligence can learn in a week." One qualification of the smutter, and about the only one, is that he have "extra sound lungs because his room has the most dust."

A gradation of positions is recognized in the report; in fact one of the important features of the report is the historicalness of its findings on the gradation of vocations. Consider the "bucker." The bucker places the rivet in place and holds a lever or bucking iron against the rivet while the riveter hammers. "All the bucker needs to know is how to hold this lever properly and a week is ample time in which to acquire this."

The gradation of employments suggests to the authors of the report a military comparison. In the army are officers, non-commissioned officers and privates. So in industry there is need of highly trained technical intelligence at the top; then of a much larger body of intelligent, trained employees for middle-grade positions. Down below are the positions for which little training is required, or, as in the laundry, for which no training is required.

The needs of the first group, those of the high-grade technical leaders of industry, are provided for in institutions for advanced technical education. It is the vocational training of the non-commissioned officers, the individuals "who fill positions secondary and subordinate to first class," that are felt to be neglected in the school system.

About eighty-five percent of employees require vocational training, and it is agreed that there is a marked shortage of technical training. A great many workers do not have enough training for their work. Of the workers that require training for their work the great majority have insufficient training.

It is evident that vocational training for various positions will require varying periods of time in the public schools if such training is to be given there. Industry does not imply the idea of four-year courses for everybody. Courses will vary in length according to the amount of training required for the employment, beginning with nothing for some of the flour mill hands and going up to the doc-

tor's degree for the head chemist. That is, so far as vocational education is concerned, and this report does not deal with the education of citizens. It confines itself to the training of producers. Educators still have the problem of the social education of the smutter, the bucker and the girl in the laundry.

One of the issues raised by this report is that of where the line shall be drawn between the public school and other agencies of vocational training. Should the public school confine itself to giving insight into vocations and a general and preliminary training intended to make the youth intelligent and adaptable in vocation or should it fit the man for the job? The latter alternative would entail a radical reorganization of the school system and vastly increase school expenditure. The public schools must go further than they have, but how far? The small number of persons in many of the specialized employments has to be considered. Certainly a small city could not hope to provide complete trade training for all the different types of workers within its limits.

Historically the learning of vocations occurred in connection with the practise of the vocation. Presumably the finishing touches of vocational training will in the future be received under working conditions. Business houses and industrial establishments must share in the labor of vocational training and meet the public schools half way.

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THE ARCHAEOLOGY OF THE HOLY LAND: P. S. P. HANDCOCK.
The Macmillan Company, New York, 1916. Two folding plans, 26 plates, 109 figures, and 383 pages. Price, \$3.00

The author, who has performed a like service for Mesopotamian archaeology, is by training and opportunity qualified for his task. The wealth of the British Museum and the labors of the Palestine Exploration fund have been especially at his command. And as the preface attests, the researches of scholars of all nations have been freely levied upon.

One special merit of the present volume is the systematic ordering of the material. What has, hitherto, been set forth in journals and memoirs as excavations progress, we now have before us thoroly classified. Of special value to the present work have been the massive tomes of Macalister to whom the author gives generous rec-

ognition. Invaluable records have come from El-Hesy, Ta'annek, El-Mutsellim, Tell Sanda-hannah, Jericho and from other sites, but it is Gezer that has come nearer than others to furnishing a chronological record from Troglodyte times to modern Arabs.

The chapter on caves and rock-cuttings admits us to the homes of the original dwellers of the land. On a single site, Tell-Sanda-hannah, were 400 such caves. The land rests on a bed of limestone rock which the elements for ages have been honey-combing with caverns. These natural beginnings primitive man with his crude tools enlarged, joined together, and roughly embellished. A notable instance of "an undisturbed Troglodyte dwelling" is from Gezer. About 30½ ft. long, with a maximum height of 7 ft. 2½ in., this cave still shows raised platform, floor pits, flints, potsherds, but—if one excepts a single buffalo horn—no bones. How long has Man lived on this earth! Estimates of enthusiasts of 8,000 B. C., 10,000 B. C. have been carefully qualified by scholars, yet here at Gezer is a considerable degree of progress as far back as the neolithic Troglodytes. It is but little over a year since an American scholar gave us a sequacious narrative of Paleolithic man accepting the mean estimate of 520,000 years. However, so long as doctors disagree (from 100,000 as Upham, Heim, to 800,000 as Lyell) we, perchance, must be content with conjecture. We have long since seen dynasties dropt a millenium over night and the supports knocked out from under the most careful calculations by being shown the demonstrability of error. A safe estimate for early Palestinian chronology may be accepted as given by Macalister:

Primitive cave-dwellers	3,000 B.C.
Canaanites	2,500 B.C.
Semitic occupation	2,500-550 B.C.
Persian and Hellenistic	550-100 B.C.

The architecture of the land covers all stages from the rude earth rampart sufficient against scarcely more than beasts and walls cyclopean in style to the elaborate structures of the Kingdom and of the Greek period. One of the marvels is the water-supply of these ancient sites. One reservoir has a capacity of 600,000 gals. and another shows a water-passage 23 ft. high, nearly 13 ft. wide and with varying dimensions extending for 219 ft. This tunnel seems to have been abandoned somewhere about 1450-1250 B. C., and possibly was cut no later than 2000 B. C.

One of the great survivals of Canaanite life is the now famous high-places. The ancient high-place comprised five features:

1. Altar.
2. Standing stones and Asherah.
3. Ceremonial lavar.
4. Sacred cave.
5. Depository for rubbish.

It might be noted that no one site showed all these five types of remains.

Of the myriad forms of pottery a chronological table has been built up on the basis of "foreign influence," "technical processes," "ware," "shapes," and "ornament," covering a period of nearly 3,000 years. Implements have been discovered ranging from plows to fish-hooks and from spindle-whorls to tweezers, mirrors, and buttons, and made of stone, iron, bronze, bone, ivory, glass, silver, and gold.

Forms of burial vary from the Troglodyte crematorium to the late Hellenistic hewn chambers with loculi carefully cut in the walls. There are even Byzantine burial caves with benches on which the shrouded corpses were placed. Space allows mention only of the foundation burials of religious significance, which call up the few hints in the Old Testament writings. The presence of numerous Jar-burials near to an altar-site suggests sacrificial explanation; the occurrence of jar-burials under buildings suggests the effort to ward off a curse or some disaster; and jar burial and contracted burials mark similarity with the ceremonial of primitive peoples elsewhere, as in Egypt and Babylonia. What Bliss has done for exploration in Palestine, our author has accomplished here, an epitome of the ancient life of the land as shown forth in the handiwork of the successive peoples, a vade mecum indispensable alike for the Bible student and for the student of history.

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REGULATION OF RAILROADS AND PUBLIC UTILITIES IN WISCONSIN:
FRED L. HOLMES, Madison, Wis. D. Appleton & Co., New
York and London, 1915. XII + 376 pp. Price \$2.00 net.

There are in the United States to-day forty-two thousand miles of railway, or one-sixth of our total mileage, in the hands of receivers. It is a disconcerting fact that practically all of the bankrupted roads are located in those parts of the country which are notorious for the stringency of their regulations of railroads. The railroads are making capital of this fact in a tremendous effort to

secure the abolition of all regulation, both that of the Interstate Commerce Commission and of State commissions.

In view of this situation, an intelligent, first-hand explanation of the powers, methods, and accomplishments of what is admittedly the foremost state railroad and utilities commission in the country is a distinct contribution to the literature of applied economics. An exposition of the workings of the regulatory body which has been able to save to the consumers of the state at least \$3,300,000 in reduced rates but which at the same time has so wisely safeguarded the interests of the corporations themselves that the gross earnings of the railways have increased 43% during the period of regulation—such an exposition is in truth opportune at this time. Mr. Holmes gives us in this book an opportunity to discover the principles upon which Wisconsin regulation has proceeded so successfully.

A reading of this volume with a view to ascertaining what distinctive features of the regulation of the Wisconsin Railroad Commission are responsible for its rather isolated position among the successful regulatory bodies, reveals the following facts:

1. The Commission has been fortunate in possessing members highly trained in the principles of economic law. These men have been able to apply these laws to concrete cases while at the same time safeguarding established equities.

2. The Commission has not kept itself aloof and superior but has invited and obtained the co-operation of the railroads and utilities until these have come to look upon it as an indispensable partner in their businesses. Its expert assistance in the formulation of rates and standards of service is now recognized by the companies to be of great value to themselves as well as to the public. In this way the Commission has won the confidence of those who at first regarded its existence as distinctly dangerous.

3. The Commission has been authorized to act upon the principle that railroads and public utilities are natural monopolies and as such are entitled to protection from competition. By virtue of its power to refuse the necessary Certificate of Convenience and Necessity, the wasteful duplication of plants and equipment has been obviated. Even municipalities have been denied the right to erect their own lighting plants, for it was shown that to do so would inure to the financial loss of the citizens and consumers. The admirable accounting systems installed by the Commission, in rendering possible the ascertainment of such facts as these, have proved to be one of the most valuable features of the Wisconsin method of regulation.

4. The constitution of the State of Wisconsin, in making possible the enactment of the Indeterminate Permit Law, fortunately permitted the very foundations of this efficient regulation to be laid. A commission thus armed with the power of terminating the franchise of every utility under its control possesses the effective weapon with which to enforce compliance with its orders. Then too, the courts of the State have so progressively interpreted the laws of the legislature and the orders of the Commission that the execution of both these has been unhampered by the exercise of that ordinarily troublesome privilege, the right of judicial review. The progressive position of the courts is well stated by Mr. Holmes when he says: "Gradually the Wisconsin Supreme Court has abandoned the customary practice of shackling Twentieth century progress with Eighteenth century ideals."

In criticism of this work the writer must say that it appears to him that the author, in some of the more difficult portions of his exposition, has been either too thoroly or too insufficiently familiar with the complex process involved to render clearly apparent the underlying principles acted upon by the Commission. This is particularly true of the chapter, "The Making of Railroad Rates." At best the complex factors which enter into the determination of rates are apt to lose the inexperienced student in a maze of considerations such as average cost per ton mile, terminal costs, movement costs, transfer costs, thru and way freight costs, and classifications. Mr. Holmes' chapter is an excellent treatment of these items separately but fails to co-relate them so as to indicate the complete system of rate determination for any given shipment. This example is, however, not typical of the book.

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THE WORK AND TEACHINGS OF THE APOSTLES, Volume VI in "The Historical Bible": CHARLES FOSTER KENT. Charles Scribner's Sons, New York, 1916. One map, one chart, and XI + 313 pages.

For many years Professor Kent has been working to present to the lay student, especially the busy man and woman, the literature of the Bible in the light of modern, sane, scientific scholarship. Already a score of volumes bear his imprint as author or editor.

This last volume is a fitting climax to the excellent series "The Historical Bible."

It is a veritable treat to have the literature of the New Testament thus set forth in the historical framework provided by the book of Acts supplemented by helps and hints from contemporary writers. When we see thru the eyes of that wonderful first century, passing thru their experiences and enduring their trials and temptations, the New Testament Scriptures take a deeper hold on us by the fact of their issuance not from the philosopher's den but from the smithy of men's souls. Since Conybeare and Howson, now old yet ever new, this task has been often done, yet each new treatment brings new zest.

Beginning with an analysis of the authorities, Kent goes on to draw a picture of the world of Paul and the other Apostles. The Roman world as the circle of civilized lands, the arena in which Christianity rose and finally won; the culture and philosophy of the Greeks; the conflicts of rival religions; and the needs of Roman society especially of the humble folk to whom Christianity made special appeal, are all set forth as a historic background. An illuminated chart and an itinerary map of the eastern world westward to Rome, form a fitting close to this part of the work.

Here begins the book of Acts. In the very words of the Biblical narrative the story is told, helped on by marginal topics and illuminating discussions at the close of each section.

According to the standpoint of our author the tradition of a second Roman imprisonment cannot be traced earlier than the close of the second century, on which point neither side, of course, can present a clear case. There is an excellent discussion of the Corinthian correspondence, the four letters being traced (as also see Bacon, *Introd. to the N. T.*). Paul's last letters date from Rome, and the Apostle's death falls in 57 or 58 A. D. The letter to the Ephesians possibly bore the superscription, "to the Laodiceans."

The literary beauty of the letter to the Hebrews is fittingly dwelt on, the work of "a theologian, a finished orator, and a master of the Greek idiom," acquainted with the writings of Philo and with the Alexandrian type of thought. On the authorship of James the dictum of Jerome is followed—"written by a different James from the brother of Jesus." The Apocalypse belongs to the Johannine circle as do the Johannine letters. In four instances we cross, possibly, into the second century—the letter of James and the second of Peter, the Johannine gospel and letters, and the Pastorals in their present form. A classified list of questions and readings closes

the volume. Probably no better presentation of the New Testament literature is accessible to lay students whether singly or in classes. The entire series is a boon to Bible students and worthy of confidence and study.

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University Notes

Homer B. Sprague and the University The first article in this number of the *Quarterly Journal*, "President Sprague's Administration of the University of North Dakota," will be found of great interest to all friends of the institution. Doctor Sprague was, as stated, president of the University from 1887 to 1891, during the early days when it was in the process of formation. After an absence of twenty-five years, he returned, last June, a man of eighty-seven years, to give the Commencement address. This address was a masterpiece—"Shakespeare's Greatest Character—a Woman"—and delighted not only all lovers of the English bard, but the entire large audience as well. Doctor Sprague was the guest of the institution for several days, and the visit was greatly enjoyed as well by new acquaintances as by old-time friends. He had a fund of reminiscence and of recorded fact about the early days that drew all to him. Again and again he expressed himself as surprised and charmed with the growth and development of the University—the enlargement of the material plant, the added number of faculty and students, and the fine recognition that has been accorded it by institutions of higher education throughout the United States. The *Quarterly Journal* is more than pleased to present to its readers the article referred to. The fulness of treatment—the very details mentioned, even the visits of the wolves and the fracas in the Commons—are, under the circumstances, refreshing and appealing. As a whole it will not only be of interest to all friends of the institution, as said above, but, as well, prove of great value from the historical point of view. The portrait accompanying the article is particularly appropriate being taken about 1890—during Doctor Sprague's work in the University. A pleasing feature of the commencement exercises to which Doctor Sprague contributed so much by his fine address was the conferring upon him by President McVey of the degree of LL.D. In doing this the University felt that it was both honoring and being honored.

Faculty Changes More changes than usual have taken place in the University faculty this year.

Dr. L. D. Bristol, who has been Director of the Public Health Laboratory and Professor of Bacteriology for the past two years, resigned to continue his studies at Harvard University. He has been succeeded by Dr. J. W. Cox as Acting-director. Dr. Cox has

been Professor of Pathology in the School of Medicine. In the department of Economics and Political Science some re-organization was made necessary by the resignation early in the summer of Dr. J. E. Boyle, who has become Investigator for the Agricultural Experiment Station at Fargo. Dr. H. B. Whaling has been made acting head of the department, and Mr. Stephen A. Park Jr. will assist him as instructor in Economics and Political Science. Mr. Park is a graduate of the University of Kansas and has pursued graduate work at the University of Wisconsin for the past three years. Dr. Fred Smith, who comes as Instructor in Classical Languages, took his graduate work at the University of Chicago. Dr. Smith was born in England, and was both student and instructor at Lawrence University, Appleton, Wisconsin, and at the University of Chicago. Dr. J. W. Todd who, during a year's leave of absence, has been Professor of Psychology at the University of Indiana, has returned to his work here. In the absence of Dr. Young, who will be away on leave during 1916-1917, the work in zoology will be in charge of Mr. George E. Johnson. Mr. Olsen, who succeeds Mr. J. M. Henry as instructor in commercial subjects, is a graduate of the University of South Dakota and last year was instructor in the high school at Devils Lake, North Dakota. Miss Ella Groenewold succeeds Miss Mary Howe as head of the department of Home Economics. Miss Groenewold is a graduate of the University of Chicago, and for the past two years has been serving as instructor in domestic science in the Emerson School at Gary, Indiana. She will be assisted by Miss Katherine Bower of Shenandoah, Iowa. Miss Bower is a graduate of the Kansas Agricultural College and has had an extended teaching experience. Miss Fannie Putcamp succeeds Mrs. E. C. Griess, nee Selma Steinfort, as Instructor in German and Latin in the Model High School. Late in the summer Mr. E. E. Fickett resigned his position as Instructor in Metallurgy and Assaying to accept a position at the University of Washington.

Dr. James Grassick of Grand Forks has been appointed University Physician. Dr. Grassick will have charge of the Dispensary and general health conditions of students at the University. His long association with the practise of medicine in the state will make this a happy arrangement for the general care of the students. Miss Minna Nyberg of Minneapolis has been appointed University Nurse and Supervisor of Residence Halls. Miss Nyberg is a graduate of the Swedish Hospital at Minneapolis and has had an extended experience in the University of Minneapolis Dispensary and the sum-

mer camps of the Minneapolis Visiting Nurses' Association. Miss Ethel Halcrow, who last year was a member of the faculty of Wesley College, is to be associated with Mr. Greenleaf in the work of the University Bureau of Public Information.

The College of Engineering

For a number of years the question of consolidating the colleges of engineering at the University has been under discussion. Some progress had been made in this direction by the bringing of the different schools under the administration of a Committee, consisting of the President of the University, the Deans of the two schools and the Director of the Course in Civil Engineering. The Educational Commission, provided for in Ch. 361 of the Session Laws of 1915, recommended to the Board of Regents that the engineering colleges and the course in civil engineering should be organized in one college. This organization was completed in June of the present year. All courses in engineering at the University are now given in the College of Engineering and School of Mines. This concentration of organization should result in closer coordination of the work and make it possible for the college to widen its scope in many directions. The Board of Regents chose as the head of the new college, Doctor Earle J. Babcock, who has served the University for many years as Professor of Industrial Chemistry, Mining and Metallurgy, and also as Dean of the College of Mining Engineering.

The placing of all the instruction in professional engineering at the State University, in accordance with the general practise here and elsewhere, is a step in the direction of developing distinctive functions for the different schools and colleges of the state. This move on the part of the Board of Regents should meet with the hearty approval not only of the alumni of the University, but of the people of the state, since without question there is room for but one College of Engineering in North Dakota.

The Department of Classical Languages

The death of Professor Perrott left the chair of Latin at the University vacant. His death was much regretted and mourned at the University. It seemed desirable, in view of many things, to unite the departments of Latin and Greek under the title of the department of classical languages. This reorganization is in line with the development of the work in classical languages in many of the universities, and brings a larger field and a wider opportunity to the department in the two literatures. Professor Gottfried E. Hult, who has served as Professor

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of the Greek Language and Literature for a number of years, was made Professor of Greek and Latin and Head of the Department of Classical Languages. Mr. Fred Smith, a Doctor of Philosophy of the University of Chicago, has been appointed instructor in the department.

The Commissioner of Education One of the provisions of the law establishing the State Board of Regents was the requirement that they should appoint a Commissioner of Education from out of the State. The duties of this officer are largely advisory, and in this capacity he serves the Board in the making of reports, the study of educational conditions, and advising the Board regarding the situation in the different institutions in the state. For this important office Dr. Edwin B. Craighead, formerly President of the University of Montana, has been selected. Upon the recommendation of United States Commissioner of Education, Dr. P. P. Claxton, Dr. Craighead was made a member of the Educational Commission, and the experience gained in that capacity was deemed of sufficient value, together with his record as an educator, to bring about his appointment as Commissioner of Education.

Dr. Craighead was born in Missouri, graduated from the Central College of Missouri in 1883, pursued post-graduate studies at the University of Virginia and the Universities of Leipsic and Paris between the years 1884 and 1888. He served as Professor of Greek at Wofford College, South Carolina, 1888 to 1893, was President of Clemson College, South Carolina, 1893-1897, of Central College at Fayette, Missouri, from 1897 to 1901, of the Missouri State Normal School 1901-1904, of Tulane University 1904-1912, and of the University of Montana 1912-1915. Dr. Craighead has been a member of the Carnegie Board for the Advancement of Teaching since its foundation. He brings to his new position in North Dakota a wide experience and a ripe scholarship.

The Bendeke Loan Collection The late Honorable Halfden Bendeke of Grand Forks was an enthusiastic collector of paintings and art objects. From his travels he had brought together in his home in Grand Forks a considerable number of paintings, water colors and etchings. His daughters, Miss Lillian and Miss Effa Bendeke, have authorized the executor of the estate, Mr. Carl Gowran, to place these pictures at the University as a loan. The group contains some fifty oil paintings, about thirty-five water colors and etchings, as well as two beautiful pieces of marble statuary. These

will be placed in the buildings of the University and open to view on certain days of the week to those interested in seeing them. This loan which is made to the University by the Bendeke Estate is perhaps the forerunner of larger collections, and it is hoped that in the not far distant future the University may have an adequate place to care for such collections. There is no public collection of paintings in North Dakota, and it would be a most desirable thing, as already seen in the interest shown to a considerable degree in the museum collections at the University, if a beginning were made in the providing of adequate housing facilities. It is to be hoped that something of this kind may be brought to pass.

The Summer Session

The 1916 Summer Session of the University was a success in every way. The attendance, 145, while not large as numbers run, is very encouraging, when all things are considered, and is an evidence that the effort of the institution to be of service is being appreciated. The University itself is only about thirty years old and its Summer Session only six. It is, too, a very substantial increase, more than 27%, over the attendance of last year and represents a good average percentage of the regular yearly attendance. As heretofore, the students were an earnest, hardworking group of young men and women eager to make the most of their opportunities. The new features of last year, the evening lectures and the round-table conferences, were continued with success. These features were extended by offering a series of moving-picture and lantern-slide entertainments of an educational character that seemed to be appreciated.

The following tables give data of interest in comparing the work of the 1915 and 1916 sessions:

ATTENDANCE

	1915	1916
Men -----	58	59
Women -----	56	86
	<hr/>	<hr/>
	114	145
Students New to the University-----	41	52
Former Students Returned-----	73	93
	<hr/>	<hr/>
	114	145

ELECTION BY SUBJECTS

	1915	1916
Biology -----	4	1
Chemistry -----	12	15
Economics -----	27	37
Education -----	47	54
English -----	21	28
Fine Arts -----	Not offered	10
French -----	6	5
Geology -----	4	0
German -----	21	21
History -----	5	18
Home Economics -----	9	21
Latin-America -----	0	5
Library Science -----	4	0
Manual Training -----	13	11
Mechanical Drawing -----	7	10
Physical Education -----	28	34
Psychology -----	13	15
Sociology -----	11	8
Spanish -----	6	5

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Mitigating Rural Isolation

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COUNTRY VERSUS RURAL ISOLATION

THE statement is often made that the great urban problem is that of congestion of population while the chief drawback to rural life consists in the isolation of families and people. It is held that life in cities is too compact while that in the country is characterized by too great an aloofness. Altho there is truth in such statements they must be accepted with due qualification, for a knowledge of urban conditions teaches that congestion is only partial in cities, that such centers present great variations in compactness, and further, that crowding of populations is but one of the many problems of municipal aggregations. In like manner an acquaintance with rural conditions indicates that while isolation of families is extreme in some portions of the United States, such as in the Rocky Mountain division and in certain of the newer prairie states, in many sections of the nation homes occur at frequent intervals, affording many opportunities for social exchange. And as congestion is but one of the problems which city communities face, isolation constitutes only an instance of the various kinds of rural problems.

It is also worth noting that isolation is not peculiar to country populations. Isolation is not solely a matter of spatial separation; the greater the distance persons are removed from one another the more intense the consequent social aloofness. On the contrary, isolation is in part a state of mind, one of the chief factors of which is a feeling of loneliness, and such a state frequently occurs among persons living amid dense urban populations. Perhaps the greatest hunger for human association and friendship is often to be found in the midst of the throngs of great cities. Neighboring in cities is not always or mostly with those who live next door or in the same block. The urbanites' closest friends may be blocks or miles removed, necessitating the occurrence of social exchanges at infrequent intervals. Similarly the

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church and other institutions that are attended, the theater, the recreation place and the like, may be far distant, requiring a considerable journey to attend them.

Nevertheless, altho there is danger of exaggerating the isolation obtaining in the country, the social aloofness that exists there is real, considerable, and serious. Grant to individuals living in cities friends and a standing in some circle or set of persons, and unquestionably opportunities for intercourse and amusement, culture and social service are not only much more numerous in cities than in country but in general the distance traveled to reach them is less; and perhaps it should be added that the facilities of transportation and communication are better.

CAUSES OF RURAL ISOLATION

Prior to any attempt to prescribe a solution for the problem of rural social isolation it is essential that the causes of that condition shall be discovered. In consequence of the undertaking it may be realized that some of the causal conditions are relatively absolute, unconditioned, and therefore irremovable and unpreventable. Were this premonition to prove true it would be necessary to think and speak, not of overcoming rural isolation but of mitigating it.

There are three proximate conditions which account for the rural social isolation existing in the United States; namely, spatial separation of families, fewness of social institutions, and what may be called the rural state of mind. These will be considered for the purpose of evaluating the difficulty of overcoming or of mitigating them.

SPATIAL SEPARATION

A fairly approximate perception of the degree of separation obtaining among persons and families in each of the nine geographical divisions of the nation may be gained by dividing the rural population by the appropriate division area. This is only approximately correct for rural density since, besides the rural territory, the total division area contains the urban area; and further the rural population includes that of towns and villages, or all segregated populations of less than 2,500 inhabitants each. The latter statement is undoubtedly of greater import than the former, creating the likelihood that the rural population density is somewhat, tho not greatly, less than the accompanying figures indicate. The following table sums up the data:

Rural Population Density in the United States, 1910

Division	Division area	Rural population	Population per square mile	Families per square mile
New England ---	62,000	1,097,000	16	4
Middle Atlantic --	100,000	5,593,000	56	12.7
E. N. Cent. -----	246,000	8,633,000	35	8.1
W. N. Cent. -----	511,000	7,764,000	15	3.3
South Atlantic ---	269,000	9,103,000	34	6.8
E. S. Cent. -----	179,000	6,836,000	38	7.9
W. S. Cent. -----	430,000	6,827,000	16	3.2
Mountain -----	859,000	1,686,000	2	0.47
Pacific -----	318,000	1,810,000	6	1.4

(Abstract 13th census, pp. 29 and 60.)

In this table the figures for area and population are correct only to thousands and the error in the population per square mile is less than five tenths. The number of families per square mile is obtained by dividing the division population per square mile by the average size of family for the corresponding division. (Same, p. 260). While no pretension is made to absolute measurement, the figures are valuable as an aid to visualizing what spatial isolation means in the various portions of the country. Since the density figures are averages for whole divisions it is apparent that the situation in extreme states must be widely different.

According to this table, four of the divisions have 34 or more persons or practically 7 or more families per square mile, the Middle Atlantic having 56 persons and almost 13 families per such area. Where there are 8 families to the square mile they might be so located in that space that the homes need be only about one fourth of a mile apart. What really occurs is that the homes are placed along adjacent lines of travel and lie comparatively near each other. In the case of three divisions, containing over three-tenths of the total rural population of the nation, there are from three to four families to the square mile, requiring a separation of homes of perhaps one-half mile or more. The Mountain and Pacific divisions contain about one-twelfth of the rural population and in these divisions the families must be on the average from a mile to over two miles removed from one another.

SOCIAL INSTITUTIONS

Should we compare an urban with a rural community in respect of the number and quality of social institutions used for communal

purposes it would be possible to estimate roughly the force of the second assigned cause of rural social isolation. It would be scarcely fair to contrast with the average rural neighborhood the average city as a whole for this purpose, for such a city is a series of communities rather than a single community. It would be better to institute the comparison between types of rural and urban neighborhoods.

In the typical rural community are to be found church and school generally, altho there are many neighborhoods without churches. Farmers' clubs are developing rapidly but are not yet sufficiently numerous and universal to be considered typical of farm communities. But perhaps Grange, Society of Equity, the Union, or some such organization might well be included. This list which is liberal practically exhausts the list of institutions which rural neighborhoods commonly possess and enjoy. In the town-country communities (villages with the closely associated surrounding agricultural region) no doubt should also be included the lodge. The typical city community supports school, church, saloon (save in prohibition territory), lodge, play houses, dance halls, movies, pool halls, and kindred places. Besides these the shops, stores, factories, and streets bring individuals into frequent contact. Certainly institutional facilities for social interchange in the typical urban neighborhood are far more abundant than in the typical farm community.

Relative to their quality for purposes of social interchange the institutions of the city communities are likely to be superior. The average rural church is an anachronistic, semi-decadent affair. It typically comprises a one-room building where all activities must be accommodated. It practices what aptly has been called "ministerial vivisection," the distribution of a minister's services between two or more churches, with the probable consequence of being ministered to by a man of inferior training or ability. In consequence of these conditions, not to speak of others, its activities are few and listless.

The typical country school is likewise a backward institution. It, too, is a small one-room affair, without facilities for diversified instruction, sustaining an ill-adapted course of study, with too few pupils to create competitive interest in class work or to sustain organized play. It is ungraded, demands a multiplicity of brief classes daily, and is taught by a poorly paid, poorly trained pedagogue. In contrast with these the average city church and school appear to be very progressive and efficient institutions, and the other agencies found in urban neighborhoods but not in rural are of equally prepossessing character.

RURAL CONSCIOUSNESS

Rural consciousness, or the form the rural social mind takes, is a large factor in the production of rural isolation. What may be phrased "passive rural-mindedness" operates as an efficient but indirect cause of such isolation. This form of consciousness consists in being satisfied with aloofness, paucity of social organizations, dearth of contact and community activities, with the consequence that the individuals so conditioned do nothing and want to do nothing toward improvement. Of course those who are so minded are not aware of it any more than do the mass of people take cognizance of the social customs and modes of procedure of their national, class, or local groups.

Not all inhabitants of country districts are possessed by passive rural-mindedness. Some there are who are "urban minded," being discontented with rural life and having a strong desire to dwell in the city. Probably only the powerlessness to secure the financial means to carry out a successful removal stands in their way of joining the urban ranks.

Again there is a state of consciousness which may be called "active rural-mindedness." Those who are actively rural minded dwell in the country because they wish to do so. Nevertheless, they are intelligent regarding the deficiencies in rural community matters and positively desire and strive to remedy them. This body of citizens constitute the hope of the country-side. However it is likely that the passively-minded individuals are in the majority, thus making changes toward a better situation difficult and slow.

Those who have studied the origin and evolution of the various forms of social consciousness would say that passive rural-mindedness is far less the result of biological inheritance than of habitual association, the unresisting acceptance during the formative period of life of those conditions and forms of life which obtain in the family and neighborhood. Only in so far as rural individuals are differentiated at birth by natural capacity, some being born more active and aggressive psychologically than others, does heredity play any considerable part in the establishment of the passive and active rural-minded classes. Given custom-bound families and neighborhoods, a person of good ability by birth may and probably will accept the prevailing outlook and develop into an individual of the passively rural-minded sort.

When the outlook of the masses of country inhabitants is such that what obtains is accepted as inevitable, when the materials and currents creating intellectual ferment are lacking, when social isola-

tion is viewed as an ordinance akin to the order of nature, aloofness, discreteness of existence, and impoverished social life appear under the category of the anticipated and the established.

SIGNIFICANCE AND EFFECTS OF ISOLATION

Rural social isolation is commonly alluded to as an indisputable evil and the tendency is to accept this judgment without question. The conception that man is gregarious by nature has been so widely sanctioned that any situation in which this collective inclination does not or is not permitted to operate is at once viewed as unnatural and harmful. Without pausing to challenge this idea, it may be profitable to review the evidence in its support. If ancestry counts for anything toward fastening traits upon the descendents, it would be expected that gregariousness and the love of social contact would be among man's most ingrained attributes. First, with a few exceptions all vertebrate mammals are addicted to leading a group existence. The droves, herds, flocks, and packs of both domesticated and wild animals bear testimony to this. Then man's most direct and immediate ancestral forms, the simians, were social to the extent of living in families, sometimes, at least, in larger groups. While man did not descend directly from simians, his immediate ancestor must have been closely related to them and doubtless partook of about the same characteristics.

Again, archeological evidence pertaining to the remains of prehistoric man points unquestionably in the direction of the communal existence of those ancient but near of kin ancestors. The finds in caves, kitchen middens, lake dwellings, and the like yield testamentary support. Further, all our knowledge of mankind within historic times, information regarding ancient Asiatic and African men and, especially, concerning early European inhabitants bear no trace of normal men and women leading other than a group existence. Europeans have been village dwellers from the earliest historic times, so much so that even agricultural activities are carried on from village centers. Finally, there is the profound and widespread movement in recent times, the world-phenomenon of urbanization, the rapid trend of population toward city centers, and the building up of municipalities, great and small, the advance of mankind into an ubiquitous and urban civilization. While the ultimate springs of this process are science and invention applied to geographical and economic things, forces which are intrinsic to modern society, the psychical processes of men are not only not averse to being impelled by these

forces but manifest distinct and solicitous cravings for the conditions and attractions to be found in compact aggregations.

The consequent expectation regarding the deep-seated results of heredity and the inference from age-long participation in none but collective existence compels the conclusion that modern man has received a reinforced gregarious tendency from remote times and that, unrestricted by contingent circumstances, he finds his highest satisfaction in living under close intercourse with his fellows. The American rural inhabitants are products of the past in like manner with those of cities. They are inherently collectively inclined and sensible of some of the advantages of association with neighbors and friends. Abundant evidence of this exists in the events and currents manifesting themselves in the country. Under favorable conditions the constituted proclivities assert themselves in the direction of rural community improvement.

Since we may say that the desire for human association and for frequent personal contact is deeply ingrained in man's constitution, it would be expected that any considerable deprivation and repression of that inclination would be considered an affliction and that those limitations perhaps might bring pathological consequences.

That rural social isolation is regarded as undesirable by country people is attested by several sets of events to be mentioned without discussion: the flow of large numbers of persons from country to city; the settlement of retired farmers in neighboring towns and villages; the frequent testimony of intelligent ruralites to the irksomeness and the undesirability of the customary social poverty; and the response to the introduction of social facilities by practically every class of non-urban residents, including the group we have alluded to as the passively rural-minded. That the latter class respond is not inconsistent with calling them passively rural-minded, since they may take advantage of privileges without participating in their establishment.

The pathological consequences of rural isolation must be indicated briefly. Isolation may be either absolute or relative. It is sufficient to indicate the evil results of absolute isolation by alluding to the fact that in penal systems solitary confinement has long been regarded as one of the most extreme forms of punishment to be accorded a prisoner and that it is generally used as a method of last resort. Very few convicts are able to endure its horrors of mental strain for long, it is held in dire dread by prisoners commonly, and psychical collapse, even insanity, have often been its result. To con-

demn prisoners generally to solitary confinement would be so inhuman that society would repudiate it.

It has been recorded frequently in the annals of the frontier that shepherders who remain on the plains with their flocks for months apart from human beings have lost their mental poise and become insane. Freedom in the midst of nature without the stimulus of personal association may not be sufficient to guarantee a normal mental functioning.

This brief survey of the possible effects of absolute isolation offers a good background for regarding aloofness in its relative form. Relative isolation is found in the case of families who live sufficiently remote from others to make social exchange difficult and infrequent and where organizations to carry on associational activities are very insufficient. Life under these conditions entails a degree of dehumanization. The fulness of personality which frequent social exchange brings is absent. If mind sharpens mind and ideas breed ideas, continuous confinement within the circle of a single family is insufficient to make a full-orbed mind and to incite mental variation. Nor can the greatest satisfaction be found in meeting and holding converse with such a limited group, no matter how deeply regarded. Such intense intellectual inbreeding results in an enfeebled psychical stock and a narrowed existence.

Perhaps the most severe strain arising out of this situation is suffered by the women of the farm homestead, especially by the mother. Her sphere of practical action is within the confines of the house, she cannot meet the neighbors at the borders of the adjoining fields as city women may talk across lots, nor in the exchange of tools and work does she have the opportunity to converse as do the men of the farm, and her field of cooperative exchange is limited. Neither does she go to the neighboring town for marketing and repair purposes as often as the men. Further, her work is of a routine nature, lacking the variety and the occurrence of new situations that call for inventive talent which the activities of the outdoor workers involve. That farm women age much earlier in life than do the men is no doubt partly due to the greater absence of intellectual incitement.

The sparseness of the data relative to rural and urban insanity is one of the weak places in a comparative study of the conditions regarding country and city. The conclusions which may be drawn from the meager facts are tentative and to be accepted with reservation. So far as they go they indicate that rural populations are more prone than are urban inhabitants to melancholia and senile

dementia. Such being the case the interpretation is somewhat obvious. Melancholia appears to be an affliction to which farm women especially are addicted. Its great inciting cause may be regarded as the monotonous and empty mental life they are compelled to lead. A perfectly inept and stupid existence is well calculated to end in a great stupor. Brooding over real and imaginary troubles and wrongs breeds profound pessimism and despondency that the feeble spark of intellectual interest involved in the surroundings is insufficient to counteract. The author came upon an instance in an agricultural state of a housewife who had not been beyond the confines of the farm for over three years. Her round of duties was her sole interest. It is remarkable that she and thousands like her are able to withstand the strain and keep from succumbing to an overwhelming depression. Perhaps only the sensitive and the imaginative fall easy victims to melancholia.

Senile dementia seems to be the form of insanity that is most rife among agricultural males. When a man is too old to farm actively there is little in rural communities to stimulate his mental life. Probably he has never formed the reading habit so that papers and books are not attractive to him. There is nothing to see or to go to. His life work is closed and there is little to stimulate to activity the mind and will. Left without incitement to normal expression, the will to live and to be interested in life is empty and logically collapses.

QUESTIONABLE REMEDIES

The problem of rural isolation has attracted much attention and naturally has brought forth a number of proposals for solutions and panaceas. Since some of these solutions are regarded with a degree of seriousness, they should receive a brief critical examination.

One of the most short-sighted and brutal suggestions is what may be called "familism." It is asserted that the social activities and satisfactions of rural inhabitants inevitably must be limited to the sphere of the family, since that institution represents the scope of normal human association possible to country districts. This proposal flies in the face of accomplished facts and is only a dogmatic generalization from a narrow range of data. It is doubtless true that the majority of rural inhabitants realize the larger portion of their associational life within the family and that many will do so for some time to come. But notwithstanding the fact that the family is a most worthy and indispensable institution and that it is destined to furnish much of the social contact for both rural and

urban inhabitants in future, it must be said that it is too small, un-resourceful, and monotonous to supply complete associational satisfaction. Moreover, multitudes of country neighborhoods have established and now enjoy larger community organizations. The trend of the rural movement without question is toward the creation and the adaptation of varied recreational and social facilities.

Another proposition is that American farmers shall abandon their present system of widely distributed, separate homesteads and segregate themselves in some kind of central farm village. Various actual and ideal types of such communities present themselves, some of which deserve attention.

The European form of farm village is generally thought of when the proposal in question is considered. European farmers almost universally live in small segregated communities, proceeding from these during the daytime to prosecute their agriculture on the outlying farms. In America, also, is to be found a few types of agricultural village. In various sections of the United States immigrant Mennonites have established themselves in such communities, very largely reproducing here the customary European prototype. The most indigenously American farm village is to be found among the Mormon settlements of the western portion of the United States and Canada. When the Mormons settled Utah they designated an agricultural community somewhat peculiar to themselves. The Mormon settlers and recruits were to settle in centers, all of which were built from a common plan. Each village resident had a considerable plot of land surrounding his house, another plot of a few acres just outside the center, a still larger piece still farther removed, and might have more land still farther distant. The dwellings are characteristically arranged relative to each other to secure family privacy. A further important characteristic is that the church is the center of community interest and lies at the foundation of the Mormon farm village plan. (For a more extended account of the Mormon farm village, see the writer's *Constructive Rural Sociology*, second edition, pp. 61-4.)

Besides these existent types of agricultural villages, a strictly cooperative farm village community has been urged. It is proposed that not only dairies and creameries, but also laundries, kitchens, dining halls, and all phases of domestic and distributive economic business should be cooperative.

These plans of and proposals for farm villages possess both interest and value, nevertheless they are confronted by several obstacles and objections. First, the great majority of American farmers have much capital invested in houses, barns, other buildings, orchards,

and other home equipment on their separate allotments of land. To make a change to such a completely different system of living as the farm village represents would involve the destruction of much of the capital so invested and the incurring a large removal expense. The economic loss involved in the proposal is so heavy that we cannot expect seriously to see it executed.

Second, to the average farmer it would seem a costly inconvenience to drive daily several miles to carry on his farm work. Where farms are small, as most of them are in Europe and to a less extent in the irrigable sections of the United States, the distances to the outlying land are not great. But the average size of farms in the United States is 138 acres. Were the farm village large enough to be of any great social advantage it should contain probably 100 families. This being so, in a district composed of average sized farms, the more remote farms would be about four or five miles removed from a centrally located village. This would mean a daily drive of eight or ten miles, which is practically prohibitive because of the economic loss involved.

Third, a small village of the usual type possesses questionable advantages, socially, when compared with open country communities. Without the fuller social life, intellectual interests, ideals, and resources of the larger urban aggregations, the petty gossip, jealousies, and bickerings are not conducive to increased satisfaction or a higher existence. The paucity of recreational and amusement facilities, the almost entire absence of those of a wholesome kind, especially for boys from ten to sixteen years of age, engenders idleness and the resorting to vicious gangs and forms of sport which are demoralizing. The average small village in the United States represents one of the most deadening and disheartening forms of community, and, as a problem, challenges the serious attention of the American nation.

The suggestion of a cooperative form of farm village is worthy of consideration. That the scheme is Utopian should not condemn it in advance. Its real test is, can it overcome the difficulties just presented relative to farm villages in general?

In the case of the establishment of new agricultural communities, especially in irrigation districts where farms are small, the cooperative proposal is most deserving of attention. Aside from these relatively infrequent situations, the heavy investment in separate farm plants and the remoteness of the majority of farms from the central village would appear to make the proposal impracticable.

In view of these considerations we may regard our present system of distributed and separate farm homesteads as permanent, and

are forced to conclude that the mitigation of rural isolation must come from other directions. In this connection it is worthy of note that in agricultural Utah there is an observed tendency toward independent farm homes. From the top of the divide between Cache and Salt Lake valleys in Northern Utah it is seen that in the former valley, which was settled very early, there is an occasional homestead in the open country while in the northern portion of the former, a region settled more recently, separate farm homes appear to be the rule.

VALID SUGGESTIONS

There is little consolation to be found in picturing the socialization of rural life by revolutionary methods. Society in general makes its advances by easy stages. Time seems to be abundant for the operation of cosmic forces and, in most respects, social development resembles cosmical evolutionary processes. Types of social life persist almost unchanged from generation to generation and communities of a given kind undergo transformations slowly, keeping well within the confines set by their nature. Rural communities must be expected to continue essentially as they are, with the exception of some necessary and useful readaptations to meet the rising demands for a larger and richer associational life. Probably few or no brand-new agencies will be created to meet the more pressing needs but there will be an adjustment and expansion of the means that rural society now possesses.

First, considerable may be expected from the improvement and extension of the rural communicating system, including under this caption roads, rural delivery, automobiles, interurban trolleys, telephones, and periodical literature. Each of these agencies is making its contribution toward the establishment of a more effective rural solidarity and also toward bringing country and urban districts into closer touch.

Improved and extended roads are essential to the development of the economic interests of agriculture and are the indispensable foundation for all larger community organizations and activities. The larger organizations which the improved rural church, the consolidated school, farmers' clubs, and recreational and community centers are demanding can materialize only as the highways are built to permit rapid and comfortable transit.

The automobile and rural delivery are serviceable in creating larger contacts and in stimulating the building of a better highway system. Where population density warrants the establishment of rural free delivery of mail, rural routes are assigned by the national

government on condition that the routes to be used in carrying the mail shall be put and kept in passable shape. Organizations and individuals interested in the extended use of the automobile are promoting both local and inter-community highway improvement. Since so many farmers have become owners of cars, they have the more heartily joined the movement for the establishment of good roads.

The automobile quickens rural life by bringing families and communities into closer and more frequent contact. Distances which once took hours or days to compass by horse or horse-drawn vehicle, now are covered in a few minutes or hours. Could every farmer possess an automobile, the problem of establishing larger and better rural institutions in considerable measure would be solved because transit would be speedy and easy and because the care of teams involved in travel by horse-drawn vehicles would be obviated.

Rural free mail delivery and the circulating library are effective agencies for reducing isolation. The former places within reach of out-of-town residents the possibility of daily contact with the world of events by means of the daily press; makes possible more frequent correspondence with friends and relatives; and helps cultivate a habitual perusal of periodical and library literature. In its turn the circulating library brings to neighborhoods which command its services the enlivening store of fiction, the inspiration of good literature, and the practical knowledge of the whole range of natural and social science.

Social contact is more than the association of human beings in the flesh. Much of the face-to-face give and take between individuals, while measurably demanded by nature and highly satisfying, is likely to be empty and of little ultimate worth. While a somewhat similar objection may be raised against promiscuous reading, good reading does make possible a touch with vital affairs and a sympathetic understanding of current, important movements. Society is psychical in its nature; its binding ties and relations are non-material; it is made up of the mental elements which relate human beings in a somewhat enduring manner. Consequently some of the most fundamental advances toward socializing rural life are to be effected by that wider and deeper reading which reveals the more significant truths about collective humanity and brings the individual into touch with the great currents of life.

Second, a definite local communitization of rural districts constitutes a further method of mitigating rural isolation. Communitization takes place to the degree to which the inhabitants of a particular locality think and act together, the alternative, individualization being most often observed in the country, in that residents

of such locality think and act as if they were only individuals. It is highly desirable that people generally, and rural inhabitants especially, should cultivate a neighborhood outlook, appreciate the good results which flow from increased cooperation, and set about establishing the agencies for realizing the community spirit.

A great deal needs to be said about the cultivation and education of the social mind of rural districts as the means of realizing an effective socialization and as a consummation of such process. It may be said that socialization of country life has been accomplished when and where the social mind of the inhabitants has been prepared adequately. Students of social psychology are convinced that no great object or ideal for society can be realized until the collective mind has been aroused, informed, and molded in the direction of the desired goal. Intelligent leaders are a great asset to a cause but perhaps their greatest function is that of developing among the masses a sympathetic point of view. There are at least two classes of leaders, those who collect, organize, and interpret the facts of rural communities, and those who carry the results of that work directly to the people. The former workers really determine the direction rural progress shall take by establishing a reasoned basis of interpretation and of undertaking. The function of the other set of workers is that of propagandist and disseminator, a very indispensable service.

It is imperative that there shall be many institutions that train missionaries for rural service and that there shall be multitudes of such agents to come into direct contact with the farming families thruout the United States. Let the original students of rural life establish and expound the doctrine of socialization of country life by printed page and lecture. Then let all the seminaries that send out preachers, all the normal schools that educate teachers, all the agricultural colleges that train county agents and instructors in agriculture and domestic science for their work, and all agencies which prepare and send speakers and lecturers into the rural field emphasize the doctrine and with it discipline the minds of their candidates for country work. Only by such a thoroughgoing process of education and dissemination can the fundamental social institutions of rural communities be reached, and community outlook, life and cooperation be established as second nature in the minds of the people. "As a man thinketh in his heart, so is he," and as the social mind of community and nation is formed and constituted, so its achievements and realizations will be. In conclusion, it is not too much to say that all mitigation of rural social isolation depends on and awaits the education of the rural social mind.

Some Reasons Why North Dakota Should Adopt the Uniform Sales Act

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E. HOW THE PROVISIONS OF THE UNIFORM SALES ACT WOULD IMPROVE OUR NORTH DAKOTA LAW

I. A STEP TOWARD UNIFORMITY WITH THE LAWS OF OTHER STATES

1. AGREEMENT WITH THE GREATEST WEIGHT OF AUTHORITY. It has already been briefly indicated⁶¹ how our law in North Dakota is defective from lack of uniformity with the laws of other states. The remedy proposed is to adopt the Uniform Sales Act. The Act has already been adopted in a considerable number of states.⁶² Complete uniformity with the laws of all other states by this simple means is as yet unattainable, the Act not yet having been everywhere adopted. It has been adopted already, however, in a sufficient number of states to constitute the largest mass of authorities in agreement on the questions dealt with to be found in the country. The states which have adopted it all now have the same rule of law on the questions involved. On those questions many other states have each some local law. On the whole, that law often agrees with the rules in the Uniform Sales Act,⁶³ but it is not always the same on all points.⁶⁴ Moreover, the laws of the states which have not adopted the Uniform Sales Act, where they differ from the rules

61. See the previous article, Quarterly Journal of the University of North Dakota, Oct. 1916, at pages 60-61.

62. See page 57, previous article.

63. The Uniform Sales Act being a careful codification of the common law generally prevailing, the rules of law therein express accord with much actual case law in the various states thruout the country.

64. So, especially, in regard to the questions on which there is much division of authority, the local law may not always be the same as that express in the Act.

in that Act, may differ diversely in the different states.⁶⁵ If the law of a particular state is not in accord with the Uniform Sales Act, it does not follow therefore that its position is supported by the laws of the other states which have not adopted the Act. Many of them may agree with the rule in the Uniform Sales Act on that particular point, while those that disagree scatter in several directions. Adoption of the Uniform Sales Act in North Dakota would therefore place our law, in so far, in accord with the largest unified body of law on the subject prevailing at the present time in the country.

2. INCREASE OF UNIFORMITY EVERYWHERE. It should not be forgotten, moreover, that the adoption of the Uniform Sales Act in North Dakota is in this respect more than a local matter. Inconveniences to us arise from differences between our law and the laws of other states.⁶⁶ Partly as a step toward removing those inconveniences, let it be assumed that we adopt the Act. By adopting the Act we not only remove our own inconveniences in that respect, but also remove, in so far, the inconveniences of those with whom we deal in other states. All have suffered from the inconveniences arising from the same cause, lack of uniformity. If that cause is removed, it relieves everyone concerned, and enables business with others to be carried on more satisfactorily all around. By removing the lack of uniformity here, therefore, we not only improve our own law in this respect, but contribute a part toward improving the law of every other state, and reap the reward of more satisfactory dealing with those with whom we do business thruout the country.

3. UNIFORMITY IN DEALING WITH PRECEDENTS. A further consideration in regard to the effect of the adoption of the Uniform

65. A ready example is afforded by the different views adopted in different jurisdictions as to whether title passes when the price of the goods yet remains to be determined by some further act such as weighing or mesuring. In some states it is held that there is a presumption in such cases that title was not intended to pass even when the weighing or mesuring was to be done by the buyer. See 128 Ala. 221, 29 So. 640; 82 Me. 570, 20 Atl. 237. In other states it is held that there is such a presumption only if what remains to be done is to be done by the seller. See 102 Ky. 165, 43 S. W. 222; 72 Minn. 159, 162, 75 N. W. 1. In many states it has been held that there is such a presumption if the price still remains to be ascertained, the court not adverting particularly to the question of who is to do the weighing or mesuring. See 25 Ark. 545; 90 Ind. 268; 21 Ia. 508; 57 N. H. 140; 32 Ore. 377, 30 Pac. 495; 36 S. C. 69, 15 S. E. 344; 45 Vt. 124; 14 Wash. 315, 44 Pac. 544; 41 W. Va. 481, 23 S. E. 800; In still other states it is held that there is no presumption at all as to whether or not title is intended to pass, from the mere fact that weighing or mesuring to determine the price still remains to be done. See 107 Cal. 348, 40 Pac. 534; 69 Tex. 128, 6 S. W. 402. This position was also taken in New York before the Uniform Sales Act was adopted there (116 N. Y. 371, 22 N. E. 404; 174 N. Y. 534, 66 N. E. 1104), and is the position adopted in the Uniform Sales Act, section 19, now in force in a considerable number of states. As to the authorities on this question at common law, see, further, Williston on Sales, sec. 269, and Mechem on Sales, secs. 515-532.

66. See above, pp. 60-61.

Sales Act toward bringing about uniformity with the laws of other states may be mentioned. The decisions of the courts of a number of states on questions arising in regard to sales are already being rendered under the Uniform Sales Act. Without the Uniform Sales Act yet adopted here, can anyone tell what weight to attach to those decisions as authorities when they are cited to our courts as against conflicting decisions on similar facts from states where the Act is not in force? If the Uniform Sales Act were adopted in North Dakota, this question could present no difficulty, since the Act itself contains an express provision⁶⁷ to take care of the question of what weight is to be given to decisions under the Sales Act in other states.⁶⁸

II. A GREATER MESURE OF CERTAINTY

Much more important, as a local matter, than securing uniformity with the laws of other states is the question of securing certainty in our local law.⁶⁹ The ordinary litigation in our courts is usually between local people in regard to local transactions. For every instance of difficulty on account of lack of uniformity with the laws of other states in regard to sales, there are many instances of difficulty because the local law of sales is too uncertain. It is not here contended that absolute certainty can be attained. All legal history belies any such possibility. As controversies arise and new situations are presented, courts will be needed to apply the law. It is submitted, however, that the adoption of the Uniform Sales Act would definitely settle many unsettled questions in our local law, to that extent render it more certain, and thereby reduce the need for so frequent and long continued litigation.

A comparison of the present position of our law with the provisions in the Uniform Sales Act will demonstrate that in many respects the prevailing uncertainty may be reduced to greater certainty. The discussion to follow assumes that it is desirable to have rules of law definite and settled,⁷⁰ and is confined to showing the more important particulars in regard to which the Uniform Sales Act is more definite and certain than our present Code. Within the limits of this examination no attempt can be made to discuss at length the merit of the particular rules of law contained in the Uniform Sales Act where our Code has no rules at all, beyond noting the fact that they are neither new nor startling, being based on

67. See Uniform Sales Act, sec. 74.

68. As to how sec. 74 has fared in the courts, see below, notes 108 and 120.

69. See above, pp. 61-69.

70. See above, pp. 67-69.

common-law development in actual litigation. For extended discussion on the merits of each particular rule embodied in the Uniform Sales Act the interested reader must be referred to the treatises on the law of sales.⁷¹

The Uniform Sales Act contains seventy-nine sections. Of these, more than fifty⁷² deal with matters in regard to which our present Code is entirely silent. Some thirty⁷³ deal in detail with matters on which the provisions in our Code take a more general and indefinite form without being inconsistent with the provisions of the Uniform Sales Act. Only a few⁷⁴ of the seventy-nine sections of the Act work substantial changes in the law already express in our Code. The correctness of these statements may be best demonstrated by a little prosaic attention to each of the sections in turn.

1. SPECIFIC PROVISIONS ON MATTERS IN REGARD TO WHICH OUR PRESENT CODE IS SILENT. a. *Acceptance under Statute of Frauds.* Section 4, (2) and (3),⁷⁵ codify the results of much litigation under the Statute of Frauds, as to what is "goods" and what is a sufficient "acceptance" to satisfy the statute. The Statute of Frauds, as passed in England in 1677, required, among other things, that for a sale of goods to be enforceable there must have been acceptance, etc., or a memorandum in writing, if the price was over \$50. Our Code substantially re-enacts the old statute in these respects, without affording much assistance as to this question under it which has led to so much litigation, tho one of our local cases⁷⁶ has reached a result substantially in accord with the rule in the Uniform Sales Act.

b. *Partial Loss or Deterioration.* Section 7 (2) provides a definite rule as to how the rights of the parties are to be adjusted in case they have purported to sell specific goods, but the goods without the seller's knowledge have partly perished or greatly deteriorated. This situation has led to considerable difficulty at common

71. See, for example, Mechem on Sales (2 vols.), Burdick on Sales, Tiffany on Sales, and Williston on Sales. The last mentioned, Williston on Sales, is the best adapted work for use in connection with the Uniform Sales Act, since the material is collected and arranged appropriately under each section of the Act.

72. See pages 126-133 of this article.

73. See pages 133-135 of this article.

74. See pages 145-151 of this article.

75. As references may be freely made to our Code in any copies of the Compiled Laws of North Dakota (1913), no attempt will here be made to reproduce at length all its language. Similarly, as references may be made to copies of the Uniform Sales Act, it is unnecessary to waste space by repeating its provisions here, except so far as is necessary for clearness of expression. The references to our Code, in this paper, are to the edition of 1913. The references to the Uniform Sales Act are to that Act as recommended by the Commissioners and as appearing in Williston's treatise.

76. 3 N. D. 76, 54 N. W. 228.

law,⁷⁷ and is not provided for in our present Code. Section 8 deals with similar questions involving similar difficulties where there is a contract to sell specific goods, a situation equally unprovided for in our Code.⁷⁸

c. *Effect of Conditions.* Section 11 deals with the effect of conditions in a contract to sell or a sale, and distinguishes them from warranties, which, in the proper usage of this terminology, are promises.⁷⁹ This inquiry is untouched in our Code.

d. *Warranty.* Section 14 (4) contains a well established rule at common law, that in a sale of a known described and definite article there is no warranty of fitness for any particular purpose.⁸⁰ On this matter our Code is silent. Section 15 (5) specifies that a warranty of quality may be annexed by the usage of trade. It would seem as if this result would be universally accepted on common-law principles of contract, the usage showing what the intention of the parties, if called to the matter, must have been. Unfortunately, the actual litigation on the question has led to much disagreement.⁸¹ On this question, too, our Code is silent. Section 15 (6) settles the question that an express warranty does not exclude an implied warranty unless inconsistent. This is in accord with the better view at common law, there being nothing in the mere fact that a promise in regard to one matter is exacted to indicate that other promises which would be understood in the ordinary course are thereby excluded. On this question, however, there is much conflict of authority in the cases⁸² and on it, again, our Code is silent. Section 16 (c) establishes the wholesome rule that the warranty in a case of a sale by sample implies not merely that the goods are like the sample, but that where the seller is a dealer in that kind of goods they are free from defects rendering them unmerchantable which would not be apparent on a reasonable examination of the sample. Common-law authorities support this view⁸³ but on it there is nothing in our Code.

e. *Rules for Ascertaining Intention.* Section 19 contains a number of definite rules for ascertaining the intention of the parties,

77. Williston on Sales, sec. 162, Mechem on Sales, sec. 199.

78. See 129 U. S. 101, 9 S. Ct. 255, 32 L. ed. 636; 94 Mich. 127, 53 N. W. 929; 53 Minn. 199, 54 N. W. 1110.

79. This feature is elaborately explained in Williston on Sales, secs. 180-181.

80. 157 U. S. 94, 15 S. Ct. 503, 39 L. ed. 632; 175 Ill. 631, 51 N. E. 587; 78 Kans. 206, 91 Pac. 179; 32 Minn. 371, 30 N. W. 359; 189 Mass. 344, 75 N. E. 624.

81. See for example, 10 Wall. 383, 19 L. ed. 987; 5 N. Y. 95, 55 Am. Dec. 321; 20 Pa. St. 448; 87 Ill. 547; 20 N. H. 384; 4 Taunt. 847.

82. Williston on Sales, sec. 239 and Mechem on Sales, secs. 1259-1260 cite numerous authorities on each side of this proposition.

83. L. R. 4 Ex. 49; L. R. 7 C. P. 433; 12 A. C. 284; 151 N. Y. 433, 45 N. E. 356, 37 L. R. A. 799.

where there is nothing in the transaction showing it affirmatively, as to whether title is to pass. This is a matter upon which there is an immense amount of conflicting litigation.⁸⁴ It is a matter, too, which is of supreme importance, since, very often, the parties do not think particularly about just exactly at what moment they want title to be transferred, but that fact later turns out to be decisive as to their rights when the goods have been lost or deteriorated before the parties have entirely completed their transaction. In such cases, of course, the loss, unless otherwise stipulated, or shifted by the fault of either, must fall upon the one who was owner when the loss occurred. As they did not arrange particularly about the matter before, after the loss occurs each is likely to insist that the other was the owner who now must bear the loss. The general rule is recognized that title passed in a sale if the parties intended that it should, but without affirmative evidence on what that intent was, when the question has to be decided between two parties, presumptions must be resorted to. What those presumptions are to be, in different circumstances commonly arising, it is needful to have definitely specified in order to be able to settle such common cases without too much long-continued and expensive litigation. The Uniform Sales Act here specifies them, while on what they are to be there is in the cases much conflict of authority and in our Code there is nothing at all.

f. *Mercantile Theory of Documents of Title.* Section 20 (2), (3), and (4), and sections 27-40; This series of provisions establishes the law of documents of title—i.e., bills of lading and warehouse receipts, in accordance with what is called the "mercantile" theory, as opposed to the "common-law" theory of such documents. Both theories have much support in decided cases, tho the mercantile theory is probably becoming more firmly established while the common-law theory is waning.⁸⁵ By the so called common-law theory of documents of title the form of the document is prima facie evidence of who has title to the goods for which the document was issued. Other circumstances may, however, by this theory, be brought in to contradict the document and show that title to the goods was really elsewhere than in the persons indicated by the document, just as other circumstances than possession may show that title to ordinary chattels is in others than the possessor. Such a process, always permissible when the question is raised only between

⁸⁴. See footnote 85.

⁸⁵. This is especially true since the mercantile theory was adopted in the Uniform Sales Act, the Warehouse Receipts Act, and the Bills of Lading Act, and these Acts have been adopted in more and more states.

the original parties, if still permissible after the document has been transferred to a purchaser for value in good faith without notice, makes such documents unsatisfactory as commercial documents on the faith of which to advance money. To facilitate the use of such documents in the business world, either for use as security for advances while the goods are in transit, or for ready sale of such goods in the interim by a negotiation of the document, the document itself must be more conclusive. By the mercantile theory of documents of title, adopted in many courts, therefore, the form of the document is conclusive and transferees may take it relying on the showing it presents as to who is the owner. By this means a great deal of business can be done without the necessity of tying up during the period of transit the amount of capital represented by the value of the goods shipped. The considerations applying here for making these documents more negotiable are thus analogous to those applying in the case of ordinary commercial paper—i.e., bills, notes, and checks. While our Code, in sections 6210-11, has purported to make such documents negotiable, the language is very general and is just like similar language in statutes of many other states which have been so narrowly construed that their effect is to leave the documents transferable, as under the common-law theory, but not negotiable in the sense of protecting a transferee for value without notice beyond the protection extended in a similar transfer of ordinary chattels.⁸⁶ Our local law on the subject, without decided cases in point, is therefore inconclusive. In order to establish the negotiability of such documents of title in accordance with the mercantile theory, to make it safe to advance money on such bills of lading, we need the specific provisions carrying this doctrine into effect which are contained in the Uniform Sales Act.⁸⁷

g. *Auctions.* Section 21 (1) states, in statutory form, what is abundantly clear on principle and authority,⁸⁸ that where goods are put up for sale by auction, in lots, each lot is the subject of a separate contract of sale. On this point our Code is silent.

h. *Sale by a Person not the Owner.* Section 23 (1) states the fundamental doctrine of the law of property that no one can give

86. 101 U. S. 557, 25 L. ed. 892; 102 Minn. 147, 112 N. W. 1030, 1049; 99 Ala. 130, 12 So. 563; 54 Ark. 244, 41 S. W. 308; 18 Wash. 268, 51 Pac. 461; 29 Wis. 482. In a few cases a wider construction of such statutes has been given. See 118 La. 254; 53 Md. 612.

87. For detailed examination of the merits of each of the sections of the Uniform Sales Act bearing on the mercantile theory of documents of title and the authorities involved in regard to each, see Williston on Sales, secs. 405-444.

88. See 2 Taunt. 33; 124 Mass. 38; 94 Mo. 370.

what he has not. This doctrine is assumed⁸⁹ but nowhere expressly stated in our Code.

i. *Sufficiency of Delivery.* Section 43 (3) provides a definite rule as to what is to be regarded as sufficient delivery in case of sale of goods now in the possession of third parties, a question which has caused considerable confusion.⁹⁰

j. *Delivery of Wrong Quantity.* Section 44 provides definite rules as to how the obligations of sellers and buyers are affected by delivery of a wrong quantity of goods. Definite rules, ascertainable in advance of litigation, to enable parties to adjust their dealings and controversies are in this particular very important, since it very often happens that the amounts delivered or tendered do not tally exactly with the amounts bargained for, and it is the uncertainty as to the legal effect of such discrepancies that leads to controversy and often leads to long-continued and expensive litigation. On this, again, our Code is entirely silent.

k. *Delivery in Installments.* Section 45 provides, in statutory form, a rule applying generally to contracts, what is the effect of delivery in installments. As the question is one involving the inquiry what is the contract the parties have made, the general rules stated are likely not entirely to do away with disputes as to their application.⁹¹ Even granting that, however, it is better to have a rule to go by in disposing of such cases than to have to find a rule only at the end of a long course of litigation, as is now necessary in North Dakota, our Code being entirely silent on the question of delivery in installments under a contract to sell or a sale.

l. *Right of Inspection.* Section 47 (3) establishes that where the carrier is to collect on delivery of the goods the buyer has no right of inspection until after he has paid. This provision is in accord with decided cases⁹² but we have nothing on the point in our local law in North Dakota.

m. *What Constitutes Acceptance.* Section 48 defines what constitutes acceptance of goods under a contract of sale, as intimation of acceptance, exercising acts of ownership, or retaining the goods. The inquiry whether the buyer has accepted the goods often becomes material, both under the Statute of Frauds, as a satisfaction of the statute, and under any inquiry whether the contract has been

89. See, for example, sec. 5508 of Compiled Laws, 1913.

90. See the discussion and authorities cited in Williston on Sales, sec. 454.

91. For some litigation under these rules, see below, footnote 120.

92. 46 Ia. 210.

performed. It is therefore desirable to have the law settled in regard to what amounts to acceptance of the goods under the contract of sale. Here, again, our Code is silent, but the Uniform Sales Act contains a definite rule which may be ascertained in advance of litigation.

n. *Acceptance as Related to Action for Damages.* Section 49 provides that acceptance of the goods does not bar action for damages if the goods do not correspond with the requirements of the contract. It thereby settles this question which is involved in much conflict of authority at common law. The North Dakota cases which we have on the question are in accord with the view adopted in the Uniform Sales Act.⁹³

o. *Wrong Delivery.* Section 50 expresses a well-settled rule at common law, that the buyer is not bound to return goods wrongly delivered.⁹⁴ Our Code, however, is silent on the question. Similar remark may be made on section 51, covering the buyer's liability for failure to accept delivery.

p. *Definition of Unpaid Seller.* Section 52, definition of unpaid seller, is new to our Code. It is defined in the Uniform Sales Act for the sake of accuracy in dealing with the subsequent sections, giving the remedies of an unpaid seller.

q. *Lien after Part Delivery.* Section 55, providing for the unpaid seller's lien after part delivery, covers an important matter in regard to which the Code is silent.

r. *When Lien is Lost.* Section 56, providing how the unpaid seller may lose his lien, by delivery, waiver, etc., is also a specific provision in accordance with common-law principles and authority on matter in regard to which our Code is entirely silent.

s. *When Goods are in Transit.* Section 58, defining in detail when goods are in transit for the purposes of the law of stoppage in transit, is very much more complete than our Code, based on decided cases⁹⁵ involving various circumstances not dealt with in our Code at all.

t. *No Right to stop against Transferee of Documents for Value without Notice.* Section 59 (2) affirmatively provides that the bona fide transferee for value of an order bill of lading after an unpaid

^{93.} See 5 N. D. 432, 67 N. W. 208; 11 N. D. 262, 91 N. W. 70.

^{94.} See, for example, 161 Mass. 576, 581, 87 N. E. 742; 65 Ill. 512; 115 N. W. 636 (Minn.).

^{95.} See the extended discussion and numerous authorities cited in Williston on Sales, secs. 523-539.

seller's notice to the carrier to stop the goods is to be protected. This is in accord with the mercantile doctrine of bills of lading, already set out in sections 27-40. On this question we have nothing definite in our Code, nor have we local cases on the subject.⁹⁶

u. *Effect of Sale of Goods Subject to Lien or Stoppage in Transit.* Section 62, in providing that a sale of the goods by the buyer while they are in transit shall not cut off the seller's right to stop them, is stating a generally accepted rule⁹⁷ about which, however, our Code is silent. The last part of the section, protecting the transferee of an order bill of lading under such circumstances, while involved in some conflict of authority at common law,⁹⁸ expresses the correct view on principle, in accordance with the mercantile theory of bills of lading adopted in the Uniform Sales Act.

v. *Action for the Price.* Section 63 (2) expresses what is undoubted common law,⁹⁹ tho our Code is silent on the subject, that if the contract makes the price payable on a day certain, irrespective of transfer of title or delivery, the seller may recover the price, according to the terms of the contract, unless he manifests inability to perform or shows an intention not to perform. Such contracts are rare, apart from contracts of conditional sale, which are well known and constantly enforced by the courts.¹⁰⁰

w. *Remedies for Breach of Warranty.* Section 69, consisting of various subdivisions, specifies far more completely than our Code what are the buyer's remedies for the seller's breach of warranty. Yet, with the exception of one subdivision, (1) (d), it is consistent with the general provisions found in our Code in Sections 7157-9. In parts it goes into much detail in regard to features as to which our Code is entirely silent, as in subdivisions (3), (4), and (5). In regard to subdivision (1) (d), which works a change in our Code, see below.¹⁰¹

x. *Effect of Uniform Sales Act on Right to Recover Interest and Special Damages.* Section 70 contains the provisions that the enactment of the Uniform Sales Act shall not affect the right to recover interest or special damages in any case where by law they may be recoverable. This is to guard against any undesigned change

96. See footnote 51, previous article.

97. See, for example, 111 Mass. 490; 108 N. Y. 333, 13 N. E. 292.

98. See footnote 51, previous article.

99. See, for example, 154 Mass. 514.

100. Conditional Sales are recognized as a matter of course in North Dakota, as they are in other states generally. See 11 N. D. 198, 91 N. W. 89, 31 N. D. 608, 123 N. W. 251.

101. See p. 146.

in other parts of the law as a consequence of the enactment of the Uniform Sales Act.

y. *Interpretation.* (1) *General Provisions.* Sections 71-73 contain various rules of interpretation of the Act itself, quite in accord with accepted principles. Section 75 provides that the provisions of the Uniform Sales Act are not, unless so stated, applicable to mortgages. It was thought best not to attempt to deal with the peculiar rules of mortgage law as such in connection with the Uniform Sales Act, but to leave them to be dealt with, if so desired, by independent legislation.

(2) *Interpretation to secure Uniformity.* Section 74 provides that the Uniform Sales Act is to be so interpreted as to give effect to the purpose of uniformity. This principle is indispensable if the purpose of uniformity is to be consistently carried out,¹⁰² and has already won recognition from several courts¹⁰³ among them the Supreme Court of the United States.

(3) *Definitions.* Section 76 provides a considerable list of definitions of terms used in the Act itself. In this respect the Uniform Sales Act follows the example set in the National Bankruptcy Act, in the Negotiable Instruments Law, and in other statutes, defining its own terms, so far as possible, to prevent confusion as to what they mean. In regard to these definitions in the Uniform Sales Act little or no question has been raised, except in the case of the definition of "value," the effect of which is considered below.¹⁰⁴

2. PROVISIONS MAKING MORE SPECIFIC VARIOUS MATTERS ALREADY CONTAINED IN OUR CODE IN A MORE GENERAL AND INDEFINITE FORM. Lack of adequate space in an article of the present character does not permit any detailed discussion of the merits of these provisions. For such discussion the reader is referred to the treatises. Such detailed discussion is here unnecessary, too, for recommending the Uniform Sales Act for adoption in North Dakota, since the matters in the following sections we have already. The Uniform Sales Act, in dealing with them, is better, however, since its provisions are more specific and therefore easier of application and better avoid litigation.

What the provisions are which substantially correspond may best be indicated by bringing them together in parallel columns. Where the provisions of the Uniform Sales Act not only make more

102. See Williston on Sales, sec. 617.

103. See footnote 120, for cases decided under sec. 74 of the Uniform Sales Act.

104. See page 153.

specific what is already express in general terms in our Code, but set out rules of law on matters in regard to which our law is silent, they have in the main been already dealt with above.¹⁰⁵ Where they produce or are likely to be alleged to produce affirmative changes in our law, they are dealt with below.¹⁰⁶ The following presentation of corresponding similar provisions is believed to be substantially correct, it being understood that the provisions of the Uniform Sales Act are usually more specific.

NORTH DAKOTA COMPILED LAWS, (1913)	UNIFORM SALES ACT
Sec. 6004	Sec. 1 and 9
" 5885-6	" 3
" 5962	" 4 (2)
" 5535	" 6
" 5951 and 5956	" 5
" 5854 and 5868	" 7 (1)
" 6005	" 9 (2)
" 5878	" 9 (4)
" 5982	" 13 and 14
" 5973	" 12
" 5987	" 13
" 5975	" 13
" 5974	" 15
" 5981	" 15 (1) (2)
" 5976	" 16 (a)
" 5535	" 17 and 18
" 6210-11 (part)	" 20 (1)
" 5996-97-99	" 21 (2)
" 6000	" 21 (4)
" 5969	" 22
" 7221 (part)	" 26
" 6209-11	" 27-29
" 5989	" 42
" 5969	" 43 (1)
" 5968	" 43 (1)
" 5967	" 43 (2) and (5)
" 5970	" 43
" 5972	" 43 (4)
" 5971	" 46
" 5990	" 47
" 5965	" 53 and 54
" 6864	" 54
" 6864 and 6881	" 53 (2)
" 6881	" 57
" 6883	" 58
" 6884	" 59

105. See pages 126-133.

106. See pages 144-154.

Sec. 5966	Sec. 61 (1), 65
" 5936	" 61 (2)
" 7155	" 63 (1)
" 7146, 7156	" 64
" 7191—7193	" 68
" 7157—7159	" 69 (6) and 69 (7)

3. PROVISIONS EMBODYING THE RULES CONTAINED IN OUR CODE IN SUBSTANTIALLY THE SAME FORM. Comments on these provisions are for the present purpose obviously unnecessary. The provisions need only be brought together in parallel columns.

NORTH DAKOTA COMPILED LAWS, (1913)	UNIFORM SALES ACT
Sec. 5950, 5952-55	Sec. 1
" 5966	" 53 (a), 53 (d)
" 6881	" 53 (b), 57

4. PROVISIONS MAKING SUBSTANTIAL CHANGES IN OUR CODE. These provisions are few in number. The changes they make are dealt with below¹⁰⁷ showing that in most cases these changes are not radical but are in accord with common-law principles and are usually desirable changes to make even on their own merits.

From this survey of the principal provisions of the Uniform Sales Act which give us definite rules of law where our present Code is silent or indefinite, it is easily apparent that the enactment of the Uniform Sales Act would greatly tend to make our local law more certain. True, we have not only the Code but also reports of decided cases in North Dakota, but in regard to most of the rules dealt with in the Uniform Sales Act our Supreme Court has not yet spoken.¹⁰⁸ We are usually constrained to rely either on the Code we have, which is often inconclusive or silent on the question in hand, or we must rely on the common-law authorities generally, which are usually more or less conflicting, necessitating our litigating every point anew and appealing it to the Supreme Court for final decision. The enactment of the Uniform Sales Act, which is a definite codification of common-law results, would therefore give us not only greater certainty than we have in our present Code, but also greater certainty than we could hope to attain thru our case law even by many years of continuous litigation.

107. See footnote 106.

108. See page 62, previous article.

F. OBJECTIONS TO THE ADOPTION OF THE UNIFORM SALES ACT ANSWERED

I. OBJECTIONS BASED ON DISTRUST OF CODIFICATION

1. IN GENERAL. The average lawyer, trained under our common-law system, is apt to be imbued with a sort of instinctive distrust of codification, which, when analyzed, is found to rest upon some conviction that codification makes the law too rigid and projects the moribund ideas of the time over future generations.¹⁰⁹ For the purposes of this article the correctness of such views in regard to codification need be neither affirmed nor denied. Living under the Field Code, which is a crude codification, we suffer already whatever evils of this nature codification is calculated to bring about. Lawyers and judges in trial practise, however, constantly lean on the Code as now existing, and show no disposition to abandon it as a practical guide in litigation. The ordinary citizen who is not a lawyer, far from being averse to the principle of codification, welcomes the project as a step in reducing the law to certainty, expecting thereby the more readily to adjust his conduct to conform to the law and thus avoid litigation. Whether the objections to codification are right or wrong, therefore, our local situation actually is that we have it, that our people approve it, that the members of our legal profession practise under and rely upon it, and that the objections to it are felt most strongly, not by our own people or lawyers who have experienced its effects, but by those who have been trained apart from the codes, whose actual experience with codified law is negligible, and whose views on the question are derived rather from academic reflection than from practical experience.

In view of our actual local situation, therefore, the fact that the Uniform Sales Act is an act of partial codification should rather commend than condemn it in the eyes of our people, while the fact that it is a thoro, improved, and up-to-date codification of the subject dealt with should, as a practical matter, commend it both to supporters of the principle of codification and to its opponents. Those who support the principle of codification can welcome the Uniform

109. For authorities on the effect of codification generally, see, especially, Savigny, *Von Beruf, Unserer Zeit für Gesetzgebung und Rechtswissenschaft* (On the Vocation of our Age for Legislation and Jurisprudence) against codification, and Austin, *Jurisprudence, Lecture 39*, in its favor. Also see Carter, *Law: Its Origin, Growth, and Function*, Lects. 11, 12. While the average lawyer who distrusts codification ordinarily has not precisely formulated his objections, they are usually based upon some one or more of the considerations dealt with at length by these writers and briefly adverted to in the text. For a bibliography of the literature of codification, see *Found's Outlines of Lectures on Jurisprudence*, Lect. XIV.

Sales Act as a new improvement upon the Code, a piece of machinery for the administration of justice which in their opinion has accomplished much good in the past and which will accomplish much more in the future. Those who object to the principle of codification may equally welcome the Uniform Sales Act as an improvement upon a code which in their opinion has already both made our law rigid and projected upon us the ideas of the past. Whether one is disposed to commend or to condemn the principle of codification, therefore, he may, where codification of a sort already is an accomplished fact, support the project for systematic thoro revision to bring the existing codification into accord with the law of the time.

2. DISTRUST OF THE PARTICULAR MESURE SUBMITTED.

Objections to the Uniform Sales Act may be raised on more practical grounds than mere distrust of the principle of codification. It may be objected that tho some codification of the law of sales might be desirable, yet that this particular Act, recommended by the Commissioners on Uniform State Laws, is defective on various grounds, a couple of which may here be briefly answered.

a. *In Operation will this Uniform Sales Act really Produce Uniformity?* Some have said that the Negotiable Instruments Law failed to produce uniformity and have asked the question: "Can any better be expected of the Uniform Sales Act?" While it may be granted that the Negotiable Instruments Law might in some respects be improved,¹¹⁰ it is generally conceded that its effect has been salutary,¹¹¹ that in many points it has produced uniformity,¹¹² and that nowhere among the states which have adopted it is there any thought of its repeal. In our own state the Negotiable Instruments Law has been in force for some seventeen years, no repeal is contemplated, and its effect has admittedly been, not only to make our law of negotiable instruments uniform with that of other states, but also to make our law of negotiable instruments more certain than it was before.¹¹³ If such salutary effects could be produced by the Negotiable Instruments Law, which was rather hastily drawn, without much consultation or extended criticism,¹¹⁴ much more may be expected of the Uniform Sales Act, which was drawn by an expert

110. See the Ames-Brewster controversy, in Brannan's Negotiable Instruments law.

111. See, for example, Domestic Commerce and Uniform State Laws, by S. R. Child, in "The Nation's Business," June, 1916.

112. See, for example, the provisions of the Negotiable Instruments Law, sections 85, 39, 124. Others with similar effect are mentioned in Brannan's Negotiable Instruments Law, (2nd. ed.), p. 164.

113. Comparison of the present code sections on Negotiable Instruments with those they superseded will amply bear out this remark, there being but few local cases as yet decided by our court.

114. See footnote 110.

after mature deliberation, and several times revised in the light of the most searching and intelligent criticism the country affords.¹¹⁵

A further consideration to show that the Uniform Sales Act actually produces uniformity is found in the section of the Act itself providing for its being so construed as to effectuate the general purpose to make uniform the law of those states which enact it.¹¹⁶ No corresponding provision is found in the Negotiable Instruments Law. This provision has already been acted upon by the courts and is upheld even by the Supreme Court of the United States.¹¹⁷

b. *Instead of Making the Law more Certain, will it make the Law more Uncertain?* It has already been shown above¹¹⁸ that on many points the Uniform Sales Act will give us definite rules of law where with our present Code and decided cases we have no certainty at all. Despite such a showing, however, it is sometimes contended that any attempt to codify the law will have precisely the opposite effect, to render the law more uncertain than ever.¹¹⁹ The argument to establish so strange a proposition is that tho the rule may be phrased in definite language, stated in so many words, its meaning in application only the courts can determine thru the process of litigation, and that until a line of cases under the formal rule has been developed no one can tell what the court will do, there being no cases showing what the court has already done under similar circumstances.

The answer to this argument as applied to the Uniform Sales Act, so far as it needs any answer, is three-fold. First, the Act was carefully drawn as a codification of already existing case law. It does not, therefore, introduce novel or peculiar doctrines in regard to which there is no way of forecasting what the position of a court, in the application of them to actual litigation, would turn out to be. There is nothing new or startling in the Uniform Sales Act, but its contents are based thruout on the results which have been worked out thru the courts in the process of actual litigation based upon the pre-existing and generally prevailing principles of the common law. The problem of forecasting from the past what a court should do in the future will therefore not be markedly different when new situations arise under the Uniform Sales Act from what it would be under the ordinary case law situation.

The second answer to the objection that the Uniform Sales

115. See above, p. 57.

116. Uniform Sales Act, sec. 74.

117. See footnote 103.

118. See pages 126-128.

119. Such is, for example, the argument in Carter, *Law: Its Origin, Growth, and Function*.

Act might render our law more uncertain rather than more certain is found in the course of decisions in the states which have already adopted it. In several states the Act has now been in force for a number of years. Litigation on the questions dealt with has often taken place. The courts have decided cases under the Act, have found no difficulty in applying it to actual litigation, and have experienced no difficulty in seeing what it means.¹²⁰

120. Of the considerable number of cases already decided under the Uniform Sales Act in states where it has been adopted, most of the cases involve no question of doubt as to the meaning of the statute, but are cases applying the law to the facts. Some citations, mostly gathered by Professor Williston, of cases under different sections of the Uniform Sales Act are for the sake of completeness here reproduced.

Section 4

Prested Miners Co. v. Garner (1910) 2 K. B. 776;
Goldowitz v. Kupfer, 141 N. Y. Supp. 531;
Willard v. Higdon, 91 Atl. 577, (Md.);
Peck v. Abbott & Fernald Co., 111 N. E. 890, (Mass.);
Davis v. Blanchard, 138 N. Y. Supp. 202;
McAusland v. Rieser, 90 Atl. 261, (N. J.).

Section 8

Automatic Time Table Advertising Co. v. Automatic Time Table Co., 94 N. E. 462, (Mass.).

Section 9

Cobb, Bates & Yerxa Co. v. Hills, 94 N. E. 265, (Mass.).

Section 12

Nelson Co. v. Silver, 145 N. Y. Supp. 124;
Debany v. Rosenthal, 152 N. Y. Supp. 1043;
Gascoigne v. Cary Brick Co., 104 N. E. 734, (Mass.).

Section 13

Carbolineum Wood Preserving Co. v. Carter, 50 N. J. L. J. 361;
 (N. Y. Munic. Ct.) commented on in 27 Harv. L. Rev. 287;
Dreisbach v. Eckelkamp, 83 Atl. 175, (N. J. L.).

Section 14

Lissberger v. Kellogg, 73 Atl. 67, (N. J.).

Section 15

Leiter v. Innis, 138 N. Y. Supp. 536;
G. B. Shearer Co. v. Kakoulis, 144 N. Y. Supp. 1077;
Wasserstrom v. Cohen, 150 N. Y. Supp. 638;
Kansas City Bolt Co. v. Rodd, 220 Fed. 750 (C. C. A.);
Pentland v. Jacobson, 155 N. W. 468, (Mich.);
Gearing v. Berkson, 111 N. E. 785, (Mass.);
Marx v. Locomobile Co., 82 N. Y. Misc. 468, 144 N. Y. Supp. 937;
Quemaponing Coal Co. v. Sanitary, etc., Co. 95 Atl. 986. (N. J.);
Ohio Electric Co. v. Wis. & Minn. L. & P. Co., 155 N. W. 112,
 (Wis.);
Bonwit-Teller v. Kinlen, 150 N. Y. Supp. 966;
Sure Seal Co. v. Losber, 157 N. Y. Supp. 327;
Matteson v. Legace, 89 Atl. 713, (R. I.);
Proctor v. Jacobson, 155 N. W. 468, (Mich.);
Proctor v. Atlantic Fish Co., 94 N. E. 281, (Mass.).

Section 16

Stewart v. Voll, 79 Atl. 1041, (N. J.).
Gascoigne v. Cary Brick Co., 104 N. E. 734, (Mass.).

Section 17

Isaacs v. MacDonald, 102 N. E. 81, (Mass.).

Section 18

Bondy v. Hardine, 102 N. E. 935, (Mass.).

Section 19

Automatic Time Table Adv. Co. v. Automatic Time Table Co., 94
 N. E. 462, (Mass.);
J. E. Bradford Piano Co. v. Hacker, 156 N. W. 140, (Wis.);

George A. Ohl & Co. Inc. v. Barnet Leather Co., 93 Atl. 715, (N. J. L.);

Bondy v. Hardine, 102 N. E. 935, (Mass.);

Sanitary Carpet Cleaning Co. v. Reed Mfg. Co., 145 N. Y. Supp. 218, 223.

Section 22

Schang v. Bramwell, 143 N. Y. Supp. 1057;

Collerd v. Tully, 80 Atl. 491, (N. J.);

O'Neill-Adams Co. v. Eklund, 93 Atl. 524, (Conn.);

Dinsmore v. Moag-Wahmann Co., 89 Atl. 399, (Md.).

Section 28

See Roland M. Baker Co. v. Brown, 100 N. E. 1025, (Mass.);

In re Richhelmer, 221 Fed. 16, (C. C. A.).

Section 33

See on corresponding section of Warehouse Receipts Act.

Rummell v. Blanchard, 216 N. Y. 348; 110 N. E. 765.

Section 38

Roland M. Baker Co. v. Brown, 100 N. E. 1025, (Mass.);

See on corresponding section of Bills of Lading Act, which is practically identical.

Commercial Nat. Bank v. Canal Louisiana Bank, 239 U. S. 530.

Section 42

Gruen v. Ohl, 80 Atl. 547, (N. J.);

Bridgeport Hardware Mfg. Corp. v. Bouniol, 93 Atl. 674, (Conn.).

Section 43

Lenders v. Fahlberg Works, 150 N. Y. Supp. 635;

Bridgeport Hardware Mfg. Co. v. Bouniol, 93 Atl. 674, (Conn.);

Schiff v. Winton Motor Car Co., 153 N. Y. Supp. 961, 964 (App. Term);

Dordoni v. Hughes, 85 Atl. 353, (N. J.);

Gruen v. Ohl, 80 Atl. 547, (N. J.);

Stephens-Adamson Co. v. Bigelow, 92 Atl. 398, (N. J.).

Section 44

Boyd v. Second Hand Supply Co., 123 Pac. 619, (Ariz.);

Kirshman v. Crawford-Plummer Co., 150 N. Y. Supp. 886;

Shipton v. Weil, (1912) 1 K. B. 574.

Section 45

Commercial Casualty Co. v. Rice, 157 N. Y. Supp. 1;

Quarton v. Am. Law Book Co., 121 N. W. 1009, 1013, (Ia.).

Section 46

Schanz v. Bramwell, 143 N. Y. Supp. 1057;

Hauptman v. Miller, 157 N. Y. Supp. 1104;

Miller v. Harvey, 144 N. Y. Supp. 624;

Wimble v. Rosenberg, 57 Solic. Jl. 392, 784.

Section 47

Gerli v. Mistletoe Silk Mills, 76 Atl. 335, (N. J.);

Bridgeport Hardware Mfg. Co. v. Bouniol, 93 Atl. 674, (Conn.);

Section 48

Gerli v. Mistletoe Silk Mills, 76 Atl. 335, (N. J.);

Salomon v. Olkin, 154 N. Y. Supp. 204.

Section 49

Marx v. Locomobile Co., 144 N. Y. Supp. 937;

Shearer Co. v. Kakoulis, 144 N. Y. Supp. 1077;

Nelson Co. v. Silver, 145 N. Y. Supp. 124;

Levy v. John C. Dettra Co., 154 N. Y. Supp. 176;

English Lumber Co. v. Smith, 157 N. Y. Supp. 233;

Gaacolgne v. Cary Brick Co., 104 N. E. 784, (Mass.);

Rothenberg v. Shapiro, 140 N. Y. Supp. 148;

Kugleman v. Ritter, 152 N. Y. Supp. 1027;

Regina Co. v. Gately Furniture Co., 154 N. Y. Supp. 888;

Interboro Brewing Co. v. Independent Ice Co., 156 N. Y. Supp. 411.

Leiter v. Innis, etc., Co., 138 N. Y. Supp. 536.

Section 50

Putnam v. Bolster, 216 Mass. 367, 373, 103 N. E. 942.

Section 51

Roppenberg v. Owen, 146 N. Y. Supp. 478.

The third answer to this objection, if any further answer is needed, is that our present law is now so uncertain in many respects,¹²¹ often with no announced law on the particular subject at all, either in the present Code or in the decisions of the courts, that, even granting the merit of the objection, we will gain rather than lose by adopting a statute which does furnish definite rules of law for many important questions.

As to this objection that the Uniform Sales Act would actually increase uncertainty, therefore, it may be shortly answered that our present law could hardly be made more uncertain than it already

Section 58

Northern Grain Co. v. Wiffler, 153 N. Y. Supp. 723, (N. Y. App. Div.);
Rummell v. Blanchard, 153 N. Y. Supp. 159, (N. Y. App. Div.);
Also see 216 N. Y. 348, 110 N. E. 765.

Section 60

Putnam v. Bolster, 216 Mass. 367, 373, 103 N. E. 942;
Churchill Grain Co. v. Newton, 89 Atl. 1121, (Conn.).

Section 61

Boyd v. Second Hand Supply Co., 123 Pac. 619, (Ariz.).

Section 62

Mordaunt v. British Oil & Coke Mills (1910) 2 K. B. 502.

Section 63

Illustrated Postal Card Co. v. Holt, 81 Atl. 1061, (Conn.);
Home Pattern Co. v. Mertz Co., 86 Atl. 19, (Conn.);
Home Pattern Co. v. Mertz Co., 90 Atl. 33, (Conn.);
Also see 223 Fed. 698.

Section 64

Home Pattern Co. v. Mertz Co., 86 Atl. 19, (Conn.);
Bixler v. Finkle, 88 Atl. 846, (N. J.);
Varley v. Bedford, 156 N. Y. Supp. 597.

Section 67

Gruen v. Ohl, 80 Atl. 547, (N. J.);
Pope v. Ferguson, 88 Atl. 353, (N. J.).

Section 69

Gerli v. Mistletoe Silk Mills, 76 Atl. 335, (N. J.);
Borden v. Fine, 98 N. E. 1073, (Mass.);
Marx v. Locomobile Co., 144 N. Y. Supp. 937;
G. B. Shearer Co. v. Kakoulis, 144 N. Y. Supp. 1077;
Regina Co. v. Gately Furniture Co., 154 N. Y. Supp. 888;
Impervious Products Co. v. Grey, 96 Atl. 1, (Md.);
Miller v. Zander, 147 N. Y. Supp. 479;
Frieder v. Rosen, 147 N. Y. Supp. 442;
Silberstein v. Blum, 153 N. Y. Supp. 34;
Salomon v. Olkin, 154 N. Y. Supp. 204;
Interboro Brewing Co. v. Independent, etc., Ice Co., 144 N. Y. Supp. 820;
Lewistown, etc., Co. v. Hartford Stone Co., 110 N. E. 515, (Ohio);
Coast Central Milling Co. v. Russell Lbr. Co., 89 Atl. 898, (Conn.).

Section 71

Re Walkers v. Shaw, (1904) 2 K. B. 152.

Section 74

Pope v. Ferguson, 88 Atl. 353, (N. J.);
Felt v. Bush, 126 Pac. 683;
Roland M. Baker Co. v. Brown, 214 Mass. 201, 100 N. E. 1025;
Also see 239 U. S. 520, 36 Supr. Ct., 194 at p. 197.

Section 76

Boyd v. Second Hand Supply Co., 123 Pac. 619, (Ariz.);
Willard v. Higdon, 91 Atl. 577, (Md.).

121. See above, p. 62.

is, that there is no reason for anticipating an increase in uncertainty since this Act is based thruout on decided cases, and that in practise under the Uniform Sales Act no such result has actually occurred.

3. **OBJECTIONS TO CODIFICATION OF THIS PARTICULAR BRANCH OF THE LAW.** In some quarters the contention is made that while codification of certain branches of the law may be desirable, yet in other branches codification would as a practical matter be futile and the results of attempted codification in such branches undesirable. For example, it will be admitted that it is practicable and perhaps desirable to codify the rules of law relating to property, because they change at best very slowly and great importance is attached to their stability. On the other hand, it will be suggested that any codification of the modern law of torts would be futile, it being still so largely formative in its character. That there is sound sense in taking such a position may also for present purposes readily be granted.

The answer to that position, if it is relied upon to oppose the adoption of the Uniform Sales Act, however, is that the rules applicable to sales transactions are really rules of property. In sales transactions, as in other dealings with property, rather than to have great flexibility with its consequent uncertainty, it is important to have such certainty that business can be carried on with reasonable security.¹²²

II. **OBJECTIONS BASED ON FEAR THAT THE UNIFORM SALES ACT WILL CHANGE THE RULES OF LAW ALREADY ANNOUNCED IN NORTH DAKOTA**

The most serious objection to be raised against the adoption of the Uniform Sales Act in North Dakota is that it would work changes in our law as already announced. Lawyers, especially, will be prone to hesitate at the adoption of an Act with which they are not entirely familiar, preferring to put up with the evils they have rather than jump to others they know not of. That such an attitude is sound may be granted without thereby consenting that absolute stand-patism is always on every occasion preferable. To be skeptical and require to be shown is very different from the uncompromising attitude which tolerates no change whatever. To the reasonable person it may be shown that the fear of making a few slight changes in the already existing rules of law should not stand in the way of adopting the Uniform Sales Act in North Dakota and securing the benefits of uniformity and certainty which

122. See above, p. 67.

would follow. The demonstration that any such fear is unwarranted rests on several grounds, which will here be briefly dealt with in turn.

1. **LEGISLATIVE CHANGES IN THE EXISTING LAW NOT ANOMALOUS BUT USUAL.** That the fear of changing existing law as such is inconsequential in our modern states is apparent from all our legislative history. Legislatures commonly meet every two years, and Congress meets every year for the avowed purpose of enacting new laws as well as for the purpose of providing appropriations to carry on the governmental machinery. At every session of these bodies new laws of one kind or another are passed.¹²³ If these laws are desirable as a matter of intrinsic merit in the situation to which they are to be applied, the mere fact that they change the pre-existing law is not allowed to stand in the way of their enactment. Such being the situation, in regard to proposed legislation generally, the mere fear that the Uniform Sales Act might change some existing law should not be regarded as intrinsically important, unless definite objections appear to the changes actually brought about.

2. **THE CHANGES IN OUR PRESENT CODE, WHICH WOULD BE PRODUCED BY THE UNIFORM SALES ACT NOT OBJECTIONABLE.**

a. *Substantial Changes not Numerous.* The sections in our present Code which would be displaced by the provisions of the Uniform Sales Act are embraced almost altogether in Chapters 57 and 58, numbered from section 5950 to 6006 inclusive. Of the sections in these chapters several would not be touched at all, as they deal with matter outside the range of the Uniform Sales Act. Such are sections 5957-5960, 5963, 5964, 5986, 5991-5993, 6002, and 6006, which, therefore, would remain in our Code as before and not be repealed at all.

Of the other sections in these chapters which would be repealed, a large number, as has been explained above,¹²⁴ are contained in the Uniform Sales Act either in substantially the same form or in a more satisfactory form because more specific. Such are sections 5950, 5952-5955, 5962-5969, 5971-5976, 5987, 5989, 5990, 5996, 5997, 5999, 6000, and 6005. The remaining sections in this part of the Code, which would be replaced by the Uniform Sales Act, nearly all relate to the law of warranty in sales. These are sections 5977-5985, 5988, and 5994. Besides these, there are section 5961, on the Statute of Frauds, section 5966, the part on how the

123. See above, p. 58.

124. See pages 133-135.

unpaid seller may enforce his lien, and sections 5998 and 6001, on auctions. For the sake of completeness, mention must also be made of section 6003, a definition of barter, which is not contained in so many words in the Uniform Sales Act. The definition in our Code, however, is of no value, and has never become the basis for any North Dakota court decision.

Sections scattered elsewhere thruout the Code are very rarely affected by the Uniform Sales Act. Of these only Section 5888 (4) and sections 7153-7159 would need to be repealed. Two others, sections 4340 and 5880, would be somewhat modified in application.¹²⁵ Sections 7153-7159 dealing with the mesure of damages in sales and warranty are, with one exception noted below,¹²⁶ substantially re-enacted in the Uniform Sales Act. Section 5888 (4) is substantially a duplicate of section 5961, on the Statute of Frauds, and would be affected in the same way.¹²⁷

From this cursory review it is apparent that the principal changes which the Uniform Sales Act would make in our Code is in the law of warranty in sales with a few minor changes in regard to the Statute of Frauds, manner of enforcement of the seller's lien, auctions, infant's right to avoid a sale, and sales at a valuation. The effect of these several changes is dealt with below.¹²⁸ Aside from these few changes, most of which are of a minor character, the Uniform Sales Act either re-enacts more specifically the law we already have in our Code in more indefinite form, or it definitely specifies, on the basis of the generally prevailing common law, rules of law to cover numerous situations often arising which are not dealt with by our Code at all.

a. *The Substantial Changes not Radical, but generally Improve our Local Law.* (1) *General Considerations.* That the changes made in our Code by the Uniform Sales Act are not radical may be inferred, even without any minute comparison of the detailed provisions, from the fact that the Uniform Sales Act is a careful codification of the common law prevailing generally in this country, based thruout on decided cases. Our Code, also, is an attempt to codify the common law. Both, then, rest upon the same basic foundation, and depend for their underlying principles on the same body of case law. The Uniform Sales Act, to be sure, is a more recent codification, and includes much matter drawn from cases decided since the Field Code was drafted. Those new cases, however, were

125. See page 151.

126. See page 150.

127. See page 148.

128. See pages 144-152.

decided according to common-law principles, deduced from the pre-existing authorities, and introduced nothing strange and startling into the law. It is therefore no accident, but a natural consequence, that even close comparison between the Uniform Sales Act and our present Code discloses so few marked diversities between them, tho it does disclose very conspicuously that the Uniform Sales Act is much more complete and specific in its provisions. Even in the few cases where substantial affirmative changes are made in the Code by the Uniform Sales Act, it may be inferred, in the light of these facts, that the changes are not of a startling but of a very moderate character.

A little detailed examination of these changes will confirm the conclusion that the changes in question are not radical, and that they are usually worth making on their own merits, even apart from the question of whether the Uniform Sales Act should be adopted to secure uniformity and certainty generally.

(2) *The Law of Warranty.* Section 15 of the Uniform Sales Act produces a more marked change in our Code than any of the other sections. Even in this section, which deals with implied warranties of quality, the general manner of dealing with the question is the same as in our Code—namely, that there is no implied warranty, apart from the categories especially dealt with in the statute. The categories, however, are somewhat different.

Under sections 5979 and 5980 of our Code the warranty dealt with is confined to the manufacturer. Under section 15 (1) of the Uniform Sales Act the warranty is implied in a sale, whether the seller is a manufacturer or not, if the buyer relies on the seller's skill and judgment.

Section 15 (2) of the Uniform Sales Act covers the matter dealt with in Sections 5978, 5981, and 5985 of our Code changing the law of section 5978 by leaving out any reference to deterioration after shipment, and changing the law of section 5985 by making the warranty apply regardless of whether the buyer buys for immediate consumption or for resale.

Section 15 (3) of the Uniform Sales Act changes the law of section 5981 by referring only to actual examination of the goods instead of opportunity to examine.

Sections 12 and 15 (1) of the Uniform Sales Act also modify section 5988, by permitting a warranty against known defects if the buyer relies upon the seller's skill and judgment in the matter. This is often important in cases of doubt and difficulty on the part of the buyer in regard to appreciating the seriousness of defects.

Section 5994 of our Code provides that a breach of warranty entitles the buyer to rescind a contract of sale but not an executed sale, "unless the warranty was intended by the parties to operate as a condition." It has also been difficult under this section to determine what the qualification meant.¹²⁹ It is a better rule, on the merits, to let the buyer rescind either a contract of sale or an executed sale, if there is a breach of warranty. That leaves the question of whether there can be a rescission to depend alone on the question whether the warranty has been broken, a result which is far preferable since the questions of what conditions were intended to be included and just at what moment title was intended to pass are so often obscure, the parties in their bargain not having adverted specifically to those matters at all. This section of our Code would be changed by the Uniform Sales Act, section 69 (1) (d) to letting the buyer at his election rescind or sue for breach of warranty, whether title has passed or not.

The general effect of these changes in the law of warranty is to make the law of warranty somewhat more stringent on the seller than before. This is quite in accord with the tendency shown at common law in more recent times, as well as with the tendency shown in our own recent legislation.¹³⁰ It will be remembered that in the earlier common law the law of implied warranty was very much restricted, and that as time has gone on its range has been more and more extended. The Uniform Sales Act, being based on the common law of the present, therefore usually goes farther in this respect than does our Code which was drawn up more than fifty years ago. For further discussion of the intrinsic merits of this particular development, as for discussion of the intrinsic merits of other provisions of the Uniform Sales Act, reference must be made to the treatises.¹³¹

A few further changes in the Code, mostly minor in their nature, connected with the law of warranty, must be mentioned. Under the Uniform Sales Act sections 5977, 5983, and 5984 of our Code would be repealed. Section 5977 is in part covered by section 15 (1) of the Uniform Sales Act, but not as to the seller's warranting his own good faith in the transaction. Such a warranty is unnecessary since bad faith here would in any case give rise to a cause of action for fraud, and unless there were bad faith there would be no breach of warranty under this section. Such a warranty, too, is unknown to

129. See 14 N. D. 419, 105 N. W. 92; 21 N. D. 575, 133 N. W. 137; 159 N. W. 2, (N. D.).

130. See Compiled Laws (1913) sections 5991-5993 and section 6008, which were recently added to our Code.

131. See footnote 71.

the common law of sales, and was equally so unknown at the time section 5977 was originally introduced into the Field Code.¹³² Further, no case involving any warranty in sales of goods under this section has arisen in the fifty odd years of this section's useless existence on the statute book, either in North Dakota¹³³ or California.¹³⁴ It would therefore do no violence to the law of North Dakota to have section 5977 repealed without substantial re-enactment in the Uniform Sales Act.

Section 5983 of the present Code which would also be repealed without substantial reenactment in the Uniform Sales Act is reasonably covered by Section 14 of the Uniform Sales Act if the sale is by description, and is also partly covered by section 15 (1) and (2). So far as section 5983 of the Code goes beyond these portions of the Uniform Sales Act it is either unimportant or mischievous, since the marks referred to may be wholly immaterial, forming no part of the description or of the inducement to buy and being in no wise relied on. Further, its unimportance is shown by the fact that since the Field Code was adopted no cases have been decided in reliance on this section, either in California¹³⁵ or North Dakota.

Section 5984 of the Code is not contained in any corresponding form in the Uniform Sales Act. It may be properly omitted from the sections of the statute relating to sale, however, since it deals with negotiable instruments only, was drafted as a codification of some cases relating to negotiable instruments¹³⁶ and is substantially contained in the Negotiable Instruments Law, appearing in that connection in our Code as part of section 6950. It should be noted, in confirmation of this view, that the only case decided in North Dakota under this section was a case involving a negotiable instrument.¹³⁷ It is therefore no objection to the adoption of the Uniform Sales Act which deals with the sale of ordinary chattels, not with bills and notes, that this section would disappear from the sections of the statute dealing with ordinary sales.

132. In the Commissioners' note to the original Draft Civil Code of New York (The Field Code) the cases cited do not stand squarely for any such proposition as they are cited to support. In only one of them, 20 N. Y. 287, does even the language measurably bear it out, and that is a case of negotiable instruments in its turn citing, for its support, *Story on Promissory Notes*, sec. 118.

133. One North Dakota case, 19 N. D. 317, at p. 326, 124 N. W. 64, refers to this code section merely to assure that the case in question was not within its provisions and that it therefore could have no application.

134. See Kerr's Cyc. Codes of Cal., Civil Code, sec. 1767 and notes.

135. See Kerr's Cyc. Codes of Cal., Civil Code, sec. 1773 and notes.

136. See the cases cited by the Code Commissioners under sec. 888 of the Draft Civil Code of New York: 4 El. & Bl. 133; 4 Gray 156; 15 Johns. 240; 2 El. & Bl. 849; 1 Hill. 287; 20 N. Y. 226; 15 id. 437; 2 Bing. (N.C.) 724; 4 Scott 849; 20 N.Y.287.

Parts of this section were early repealed in California. See Kerr's Cyc. Codes of Cal., Civil Code, 1774, and notes thereto.

137. See 24 N. D. 645, 140 N. W. 725, 47 L. R. A. (N.S.) 246.

(3) *Auctions.* Section 21 of the Uniform Sales Act, while strictly in accord with the common law in the matter, changes section 5998 of our Code which provides that when a sale is made by auction upon written or printed conditions, such conditions cannot be modified by any oral declaration of the auctioneer, except so far as they are for his own interest. No such provision is contained in the Uniform Sales Act. Such provision, too, tho cited by the Field Code commissioners as based on decided cases, is apparently opposed to the common law in this country.¹³⁸ It has never become the basis for any case law in North Dakota, nor have any California cases under it decided what sort of modifications will be held good under it as made for the auctioneer's own benefit.¹³⁹ Our law would therefore lose nothing of importance, but would gain in certainty by the repeal of section 5998 of the Code and the adoption of the provisions of the Uniform Sales Act in its stead.

(4) *Statute of Frauds.* Section 4 of the Uniform Sales Act slightly changes section 6001, as it changes section 5888 (4) on the same point. The parts of the Code referred to say that the auctioneer's entry is binding on the parties the same as if made by themselves. Such is also the common law embodied in section 4 of the Uniform Sales Act except in cases where the auctioneer is himself interested as a seller.¹⁴⁰ This qualification would probably be read into the present Code also.¹⁴¹ No local case has been decided under this part of the sections. This change in the Code, if indeed it amounts to any change at all, is therefore not a worthy objection to the adoption of the Uniform Sales Act.

Section 4 of the Uniform Sales Act also changes the expression in sections 5888 and 5961, that "no sale is valid unless," etc. to "shall not be enforceable by action, unless," etc. The distinction between the two expressions is merely formal. Under either form it has been held that such sales, without the proper memoranda to satisfy the Statute of Frauds, may be shown for other purposes so long as it is not attempted to enforce them affirmatively by action.¹⁴²

Section 4 of the Uniform Sales Act makes a further change, which is more substantial, in sections 5888 (4) and 5961 of our

138. See 24 L. R. A. (N.S.) 488.

139. See annotations under sec. 1795, Kerr's Cyc. Codes of Cal., Civil Code.

140. See, 9 Gray 397, 69 Am. Dec. 295; 45 Mo. 444, 100 Am. Dec. 385.

141. See, for example, 1 Cal. 415, under the identical section in California, that the auctioneer is agent of the parties for this purpose only at the time of sale, not afterwards, which is a common-law proposition.

142. See, for example, 5 S. D. 53, 58 N. W. 8, treating the case thruout as if the language were "unenforceable" and even reciting in terms that the two expressions are equivalent. Many authorities on the question are cited in Williston on Sales, sec. 71.

Code, in changing the amount fixt by the statute from \$50 to \$500. This change is based on such considerations as that \$500 more nearly represents at the present time the value that £10 represented in the original English Statute of Frauds, and that it may be questioned whether in small transactions, where the custom of reasonable men does not prescribe a writing, the Statute of Frauds does not cause more fraud than it avoids.¹⁴³ The American statutes in the various states have usually but not always fixt the amount at \$50, while one, in Florida, fixes no limit at all. With the steadily rising prices this absolute amount of course makes the statute actually applicable to smaller and smaller transactions. In a few of the states which have adopted the Uniform Sales Act the amount prescribed by the Act has been changed, tho the old figure of \$50 has not always been retained.¹⁴⁴

Section 4 of the Uniform Sales Act also contains the merely formal change of using the term "of the value of" instead of "of the price of" as in our Code. This change in the wording does not produce any substantial change, the word "price" having universally been liberally construed in the American cases to cover barter as well as sales transactions.¹⁴⁵

(5) *Enforcement of Seller's Lien.* Section 60 of the Sales Act changes our Code provision, section 5966, on the enforcement of the seller's lien. Our Code provides that the unpaid seller, to enforce his lien, may sell as in the case of pledge. Sections 6785-6789 provide that in case of sale of pledged property, the pledgee must first demand performance of the pledgor "if he can be found," and must give actual notice of the time and place of sale at such a reasonable time before the sale as will enable the pledgor to attend the sale, and the sale, when made, must be made by public auction. These provisions applicable to pledge would still remain in the Code after the adoption of the Uniform Sales Act, but would no longer be applicable to the case of an unpaid seller enforcing his lien. The provision of the Uniform Sales Act on the subject permits the unpaid seller, after the buyer's default has lasted an unreasonable time, to

143. See Williston on Sales, sec. 70.

144. See footnote 143.

145. Our present Code, in sec. 6004, gives the same effect, in providing that this provision of the Statute of Frauds applies to barter if the value is \$50 or more. Some situations might be imagined where it would make some difference whether the word "price" or the word "value" was used in the statute, as for example, whether "value" is the value put on the article by the parties or by a reasonable person. Since we have already, under section 6004, whatever difficulties this inquiry can bring, as the difference can become practically important only in the case of barter, its presence is no objection to the adoption of the Uniform Sales Act.

sell again without formalities, and without notice to the defaulting buyer, provided he exercises reasonable care and judgment. Notice to the defaulting buyer, will, however, be material on the question of reasonableness. The purpose adopted in the Uniform Sales Act is to enable the unpaid seller in possession of goods to realize upon them after the buyer's default has lasted an unreasonable time without the necessity of intricate or uncertain formalities. That this is the better rule as a practical matter can hardly be open to question.

(6) *Seller's Right to Recover the Price.* The ordinary rule at common law is that the seller under a contract of sale which is broken by the buyer can recover the price in full only if title has passed to the buyer. If title has not yet passed when the contract is broken, the seller still owns the property and is entitled only to damages for breach of contract.¹⁴⁶ There is, however, a considerable body of law allowing the seller under certain circumstances to treat the goods as the buyers and recover the whole price, and some of the authorities even go so far as to let the buyer recover the whole price as a matter of course regardless of special circumstances and regardless whether title has passed before the contract was broken.¹⁴⁶ It has even been gravely contended that this last-mentioned rule prevails in North Dakota, tho our court in its decision discountenanced any such view.¹⁴⁷

Under the Uniform Sales Act, section 63 (3), the rule is settled that the seller may recover the full price, even tho title has not passed at the time of the breach, only in the cases where the goods cannot be readily resold at a reasonable price. This takes care of the only cases where the ordinary common-law rule imposes considerable hardship upon the seller and yet prevents the title from being foisted upon the buyer without his consent in ordinary cases. It is roughly analogous to the generally prevailing rule in equity permitting specific performance of a contract for sale of a unique chattel on the ground that damages for the breach are inadequate.

This section of the Uniform Sales Act would, to the extent stated, modify section 7156 which limits the seller's recovery of the full price to cases where the title has passed. It would, however, prevent any such rule as was recently contended for, that the seller should be allowed to recover the full price in all cases, from becoming established in our law, and would definitely put the question at rest in this state if it has not been settled already.¹⁴⁸

146. See above, pages 63-64.

147. See 153 N. W. 137 (N. D.).

148. As our court makes much of the fact that there had been an anticipatory breach, in 153 N. W. 137, it is not possible to say with

(7) *Sale by One Having a Voidable Title.* Under our Code, section 4340, a minor may sell and transfer title to property of which he is the owner, but he may, within certain limitations, avoid such sale and get the property back. The minor may thus get the property back, even tho his transferee has sold it to a purchaser for value without notice, such purchaser getting only the same defeasible title that his seller had. A similar situation exists in regard to idiots, under section 4344 of our Code. By section 24 of the Uniform Sales Act this rule is changed to protect the purchaser for value without notice if he acquired the title from the minor's transferee before the minor, etc., had avoided the sale. This change in the law is justified by Professor Williston in these words: "It is desirable that at some time the title to goods bought from an infant or lunatic should be perfected, and the advantage to trade and the stability of titles justifies the diminution in the privilege of infants and lunatics."¹⁴⁹

(8) *Sale at a Valuation.* This subject is not provided for directly in our Code, but would fall under section 5880 providing that if a contract provides an exclusive method by which its consideration is to be ascertained which appears possible on its face but in fact is or becomes impossible, then such provision only is void. The result then is that a sale on terms to be fixt by a third person may become a sale for a price to be determined on principles of quantum meruit as what the goods were reasonably worth, which is very different from what the parties themselves agreed. The Uniform Sales Act, section 10, provides that in such cases the sale shall be avoided except as to the goods which have already been delivered to and appropriated by the buyer, for which he must pay a reasonable price. The position taken in the Uniform Sales Act is probably more nearly in accord with common-law principles.¹⁵⁰

c. *The Changes hardly Touch Our Present Case Law.* (1) *Where the Uniform Sales Act Provides for Cases not directly Covered in our Code.* As the Uniform Sales Act is an up-to-date and careful codification of the prevailing common law, and as our cases are worked out on common-law principles, based on common-law authorities, if there is no code section applicable to the case in hand

entire assurance that the broader question is also decided, whether title can be passed to the buyer without his consent where he gives no previous notice of repudiation but merely refuses to receive the goods when tendered.

¹⁴⁹. Williston on Sales, sec. 348.

¹⁵⁰. For extended discussion of the merits involved in this proposition, see Pothier, Sale, No. 24; Story on Sales, sec. 220; 1 Parsons, Contracts, 5th ed., p. 525; 4 Kents' Commentaries, p. 468, p. 477; 1 Mechem on Sales, sec. 213; Williston on Sales, secs. 174-177.

it may be expected that the cases thus worked out in our courts should in the main agree with the provisions of the Uniform Sales Act which are additions and not changes in our Code. This conclusion is amply confirmed by examination of the reports of our decided cases. Some of the cases have been referred to above, in connection with various provisions of the Act, which add to or make more specific the law contained in our Code. No cases directly opposed to any of these provisions have been found, tho it would probably be rash to say there may not be even isolated dicta running in other directions.

(2) *Where the Uniform Sales Act makes Affirmative Changes in our Code.* (1) *Warranty.* Under our Code, section 5994, permitting rescission for breach of warranty only if the sale was not executed, unless the warranty was intended to operate as a condition, there are several cases trying to define what that proviso means.¹⁵¹ As this section would be changed by the Uniform Sales Act which allows rescission for breach of warranty whether title had passed or not, these cases would be likewise superseded, so far as the question of rescission for breach of warranty is concerned. Similarly, one case¹⁵² cites section 5984, which is repealed by the Uniform Sales Act. As the substance of this section, however, is contained in section 6950 of our Code in reference to negotiable instruments which would not be repealed and as the case mentioned is a case of a negotiable instrument, the repeal of section 5984 does not materially affect the case law situation.

No cases involving any question depending on sections 5982-5983 having been decided in our court, repeal of those sections does not affect the case law situation.

Repeal of section 5977 equally leaves the case law situation untouched there having been but one case in which the section is dealt with and that only to show that the case in question was not within it.¹⁵³

(II) *Enforcement of Seller's Lien.* One case,¹⁵⁴ decided under 5966, which says the seller may foreclose his lien as on pledged property, is no longer applicable under the Uniform Sales Act, section 60, which permits informal resale if done with reasonable care and judgment.

(III) *Seller's Right to Recover the Price.* The particular

151. 14 N. D. 417, 104 N. W. 513; 21 N. D. 575, 132 N. W. 137;

N. D. —, 159 N. W. 2.

152. See 24 N. D. 645, 140 N. W. 725.

153. See 19 N. D. 317, 124 N. W. 64.

154. See, 16 N. D. 398, 114 N. W. 313.

distinction introduced by section 63 (3) has not previously been found in our local cases. Since our cases on the question, however, have been rather inconclusive, and have not even yet reached any entirely definite rule,¹⁵⁵ the effect of the Uniform Sales Act upon these cases is more conspicuously to render them certain than to change any rule they already express.

d. *Some Possibly Doubtful Cases.* (1) *Potential Possession.* As has been seen above¹⁵⁵ our cases have never decided whether future goods may be presently sold so as to pass title now. The doctrine of potential possession has been cited in briefs to our court, but has never been either accepted or rejected. If the conclusion under the cropper's contract cases is that there is no lease at all, the question of potential possession does not even arise. That the legal conclusion is that there is no technical lease is probably no longer open to much question.¹⁵⁶ It is therefore submitted that the Uniform Sales Act, section 5 (3), does not change any local case law in North Dakota by providing that where the parties purport to effect a present sale of future goods, the agreement operates as a contract to sell the goods.

(2) *Resale by Seller in Possession.* Section 25 of the Uniform Sales Act provides that a sale by a seller in possession of goods already sold, if delivery is given, will protect the second purchaser who receives the goods paying value in good faith without notice. This definitely settles, rather than changes, our local law. Our Code says retention of possession by the seller is presumptively fraudulent,¹⁵⁷ but we have neither code nor local cases on the question whether delivery, apart from the question of fraud, is necessary to convey title good against subsequent purchasers from the original seller. The rule in the Uniform Sales Act is based upon the common law on the subject generally prevailing in this country.¹⁵⁸

(3) *Definition of Value.* The definition of value in section 76 of the Uniform Sales Act makes an antecedent claim "value" for a transfer of goods or documents of title either in satisfaction thereof or as security therefor. This definition, tho not in accord with the weight of American authority apart from the Uniform Sales Act,¹⁵⁹ is more nearly correct on principle¹⁶⁰ and accords with the construc-

155. See note 43, p. 64.

156. See footnote 155.

157. See, sec. 7221.

158. See 85 Minn. 204. Also Williston on Sales, sec. 350. As the cases are usually also concerned with the question of fraudulent retention of possession, there are not so many clear-cut cases on this proposition alone.

159. See above, notes 43 and 49.

160. The effect will generally be, under this definition of value,

tion of value adopted in the Law of Negotiable Instruments. Whether or not it changes sections 5873 and 7303 of our Code on what is valuable consideration can be decided only after it is determined what those sections together mean, a task which neither our lawyers nor our courts have as yet been able to perform.

(4) *Waiver of Cause of Action.* Sections 5991-93 and section 6002 of our present Code provide in substance that waivers of causes of action for breach of warranty, express or implied, cannot be made in advance, and that agreements waiving such in advance, or imposing unreasonable terms as to notice which practically works a waiver, shall be void. These sections are new legislation enacted in 1913 overruling some of our cases which had sustained such waivers in favor of threshing machine companies.¹⁶¹ The Uniform Sales Act has no necessary effect upon these provisions. While it provides that implied obligations may be varied by agreement,¹⁶² which is well established common law, resting upon the fundamental liberty of contract, it does not purport to deal with the question of waivers of causes of action, but expressly provides¹⁶³ that the rules of law of the particular jurisdiction as to fraud, mistake, etc., or other invalidating cause shall continue to apply to contracts to sell and to sales of goods. If agreements of waiver are void, therefore, under these sections of our Code, such invalidity is recognized in the Uniform Sales Act.

G. SUMMARY OF CONCLUSIONS

The case for enacting the Uniform Sales Act in North Dakota may be shortly recapitulated. Our law is suffering from lack of uniformity with other states and, especially, our law is on many points very uncertain. This lack of uniformity and lack of certainty may be in large measure remedied by the adoption of the Uniform Sales Act. The list of particular benefits from such a step is long, the list of changes in existing law is short, and the changes themselves are often of a minor nature. At the price of making a few minor changes in our law we may get the benefit of more satisfactory dealing with those in other states resulting from uniformity, and especially we may get the benefit of definite rules of law for the trial of our local cases, where as yet we have them not, by which con-

that there is the legal detriment which constitutes valuable consideration under ordinary principles of contract, except in the single instance where there is a transfer of the goods as security for a pre-existing debt where there was no obligation to give security.

161. See, for example, 3 N. D. 81, 54 N. W. 211; 3 N. D. 220, 55 N. W. 580; 6 N. D. 48; 10 N. D. 120, 86 N. W. 226 (gloves).

162. Uniform Sales Act, Sec. 70.

163. Uniform Sales Act, Sec. 73.

trousers can be settled when they arise, or even be prevented from arising. By profiting from the lesson of the experience of others in litigation, which is codified in the Uniform Sales Act, we can attain at a stroke thru legislation what it has cost others years of expensive litigation to reach. By legislation we may get these rules at once. By litigation we can get them only gradually, in a long course of years. By legislation we can get them complete. By litigation we can get only isolated fragments at a time. Litigation will always be dilatory, fragmentary, and expensive. Legislation can produce the result at a stroke, promptly, completely, and practically without expense. We should therefore adopt the Uniform Sales Act to give to our law greater uniformity and especially to give to our law a much greater degree of certainty.

The Next Step Toward Efficiency in Public Health*

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I. INTRODUCTION

APPROPRIATIONS to be used in securing the collection of vital statistics bear the same relation to health laws that gasoline bears to the motor car. If the complicated machinery, namely, our health laws, is well constructed and efficient, it will stand vigorous usage and will furnish much needed power by the thoughtful and economical application of fuel. The power developed, however, will be in direct proportion to the capabilities of the health organization. Careful study of our health car makes us suspicious that at present it is not developing over one-third of its horse-power—i.e., Vital Statistics.

Let us closely examine the laws and determine whether they have been intelligently assembled and whether they are workable.

II. LAWS REFERRING ESPECIALLY TO VITAL STATISTICS

The North Dakota health laws which refer especially to vital statistics are, for the most part, the result of two legislative enactments:

* Read before the Grand Forks District Medical Society, December, 1914, and before the North Dakota Health Officers' Association, January, 1915.

The law of 1905, often called the morbidity law, defines the duties and powers of the village, the city, the county, and the state boards of health and defines with regard to the registration of infectious, contagious, and epidemic diseases the relations of citizens and physicians to these boards. In 1907, as a result of a request from the United States Bureau of Census, the legislature passed the model registration law. This law is said to represent the combined judgment of all those interested in securing vital statistic legislation and registration of deaths and births, as well as the knowledge and experience of those best qualified to speak with authority on the subject.

A study of these laws shows that the State Board of Health is invested with the power to make and enforce all needful rules and regulations for the prevention and cure of any contagious, infectious or epidemic disease; that a State Bureau of Vital Statistics is established under the immediate superintendence of the State Board of Health, the secretary of this board being ex-officio state registrar of vital statistics; that each incorporated village and city and each township constitutes a primary registration district for deaths and births in which the city, town or village clerk acts as the local registrar; that the local registrar receives twenty-five cents for each report of death and birth forwarded to the state registrar; that the state registrar is to supply all local registrars with printed blanks and forms for use in registration and is to issue such detailed instructions as may be required to secure the uniform observance of the model registration law and the maintenance of a perfect system of registration; that the state registrar is charged with supervisory power over health officers, local registrars, and sub-registrars in all parts of the state; that he shall report the cases of violation of the model law to the state's attorney and may call upon the attorney general to assist in its enforcement; and that the state superintendent of health may cause the removal of any health officer for neglect of duty.

The following demands are made upon the county superintendent of health by the morbidity law: That he shall make an immediate report to the state superintendent of health when any contagious, infectious or epidemic disease occurs in his county; that he shall furnish at the expense of the county, all township and village clerks and all physicians within his jurisdiction with proper blanks for reporting to him all contagious, infectious, and epidemic diseases; that he shall enforce all laws, rules and regulations to the end that the health of the people be conserved and protected; that

whenever a village board of health or township board of health within his jurisdiction neglects or refuses to perform any of its duties or refuses to execute any of the orders and regulations of the county board of health, he shall execute its orders and regulations by agents of his own appointment; that he shall by the 15th of each month report to the secretary of the state board of health the name and address of each case of dangerous and infectious disease occurring within his jurisdiction; that he shall receive the sum of twenty-five cents for each separate record; and that for neglect to perform his duties, he shall forfeit a sum not to exceed fifty dollars for each offense.

Section 267 of the Morbidity laws, which governs the duties of the city board of health and city health officer, was amended in 1913 as follows: The city health officer shall see that the health ordinances of the city, the rules and regulations of the board and the rules and regulations of the state board of health and the health laws of the state are fully complied with thruout his jurisdiction and he is charged with their strict enforcement. He shall instruct all physicians in his jurisdiction in the proper methods to employ in reporting contagious and infectious diseases and shall furnish all necessary blanks for that purpose, such blanks to be of the form prescribed by the state board of health. He shall keep a record of all dangerous, contagious, and infectious diseases and shall, by the 10th of each month, report to the secretary of the state board of health, on blanks furnished him for that purpose, all cases of dangerous, infectious, and contagious diseases.

The health officer of each city shall receive, for the making and reporting of records to the state health officer, the sum of twenty-five cents for each record.

Any health officer, county superintendent of health or any member of any local board of health who neglects or refuses to perform any of the duties required to be performed by him shall be guilty of a misdemeanor and may be punished with a fine or imprisonment, or both.

The morbidity law states definitely: that each practicing physician shall report immediately in writing to the local board of health, all cases of contagious, infectious or epidemic diseases. Such report shall be made within twenty-four hours when death is caused by an acute infectious or contagious disease; that the keeper of each private house, boarding house, and hotel, the keeper or proper officer of every work house, poor house, reform school, jail, prison, hospital, asylum or other public or charitable institution, shall report in writ-

ing to the local board of health within twenty-four hours after the existence of such a disease shall become known to such person; and that the penalty for neglect or refusal to give such notices is a fine of \$20.00 for each offense.

Most of the burden for the registration of deaths falls upon the undertaker who receives no direct benefit from it. The law directs that he shall secure the death certificate from the attending physician and such information as required over the signature of the informant. The filing of this death certificate with the clerk of the town, village or city in which the death occurred, permits the issuance to him of a burial permit. This permit must be given to the keeper or sexton of the cemetery before interment is allowed. The sexton in turn is required to keep a record of all burials and to return the permit to the office of the issuing clerk. When a death occurs without an attending physician, the town, village or city clerk under whose jurisdiction it belongs is required to ask the local health officer, if he is a physician, for permission to issue the permit. The law states that if any undertaker fails to follow this law he shall be deemed guilty of a misdemeanor and, on conviction thereof, shall be fined not less than twenty nor more than one hundred dollars.

Article 13 of the model law reads: "It shall be the duty of the attending physician or midwife to file the certificate of birth properly and completely filled out, giving all the particulars required by this act, with the local registrar of the district in which the birth occurred, within three days after the date of the birth, and if there be no attending physician or midwife, then it shall be the duty of the father of the child, householder, or owner of the premises, manager or superintendent of public or private institutions in which the birth occurred, to file said certificate of birth with the local registrar within three days after the birth. Still-born children, or those dead at birth, shall be registered as births and also as deaths. A penalty of not less than five dollars for each offense can be inflicted for failure to comply with birth registrations."

Probably there are few who would care to criticize these laws. Apparently, they have been intelligently assembled. That they are workable, we must acknowledge, since many other states have adopted them with successful results. This fact being true, it is evident that we must compare the results produced under our administration and enforcement with the average results secured in the United States Registration Area.

III. RESULTS OF THESE LAWS

The Census Bureau of 1909 comments at some length upon the extremely low death rate of some of the western states. The Bureau makes the statement that rates under seven per thousand, when they continue for several years and relate to inhabitants of several thousand, unless the population consists almost entirely of young adults, may safely be taken as indicating deficiency in the registration of deaths. With this statement in mind, it is easy to appreciate why the United States Bureau of Census considers our published death rate of 5.9 per 1000 (1912) unreliable. During the same year, the average death rate in the registration area was 14.2 per 1000. Thus, North Dakota might feel proud if she could prove that her death rate no more than equalled either Minnesota, who has a remarkably low rate of 10.5 per 1000, or Montana, our nearest western neighbor, who shows a death rate of 10.2 per 1000.

By reporting 5.9 it is evident that North Dakota is failing to report at least 40% of all deaths. By the study of the specific rates for typhoid, tuberculosis, and diphtheria, this can easily be proven.

Typhoid caused 21 deaths per 100,000 (1912) in the United States Registration area. The typhoid average in Montana and Minnesota was 21 deaths per 100,000 (1912), but the typhoid rate in North Dakota is recorded as 16 deaths per 100,000 (1912).

Tuberculosis caused 159 deaths per 100,000 in the United States Registration area (1912). It also resulted in an average of 130 deaths per 100,000 in Montana and Minnesota (1912), while North Dakota dares to state that only 49 per 100,000 died there (1912).

Diphtheria and croup resulted in 18.2 deaths per 100,000 in the United States Registration area (1912). In North Dakota 6.2 deaths per 100,000 were reported from these diseases (1912).

From these facts it can be seen that North Dakota is basking in the sun of false security when she reports 21.8 deaths per 100,000 from carcinoma. Its prevalence in the United States is at least $3\frac{1}{2}$ times this number

IV. CAUSES OF FAILURE

The reason for our failure in securing dependable vital statistics can be summed up in a few words—viz., 1. North Dakota is a rural community; 2. Ignorance of the value of vital statistics; 3. Negligence of our physicians.

North Dakota is essentially a rural community. Over 80% of the population is found outside of cities and villages of 1000 or over. This rural population of 468,000 is scattered over 70,000 square

miles with an average of less than seven persons to the square mile. Because of this condition, the collection of vital facts becomes a difficult task. Health officers, physicians, and town clerks are few. In many sections they are almost unknown. That the residents of such a community should know much concerning health laws or their administration is not to be expected. Under these conditions, it is evident that the births and deaths will not be registered until the laws are made known to the citizens of the rural districts, the advantages of vital statistics are explained, and easy means are provided for every registration.

Ignorance of health laws is not essentially a rural fault. It is believed that 99% of the citizens of the urban communities are lacking in the fundamentals which make the registration of the births and deaths possible. This is because those who are masters of this science have been unable to impart it to others. Do not infer from this that our sanitary officials do not recognize the necessity for the education of the citizens. The facts which can be easily ascertained, show that nearly all health departments are unable to enlighten the citizens because of a lack of funds.

The failure of the present morbidity law is often due to the negligence of a few physicians in each community. The state, in return for the special privileges it has granted the physician and in the acknowledgment that no body of men are in a better position to know the presence of acute infectious and contagious diseases, demands that each physician report all cases of morbidity in his practise. Many are failing to do their part. Will this continue? What has the future in store for the entire profession unless it awakens before the citizens become aware of its neglect?

Let me quote from a speech by the Honorable Eugene H. Porter, former Health Commissioner of New York State, who, in deploring the negligence shown by physicians, said:

"If this great and splendid domain of public health does not belong to medicine, where are its rulers? If this is not the kingdom of physicians where is its monarch? Is the community health and welfare of no concern to the profession? Is the prevention of pollution of waters of no interest to medical men? If the investigation of the causes of typhoid fever, its prevention and prophylactic treatment 'is in a field quite apart' from general medicine, then has medicine fallen from its once high estate. If the investigation, prevention and cure of tuberculosis is of no concern to the profession, what in the name of Galen is? Must the foundation of sanitary science be lacking because the physician cannot interest himself in reporting

morbidity? Are all the various lines of activities in Public Health to be regarded as outside the profession? I say then that these matters have been too long disregarded and stupidly ignored; that the blindness of the profession in this great field is a public disgrace and that if the profession of medicine does not at once claim as its very own this vast domain of health conservation, if it does not at once take possession of this, its rightful kingdom, it will, shorn of its prestige and dignity, fall to a low state and decay in the gloom of the past.

"The old idea was the cure of the individual. There was no protection or prevention. The doctor dealt with single isolated cases. He naturally had no concern for the health of the community. The new conception is not individual but collective. It is concerned with the health of communities—villages, towns, cities, states. The old blind faith in doctors has gone forever. If we are to receive and retain the public confidence we must first deserve it, and to deserve it we must serve the people in public health.

"Now the community is going to look to somebody for public health conservation. Already it is looking more and more anxiously to physicians, health officers, and health departments. When the people compare the health departments and the physicians shall they be found in antagonism? It is or ought to be unthinkable. The profession is as much concerned with the prevention of disease as with the cure of disease. It is even more concerned. Everything that relates to the general health is a vital part of the broad practise of medicine.

"If we are right in saying that 'preventive medicine is today the most important branch of medical science,' and that vital statistics are 'our greatest public health need,' it naturally follows that to assist in and encourage the prompt, accurate, and full notification of all infectious and contagious diseases is the greatest opportunity that the individual members of our profession in this state have to assist in the great work of the prevention of disease, not only in the state but also in the nation at large. It is the old question of little drops of water and little grains of sand; and unless every physician is alive to his duties and responsibilities in this matter at all times, our vital statistic records will be of little value, and the great work of the prevention of disease will be neglected for many more years."

V. SUGGESTIONS FOR THE SUCCESSFUL OPERATION OF OUR HEALTH LAWS

1. *Appropriation.* Health laws may as well not exist if they are not properly enforced thru adequate appropriations. This means

that the State Department of Health should be placed upon a business status—efficiency tests should be introduced and maintained. The expenditure of public funds should be exercised wisely and economically in order that the greatest sanitary benefit can be secured. The appropriation which has been available for several years past to enforce the sanitary laws of our state has been the ridiculous sum of \$200 per year. This has been wisely used in publishing a monthly health bulletin. The encouraging results obtained justify us in demanding that each community tax itself liberally to support high standards of health administration. For several years the need of a sufficient appropriation has been pointed out to the legislature. So far, it has availed little. It evidently rests with us to prove "that the chief assets of our community are the life and health of its citizens" in order that we may secure a yearly appropriation, the value of two lives, i.e., \$10,000.

2. *All-time Health Officer.* The men with whom we should entrust the health of our community should measure up to certain standards. Long experience has proven that our present organization of under-paid health officials is inadequate. The future health officer should be well trained in the modern science of sanitation and public health. He should be an all-time health officer whose compensation should be sufficient to attract him and to keep him in the service without inflicting any hardship upon him or his family. His tenure of office should be co-extensive with his efficient service. The efficiency of his administration should be judged by the corrected death rates of his district, by his ability for lowering the death rates for children under two years of age, and by the specific death rates of preventable diseases.

The duties of the all-time health officer could be increased to advantage. The offices of the city and county coroner should be abolished and their duties transferred to him; all cases of death due to ill-defined causes should be reported to him in order that he might ascertain the actual causes by an autopsy; the duties of the county and city physician rightfully belong to his office; he should be required to maintain a press and an educational bureau in order to secure the co-operation of his employers; it should be his duty to act in an advisory capacity to all expectant mothers; heretofore, he has been handicapped because of lack of police power. It stands to reason that if an efficient health officer could supervise an energetic health education in our public schools for ten years, he could plan and secure the support of North Dakota in any rational public health propaganda.

3. *Publicity: Influencer of Sentiment.* Granted that we secure an adequate appropriation and that we are permitted to choose a proper personnel, there still remains a great need which we dare not overlook: namely, public sentiment, active and desirous for health improvement. It has long been recognized that the results produced are directly proportional to the value placed upon them by the community. Knowing this, we must act accordingly and give publicity to our desires and hopes, state our reasons, and gradually educate those who must be our co-workers. Sentiment is most easily aroused; by popular health talks in the daily press; by directing the discussions and papers among civic organizations; by securing health Sundays and clean-up-day movements; and how easy it would be to take advantage of every boy's desire to be a member of an exclusive boys' club and to establish a "sanitary guard" in each school. These boys, if directed, would be powerful in producing sentiment in the right direction. As a result, in ten years we would be in possession of an electorate who would understand values.

4. *Method for Collection of Rural Statistics.* To advance rural hygiene, accurate vital statistics must be secured. The solution of this problem will do much toward placing us in the Federal registration area. The State Department of Health of Louisiana, thru the co-operation of the Postmaster General, has authorized all postmasters to act as local registrars. Thus Louisiana, by securing a large number of responsible local registrars situated in convenient and popular offices, has solved the problem. It has been suggested that North Dakota secure the permission of the same authority to appoint all riders of the United States Free Delivery as sub-registrars. They could perform the same duties in their territory as the village or town clerks. Each rider passes along his route daily. All cases of sickness, births, and deaths are forced upon his attention. How easy it would be for him to register births, to send notification cards to health officers and to issue burial permits. In this manner the question of securing accurate vital statistics and thereby advancing rural and city health conditions may be solved.

5. *Co-operation of Physicians.* Thus far our problem has been easy, but we have failed to devise a means for the notification of all cases of infectious and contagious diseases. At present, the co-operation on the part of all physicians is the solution. The law demands it. Thus even if we desired, we are unable to seek other agents. Under existing conditions it will be necessary to force co-operation from those who so far have failed us. What can we do

or say to bring this about? I am here tonight to plead for co-operation. The uselessness of the task must be apparent to you, because those I should like to reach and those for whom I might have prepared a message are, for the most part, not members of your society. The fact that they are not interested in your meetings places them in a class by themselves. These are the men who, because of greed and selfishness, cannot report cases of morbidity. Many try to justify their actions under the plea of professional ethics. But ethics and confidential relations cannot enter into the reporting of infectious and contagious diseases which, if not reported, may cause the death of unsuspecting citizens. The law demands co-operation on this subject, therefore its violation should not be permitted with impunity. Possibly, under the conditions, your society as a solid, co-operative organization can outline a plan which by its publicity will force other physicians to co-operate from fear of censure. With this in mind and the absence of a better solution, I should like to propose the following: That a city and a county ordinance be passed which will require the health officer to print weekly the number of cases of morbidity in the city and county, the names of the physicians reporting and the number which each reports. There can be but little doubt that those who are now failing to co-operate will be stimulated thru the advertising which this publicity offers. This plan may be distasteful to many. However, I believe it is mild compared with the one which will be eventually adopted for securing efficient and accurate morbidity returns.

Regulation of Public Utilities

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AS ordinarily used, the term public utility includes gas, water, heat, electric light, power, street railway, and telephone plants. An enumerative statement of the meaning of a term is, however, not satisfactory. In this article the term is used in its economic sense—a natural monopoly of a public necessity, excluding those which are essentially interstate in character.

I. THE NECESSITY FOR REGULATION

The necessity for regulation of public utilities lies in the nature of the public utility business.

In the first place, public utilities are natural monopolies. Natural monopolies are those which depend for their existence on natural forces as distinguished from social arrangements. They grow up independently of man's will; legislative enactments are powerless to prevent them. They are a result of the law of decreasing costs, or increasing returns, and this law is more potent than any statutory provision. It is clear, of course, that one gas company, by eliminating the duplication in manufacture and distribution, can produce gas cheaper than two gas companies. There is, therefore, an increment in gain resulting from combination that will overcome all obstacles. As a permanent phenomenon, competition in the public utility field is economically impossible. Where it does prevail temporarily it is wasteful and the invariable tendency is to combination and monopoly.

In the second place, the services rendered by public utilities are public necessities. Modern standards of living require pure water, efficient telephone service, gas, electric lights, and adequate transportation facilities. At one time these services may have been thought of as luxuries to be enjoyed by the few, but that time has passed and they are now recognized as urgent necessities for all urban residents. Moreover, they are rapidly coming to be regarded as essential for rural communities. To mention only one fact: the telephone has done, and is doing, a great deal to remedy isolation which is one of the most serious rural problems. In virtue of this fact the telephone is a rural necessity of the first importance.

These two facts, (1) that public utilities are natural monopolies, and (2) that the services rendered by them are necessities which

the citizens of a civilized nation cannot do without, put those in control of public utilities in a peculiarly strategic and responsible economic position. They are able, to the detriment of public welfare, (1) to render poor service, (2) to discriminate as between persons in service rendered, and (3) to charge unreasonable rates. And since private gain is the primary motive underlying business activity they usually do all three of these things. It would be ideal, of course, if competition could be relied on to control services and rates in the public utility field, but it cannot be. Consequently, government must undertake to protect its citizens thru regulation.

II. METHODS OF REGULATION

The rights and duties of public utilities and the rights and duties of the public are formulated in laws. Important as it is that these laws be adequate it is even more important that adequate means of enforcing them be established. Without the latter the former are impotent.

There are four methods of enforcing public utility laws; namely, (1) by law suit, (2) by the legislature, or municipal council, (3) by the people directly, i.e., thru the initiative and referendum, and (4) by a public utility commission.

Of these four methods, enforcement thru commission is easily superior to the others. It is elementary, of course, that any regulatory body must have a comprehensive knowledge of the public utility business before it can equitably undertake the task of regulation. The range of required knowledge is wide: it embraces (1) the law and its interpretation by the courts, (2) the construction, maintenance, and operation of public utility properties, (3) tariffs, (4) business administration, and (5) corporation finance. Thus the services of the lawyer, the engineer—civil, electrical, mechanical, and what-not—the accountant, the statistician, the financial expert, and the economist are needed in order to have adequate and just regulation. It is obvious that the courts, the legislature, municipal councils, and the people do not have all this complicated information, nor have they the time to acquire it. Indeed, it would be rather foolish to expect them to distract their attention from their various duties and vocations for the purpose of knowing these things. Only a special body of experts whose sole function it is to understand regulation can effectively and justly exercise the regulatory power. Moreover, in the commission, authority is centralized and responsibility localized.

In addition, however, it may be pointed out (1) that the courts can exercise only remedial power. They cannot lay down rules to

govern the future, and this is obviously necessary for effective regulation. Moreover, judicial procedure is slow, and trials are costly. (2) The legislature meets only occasionally. Regulation thru it would be spasmodic at best. Effective regulation requires continuous supervision. (3) To attempt regulation by the people directly is to throw the whole question into petty politics. One need only mention this.

There is no way to escape the fact that regulation to be effective and just must be thru commission: a commission of competent men whose sole function is to understand the public utility business in its relation to public welfare.

III. STATE VERSUS LOCAL COMMISSIONS

The state commission is undoubtedly superior to the local municipal commission. There are several reasons for this.

In the first place, the cost of instrumental equipment is quite heavy. The smaller cities cannot afford to purchase this equipment; there is no reason for the larger cities to do so—it merely involves duplication, and this is uneconomic.

In the second place, inter-corporate relations make it all but impossible for a municipality, with its limited and enumerated powers, to secure adequate data for regulatory purposes. The problem is a state-wide one, and sometimes interstate.

In the third place, only a state commission can secure the requisite comparative information essential for efficient regulation. Elaborate statistical studies, based on this comparative data, will often disclose to a particular community the grossest waste in public utility operation.

In the fourth place, public utility operations are not purely intra-urban. Inter-urban and inter-county development is very rapid. Consequently, unwise regulation in one city may hamper the development of utilities in another. Only a state commission can cope with this problem.

In the fifth place, a central commission affords better protection to investors thru its wider knowledge and its financial experts.

Finally, experience has demonstrated conclusively the fact that the state commission is further removed from politics than is the local commission. Moreover, the state commission is more likely to attract men who are actuated by motives of public welfare.

All this does not mean that purely local matters are not left in the hands of local authorities, but it does mean that efficient regulation is beyond the reach of the municipality unaided, and that the state commission is fundamentally necessary.

IV. ESSENTIALS OF A REGULATORY POLICY

The essentials of a comprehensive regulatory policy may be dicussed under the following heads: (1) the indeterminate permit, including the exclusive grant and purchase features, (2) valuation, (3) depreciation, (4) capitalization, (5) accounting, (6) service standards, (7) rates and rate of return, (8) municipal control, and (9) conclusive findings of facts and burden of proof.

I THE INDETERMINATE PERMIT

The perpetual franchise is merely an aggravated form of the term franchise. Consequently, all the disadvantages of the term franchise appear in their worst form in the perpetual grant. It is, therefore, unnecessary to discuss the perpetual franchise separately, for both experience and theory condemn the term franchise.

In the first place, the term franchise is inelastic. It matters not whether the restrictions embodied in it are few or many; it matters not whether the term is long or short. The term franchise is too inelastic to meet the requirements of rapidly changing economic and social conditions. For most communities future conditions and needs cannot be foreseen even over short periods of time; the growth of the community cannot be foretold, changes in the arts embraced in the public utility service cannot be predicted, the requirements for the performance of adequate service at reasonable rates cannot be prophesied. It is certain, then, that a term franchise will work badly either for the public or for the public utility.

In the second place, a limited franchise imposes a useless burden on the public. Provision must be made for the amortization of the investment during the life-time of the franchise. But the need for the service does not terminate with the franchise grant. This requires the public to pay, in addition to a reasonable return on the investment, the value of the investment during the period for which the franchise runs. Or, assurance must be given that the grant will be renewed which aggravates the problem of inelasticity or introduces the problem of political chicanery.

In the third place, the renewal of the franchise gives rise to a lot of political manipulation. Superficially, the interests of the public and the public utility are quite divergent; the one usually wants unreasonably good service at unreasonably low rates; the other, unreasonably poor service at unreasonably high rates. And usually the city authorities are no match for the accomplished lawyers of the corporation. Nor is the electorate, uninformed in the intricate details of the problem, in a position to decide the matter. The

immediate result is political intrigue and the ultimate result is that the city ties itself up for a period of years in a contract in which public interest is more or less submerged.

In the fourth place, not only are the utilities unwilling to make extensions under the term franchise, but often are unable to secure the necessary capital with which to do so. Thus is community development retarded and distorted.

In summary, the total results of the term franchise are (1) to saddle the community with an inelastic contract which cannot meet changing economic and social conditions, (2) to impose an unnecessary burden on the public by forcing it to amortize the investment during a relatively short period, (3) to induce political chicanery, and (4) to retard community development and unsettle investment conditions. All this means inadequate service and unreasonable rates. Moreover, it means friction; friction between the public utility and the public which jeopardizes the fundamental interests of both.

The objections to the term franchise are largely overcome by the indeterminate permit with the provisions (1) that the public may revoke it at any time upon payment of the fair value of the utility property and (2) that the grant is exclusive. This sort of franchise has all the advantages of the long term or perpetual grant—chiefly settled investment conditions. Adequate protection is afforded the investor in the purchase clause. The exclusive feature eliminates the wastes of the competitive duplication of plants. It is elastic: the public is in a position to work out its own 'salvation' by taking over the plant when dissatisfaction becomes serious enough. The experience of Wisconsin and other states that have adopted the indeterminate permit conclusively proves its effectiveness.

Retroactive action is not legal nor just, but provision may be made for permitting any utility to exchange its term franchise for the indeterminate permit. And with the expiration of a term franchise it should be superseded by the indeterminate one.

2 VALUATION

Valuation is necessary for the purposes (1) of determining the amount that ought to be paid by a municipality should it take over a utility and (2) of fixing rates. The object of valuation, obviously, is to establish a fair relationship between the purchasing municipality or the rate-fixing body on the one hand and the public utility on the other, and the monetary measure of this relationship is investment. The public utility cannot justly be required to sell its business for

less than it has necessarily spent in establishing it, including risk cost, nor can it equitably be required to accept a reasonable return on a less amount. On the other hand, it cannot expect to capitalize its monopoly position and place a value higher than necessary investment on its properties.

3 DEPRECIATION

Depreciation may be defined as a decline in value. It is of two sorts: (1) physical depreciation, or a decline in value due to wear and tear, and (2) functional depreciation, or a decline in value due to obsolescence or inadequacy.

Of the fact of depreciation there can be no doubt; the relation this fact bears to investment is not so clear. It is usually held that investment is measured by cost new less depreciation. This position, obviously, assumes that market value is identical with service value. But this is by no means true. Moreover, it assumes that, altho the service value may remain unimpaired, the utility ought to charge rates high enough to cover the decline in market value. This would be, patently, foolish.

Of course, to the extent that depreciation represents a decline in service value provision should be made for replacement. And where no such provision is made it amounts to payment of dividends out of capital, mismanagement, or unwise investment. In any of these cases depreciation should be deducted from cost new to determine investment.

The degree to which depreciation indicates a decline in service value depends wholly on the size of the utility and the multiplicity of items involved. In practically all small utilities there is no serious error in identifying the two phenomena. Consequently, it is substantially correct to accept cost new less depreciation as the criterion of investment. But for the largest utilities this would be entirely uneconomic and unjust.

Depreciation ought to be accounted an operating expense. A failure to make sufficient allowance for depreciation amounts to confiscation. On the other hand, too great an allowance amounts to extortionate rates. This is a complex problem which we cannot discuss further at this time.

Inadequacy may ordinarily be foreseen and provision made to meet it. But obsolescence usually cannot be predicted. It, therefore, exists as a risk of the business. Risk involves cost, and this must ultimately be paid by the consumer. This risk is reduced to a minimum if an item is considered obsolescent only when the saving

in operating cost is as great as the increase in capital charges incident to its adoption. Thus altho it is not possible to construct obsolescence 'mortality' tables it is possible to insure against fortuitous changes in the art of production. This policy has the same economic validity that all insurance has: the elimination of risk, and the consequent reduction of costs.

4 CAPITALIZATION

Evidently stock and bond issues may be treated in three ways (1) there may be no state control of issues, (2) there may be absolute control of securities issues, and (3) there may be a modified form of state control.

The first method is manifestly fraught with evils and abuses and must be discarded.

The second amounts to state authorization of issues. This method is invalid. In the first place, it is a substitution of the managerial power for the supervisory power. The state cannot exercise the managerial function. It is absurd to think that any commission can, with its manifold other duties, comprehend business situations as fully as can the managers of a business. It is equally absurd to suppose that business opportunity waits for commission decisions. The delay incident to commission decisions will result in clogging the industrial machinery. In the second place, careless authorization or authorization based on insufficient evidence would go a long way toward destroying public confidence in regulation.

Moreover, a difficult legal situation presents itself. It is not yet settled whether authorization constitutes validation. If this should be the case it would force capitalization into rates. But whether legally so or not, it would be ethically true. Further, validation of subsequent issues validates all prior issues. This would introduce into rates all the 'watered stock' of the past and force the public to pay a return thereon.

The third method, publicity of issues, seems to be the valid one. Pure food laws are passed on the theory that a man should be informed as to what he is buying and not that he should be told whether a particular article is good for him or not good for him. Likewise the state should undertake to inform the prospective investor of the conditions surrounding the issue, but emphatically it should not say this is a good stock and that is a bad bond.

However, certain specific abuses may be directly prohibited, as for instance, (1) stock and bond dividends, (2) the purchase of less than all of the stock of one corporation by another, and (3) the issue of bonds in excess of paid in capital stock.

In this way we leave the managers free to run their businesses. Full publicity prevents any undue inflation in securities issues. The bond-holders are amply protected. A difficult legal situation is avoided. The state does not give its sanction to conditions that it has no expedient way of knowing much about.

5 ACCOUNTING

The functions of accounting are threefold: (1) the determination of the cost of rendering the service and, therefore, of estimating earning power. This is of importance in fixing rates. It furnishes the investor with the information necessary to discover the validity of securities. (2) Accounting furnishes the data necessary for comparative studies. This oftentimes enables a utility to lessen its operating costs. (3) Accounting furnishes an admirable index of the economic development of communities.

To do all this, however, accounting must be uniform. It must conform to the principles of good accounting, and yet be elastic enough to meet the requirements of utilities of various sizes and operating conditions. Without an adequate system of accounting regulation cannot be effective.

6 SERVICE STANDARDS

Poor service is uneconomical and a fruitful source of complaint and dissatisfaction. It is, probably more than any other one thing, the cause of the ill feeling that sometimes exists between the public and the public utility. And this is harmful to the interests of both.

But more than mere dissatisfaction is the fact of positive detriment to public welfare. Unsanitary water is obviously unsocial. Low water pressure may result in serious loss by fire. Improper extensions, on the part of a street railway, may direct the development of a city in an undesirable way. Too high voltage in the electric service may injure lamps and too low voltage may injure eyes and health. Poor telephone service is more than annoying.

In order to remedy this situation it is advisable for the state to prescribe proper service standards. For instance, the Wisconsin commission requires of all utilities that the heating value of gas be not less than 550 British thermal units at any time and that the monthly average be at least 600 British thermal units. This gives a heating value sufficiently high for lights, cooking and power, and at the same time has regard for manufacturing costs.

In the nature of the case service standards are not static. There must be continual supervision and revision by a central commission.

Supervision is effective if state inspectors, analogous to state bank examiners, are appointed.

7 RATES AND RATE OF RETURN

Control of rates is obviously essential. The determination of the proper rate of return is, also obviously, a difficult undertaking. Rates should be high enough to permit a return that will attract capital into the public utility field; but they should not be higher than this. It is well understood, of course, that capital is subject to the universal laws of competition, and that this competition affects North Dakota as well as the rest of the world. The rate of return is, therefore, determined by forces beyond the control of man. But it may be discovered. The money market reflects it. Consequently, any regulatory body should busy itself with finding out what the particular rate is in its particular locality.

Rather than retard the development of public utilities, however, it is better to err on the side of too high a rate than too low a one. As a matter of fact, tho, it is possible to determine with approximate accuracy the proper rate; it is usually the normal return to capital in a particular community. But risk must be duly considered.

8 MUNICIPAL CONTROL

The degree of municipal control presents an interesting problem. Probably the experience in Wisconsin has been most satisfactory. The law there provides that municipal councils have power (1) to determine the quality and character of service of any utility operating in the city and to fix the charges therefor, (2) to require of any public utility such additions and extensions as may be reasonable and necessary for public service, (3) to designate the location and nature of such improvements, the time in which they must be completed, and the conditions of construction, (4) to provide a penalty for non-compliance with any of its requirements. In all cases, however, the commission has the power to set aside any municipal requirement.

The wisdom of constituting the state commission a board of review is clear. Only a state commission, as was pointed out above, can have the fundamental data necessary for the most efficient and just regulation.

It is immaterial whether the municipality merely regulates or whether it owns it plant. Central supervision is requisite. It matters not how public spirited the men who operate the utility may be,

they are not in a position to know the essential facts of regulation as well as the body of experts whose sole function it is to know them.

9 CONCLUSIVE EVIDENCE

An essential of sound regulation is that the findings of facts of the commission should be conclusive, and that the courts should pass only on matters of law. This is obviously true because the commission is in a better position to weigh the facts than is the court. Moreover, the burden of proof should invariably rest on the public utility in any case. I may rest my case on these points by citing the effect on national regulation of such clauses in the Hepburn act of 1906. Those at all familiar with the history of regulation know that the Interstate Commerce Commission has been much more effective since that time than before it. It spells the difference between judicial regulation and administrative regulation.

V. CONDITIONS IN NORTH DAKOTA

1 WATER, GAS, LIGHT, HEAT AND POWER COMPANIES

The Laws of North Dakota relating to water, gas, light, heat, and power companies, in so far as regulation by the Board of Railroad Commissioners is concerned, are found in Chap. 208, Laws of 1915, sections 1 to 5 inclusive. It is here provided (1) that the Board of Railroad Commissioners may fix the rates to be charged by the utilities mentioned when (2) petitioned by 20% of the qualified electors of any community, or when the local council may, by majority vote, resolve that the rates are unreasonable.

These provisions are wholly inadequate to promote public welfare.

2 TELEPHONE COMPANIES

Laws regarding telephone companies are found in Chap. 209, Laws of 1915, sections 1 to 16 inclusive, sections 4813 to 4821 inclusive, sections 4784, 4785, 9230, 9941, 10043.

The essential provisions are (1) publicity of rate schedules, (2) state control of rates and service upon complaint of the telephone company, municipality, or 25% of patrons, (3) uniform accounts, (4) valuation of property, (5) certificate of public necessity and convenience, (6) physical connection, and (7) penalties.

This is by far the most adequate law regarding public utilities.

3 STREET RAILWAYS

Section 589 of the Compiled Laws of 1913 gives the Board of Railroad Commissioners control over common carriers operated

by steam. No authority is given over common carriers operated by electricity.

4 RELATION OF COURTS TO COMMISSION ORDERS

The relation of the courts and commission seems to be conducive of public welfare. My information from the Secretary of the Commission is that in only one case has the court overruled a decision of the commission. Nevertheless, in law the provisions are inadequate. Section 4744 of the Compiled Laws of 1913 provides that the report of the commissioners is prima facie evidence in a case. But no provision is made for considering the commission's findings of facts as conclusive, nor is the burden of proof put on the complainant.

VI. LEGISLATION

If the conception of the problem of regulation, as outlined above, is correct, it would seem that some provision should be made (1) for the indeterminate permit with the exclusive grant and purchase features, (2) for making the commission's findings of facts conclusive and for placing the burden of proof on the public utility, (3) for enlarging the jurisdiction of the commission to include electric railways and (4) for increasing the powers of the commission so that it could (a) make valuations of all public utilities in the state, (b) supervise the issues of securities by public utilities, (c) require uniform accounts of all public utilities, (d) fix service standards and determine rates, (e) act as a board of review in franchise relations between any community and any public utility, and (f) supervise municipally owned plants.

Notes From an Agricultural Field Trip Across North Dakota

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FOR the purpose of making a preliminary agricultural survey of North Dakota, I made a 520 mile field trip diagonally across the State in the spring of 1916. The means of transportation was a strong heavy top buggy, drawn by two bronchos. The route of the trip, in general outline, was from the southwest corner, on the South Dakota border, to the northeast corner, on the Manitoba border. More specifically, the itinerary began on a ranch at Hettinger, Adams County, and led northwest to Medora in the heart of the Badlands, thence in a general northeasterly direction, past Langdon, Cavalier County, and into Manitoba at Mowbray. The Missouri river was crossed on a ferry at Washburn, there being no wagon bridges across this river in North Dakota.

The trip was made in company with William L. Johns, an advanced student in agricultural economics at the State University. A complete camping outfit was taken along, to use in case of necessity. But it proved to be a convenience rather than a necessity, for we found plenty of farm houses or ranch houses, even in the most sparsely settled portion of the State. The greatest distance between settlers' homes on the whole trip was but five miles, and this in only one or two instances. And as for drinking water, here too our supply in our water bag proved a convenience rather than a necessity. We could have found drinking water in abundance along the way, but the water bag was very convenient for making cocoa when we made a noonday camp by the roadside.

Certain social conditions may be briefly mentioned, before speaking more particularly of the economic features of North Dakota agriculture. The tremendous masses of foreign-born is the most striking fact in North Dakota's social life. During the thirty-day drive we succeeded in staying over night at a farm house almost every night, and yet we spent the night in only three American homes. Indeed, outside of the villages, we found very few Americans. Immigrants have settled in such compact groups, particularly the Germans coming from the old German colony near Odessa, Russia, (and given in the federal census as "Russians") that their children, even their children's children, do not become Americanized. One night was

spent in one of these "Russian" homes where the father and mother had both been born in North Dakota, yet, of the four children in the home, none of them could speak or understand English. It sounded very strange at the table to hear this American-born father reprove his second-generation-American-born daughter in this fashion: "Maria! lassen Rudolph in Ruh'." But Maria could understand no other tongue. The compact settlement, the parochial school, the German paper,—all combine to prevent these little Americans from being Americanized. There are six papers published in the State in the German language. According to our federal census of 1910, North Dakota has a population of 577,056, of whom 407,394 are of foreign parentage. These are chiefly Scandinavian, German, and British. The census figures show Scandinavians, 173,000 (composed of Norwegians, 123,000; Swedish, 27,000; Danes and Icelanders, 12,000): German-speaking, 133,000 (composed of "Russians" 62,000; Germans 60,000; Austrians 11,000): British 64,000 (composed of Canadians, 52,000 and Irish, 12,000). In most Scandinavian homes, however, we found the man of the house able to speak English, and, in every case, the children spoke English freely.

The estate of the foreign woman, particularly among the "Russians," is very lowly. To this general statement there are a few conspicuous exceptions. As a general rule, when eating in these homes we found the "women folks" would stand respectfully behind our chairs or remain in the background completely. The man seems to be literally lord and master of the home.

LOCAL ELEVATORS

North Dakota being primarily a grain producing State at this particular stage of its agrarian evolution, it will be necessary to speak at this point of one phase of grain handling, namely, the local elevator question. North Dakota has 2,000 local elevators with a total storage capacity of 60,500,000 bushels. Allowing each elevator a conservative turn-over of six times a year, we have storage enough to handle 363,000,000 bushels of grain, an amount of storage much in excess of present needs. At grain shipping points the custom is to erect from four to seven houses with capacity ranging from 20,000 to 40,000 bushels each. The average house is 30,000 bushels, costing \$7,500, or twenty-five cents a bushel. Thus a 40,000 bushel house should cost \$10,000. Local elevators are of three classes, according to their ownership: farmers' elevators, 485; independent elevators, 540; and line elevators, 975. The line elevator is owned by a large mill or grain dealer, usually, that maintains a "line" of

houses along one or more railroads. Most of the farmers' elevators are called "cooperative," altho probably only half of them are based on strict cooperative principles—dividends on stock limited to some per cent such as seven or eight; balance of net earnings distributed as a patronage dividend on bushels of grain delivered; one-man-one-vote. In farmers' elevators a difference of practise prevails concerning admission of bankers and business men to membership. The problem is solved in a few cases by admitting these men, but limiting shareholding to eight shares to one person, by limiting voting power to one vote to one person, by limiting office holding to farmers, and by limiting dividends on stock to seven per cent. In this manner control of the corporation and all surplus earnings remain safe in the hands of the farmer. A few elevators have in their by-laws a so-called "penalty clause," imposing a penalty on members delivering grain to competitors. But this clause is rarely enforced, and then with disastrous results. Elevators are weak in the matter of bonding their manager. Many farmers' elevators employ a local farmer for manager and then refuse to place him under any kind of surety bond, on the ground that they know him to be honest in advance. The pay of a good manager is often inadequate. The compensation ranges from \$75 to \$175 per month. An almost universal weakness in the farmers' elevator is the financial reserve or surplus. Very few maintain any reserve fund whatsoever. Many are heavily mortgaged and provide no sinking fund. Indeed, some with a heavy mortgage soon maturing and with foreclosure staring them in the face nevertheless declare big dividends and let the crash come. An increasing number are adopting the Government bookkeeping system. Perhaps the most vital need at the present time is a uniform accounting system. As is well known our State Banking Department maintains a careful audit of all State banks thru a force of Bank Examiners. Our Railroad Commission has supervision over the grain elevators, their storage tickets covering deposits of grain, and other matters pertaining to the elevator business, but thus far the State has made no adequate provision for a financial examination of the elevator. Line elevators are audited from the central house in a thoro manner. But thus far the farmers' elevators have neither a state system nor a self-developed system of auditing. This stands to-day as their unsolved problem.

The farmers produce grain from fields which year by year show a marked increase in foul weeds. Yellow mustard, kinghead, cockle, and wild oats are the commonest kinds. Elevators now "dock" the grain a certain number of pounds per bushel, thus allowing for the

foreign matter found in it. But with the increase in the cost of feed stuffs, there has come to be a great market value for the "screenings" consisting chiefly of the weed seeds screened out of the wheat and other grains. This situation has caused the farmer no little concern over the dockage and screenings question. There are now four ways of meeting this problem. (1) The local elevator cleans the grain, giving the farmer the screenings and charging him one cent a bushel and in some cases two cents a bushel for the work. But this can be done only in slack seasons, for during the wheat movement, the elevator is swamped with its own business. The farmer receiving his screenings returns them to the farm and grinds them for stock feed. If the screenings are not ground, they may scatter foul seed about the place. (2) The local elevator may clean the grain, ship the screenings in carload lots to the terminal market. In this case the farmer is docked on the foul matter in his grain, and allowed nothing for the screenings. One manager last year made \$2,000 on his screening; another made \$5,000. The screenings were sold at fifteen dollars a ton. If the elevator is a farmers' cooperative elevator, these earnings are prorated back at the end of the year. If it is a line or independent house the farmer gets nothing back. (3) The farmer may ship his own grain to the terminal market, have it cleaned there and the screenings sold. In this case he gets full price for his screenings and escapes with little or no dockage on his grain. (4) The farmer may ship his own grain to the terminal market and sell it there uncleaned. In this case he suffers the dockage which the State Inspection Department finds he deserves, is out of pocket the freight on the screenings, and may also lose one grade in his grain by reason of the foul matter in it.

While failures among farmers' elevators are numerous these failures will doubtless prove to be the stepping stones to success in the future. The farmers' elevators are now gaining in number much faster than the other kinds of elevators.

CREAMERIES

Cooperative creameries are having a mixed success. In one county, for instance, out of five once active cooperative creameries, two were found still running and three either dead or in a state of suspended animation. Grain farming enters a region and drives out the creamery. Labor is scarce. Creameries are promoted by agents with machinery to sell, in regions where there is not a supply of milk cows. The centralizer creamery, doing business on a big scale, is able to drive out the small creamery in some cases. With

the coming of more diversified farming the local creamery will flourish, it is hoped.

SPECULATION AND LAND VALUES

Speculation is not confined to the produce and stock exchanges of the city. Indeed, we find the contrary is true. Unorganized speculation, unmitigated by rules and hence unlimited both as to its extent and in its sharp practises is found exceptionally active in connection with the land, in both farm land and village land.

Even the homesteader in most cases seems to be a land speculator. In one county, homesteaded eight years ago, four fifths of the homesteaders have now quit their land. They either sold outright, or borrowed on a mortgage, and abandoned their claim. In other words, most of these homesteaders were not seeking a home, but a speculation in land. The tumble-down sod-house, left by these departing homesteaders in some sections, gives the country an unprosperous appearance usually out of keeping with the real facts. Occasionally a bonafide homesteader stays by the land. In one section homesteaded sixteen years ago, we found one Norwegian farmer of the most progressive type, with a new modern house, new barn, and fine live stock and farm equipment. He had bought out his three homesteading neighbors. Near this place was another farmer who had bought out six homesteading neighbors. On his farm of seven quarter sections he had just erected a modern, \$8,000 house, hard-wood finish, electric light, hot water heat, bath and toilet. Another farmer who had homesteaded in 1882 now has eight quarters, having bought out his seven homesteading neighbors. He too has a large barn and strictly modern house of sixteen rooms. The flight of the homesteader is one phase of land speculation. Each tiny village now boasts one or more "Real Estate Agents." Some of these do a regular commission business in land on strict commercial principles. They are well established and perform a service to the community. At the other extreme, however, and using the same honorable title, are a class of scalpers who are in and out of the real estate market, and who have a well-earned reputation of fleecing the "suckers" whom they catch. One farmer, for instance, was brought from Iowa with his wife and family and savings of half a life time, \$15,000. He was influenced to buy a half section of farm land which, at that season (April), looked to be worth the price, namely, seventy-five dollars an acre. The land was bought. It proved to be an alkali tract, and not fit for tillage. In fact the purchaser learned later that the tract had been listed for sale with

a bona fide real estate agent at twenty-five dollars per acre. The purchaser abandoned the place at the end of the first season, losing his payment of fifteen thousand dollars, and becoming a renter. If real estate speculation were carried on on an open public organized market, like the grain exchange, deals so near to fraud as this could be eliminated. It is difficult to say what per cent of the farmers expect to make their money farming their farms and what per cent expect to make their money by selling their farms, but it is likely true that the average farmer is one-third farmer and two-thirds speculator.

One village, some two years old, has hit upon a plan for avoiding speculation in town lots. No person is permitted to buy a lot in the village without first making a satisfactory contract to erect a building on this lot. This precaution was taken thru fear that a larger and older village a few miles away might quietly step in, buy up all the desirable lots, hold them idle, and thus put a quietus on the infant rival.

MISCELLANEOUS

Good Roads.—We drove across the State in June and July and found the roads generally in good condition, thanks to nature. Weather conditions were such as to leave the roadway in good order. Mention should be made of the fact, however, that the Yellow Trail, the Red Trail, and the Wonderland Trail showed the good results of much scientific road making. These highways are a boon to the traveler. Now that the farmers are investing in automobiles the construction and up-keep of trails and country roads seems assured.

Fences.—The western part of the State is still in the barb-wire state. Barb-wire is looked upon as cheaper than woven wire or other forms of fencing. But considering the heavy toll taken annually in maiming or killing the live stock of ranchers and farmers, it is probably the most expensive fence in existence. The first cost of other kinds of fencing, in connection with the scarcity and high cost of credit, prevents the abandonment of this cruel and dangerous fence. The problems of securing fence posts is also a big one. We noted that along the Northern Pacific Railway, particularly near the Badlands, that ranchers and farmers were given the old railroad ties as fast as they were displaced with new ones. The demand for these ties was very keen. In one case we noted more than a dozen individuals waiting while the section hands removed the worn ties. These ties are used not merely for fence posts, but also for building stables and sheds, and for fuel. On the Great Northern

Railway, so far as we observed, all worn ties are removed, carefully piled on the right-of-way, and burned. This happens on the high prairie, where no wood is to be found in many miles. Perhaps the logic of the road is that the settlers should exploit for fuel the great deposits of lignite that underlie most of this sparsely settled section.

Banking.—The part played by the village bank in developing the rural community in North Dakota is very notable. The bank building is frequently the first building erected in the village. The banker is "Philosopher, guide and friend" to the farmer as well as to the business man in the community.

Tenantry.—Tenantry, while not of great extent at present (above fifteen per cent of the farmers) is rapidly increasing. The ill-kept farm of the renter is becoming more and more in evidence, as the older farmers retire to the neighboring village to live.

Tractor vs. Horse Power.—The contest between tractors and horse power is now at its highest. We found many tractors standing discarded, rusting in the fields. We found the young attorney for a large tractor company with a valise full of chattel mortgages ready for foreclosure, taken on the farmers' live stock, implements, etc., in exchange for tractors. The attorney estimated that four-fifths of the farmers buying tractors were bankrupt in the end by doing so. However, other farmers considered that the horse was the costlier machine of the two, working but 100 hours in a year and costing \$85.00 for feed.

Prosperity.—The general impression of the farmers' prosperity may be stated in this manner: The farmer with brains and good health is more prosperous than his city brother of similar attainments. A fair per cent of farmers, as with all other classes, are not prospering. Yet considering their investment of money, brains, and time, it is believed that they actually enjoy more material prosperity than any other class of people making a similar investment. The great mass of the farmers, however, certainly do not use their land up to its full efficiency. Agriculture may be said to be in a generally low state, both as regards production and marketing.

The Land, the People, and the Schools of South Africa*

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THE late Professor Henry Drummond somewhere describes South Africa as "the Land of Dust and Flies." A more recent Australian traveler volunteered the information that South Africa was "a washed out country full of stoney rises." Both these travelers suffered from insufficient data and their judgments are faulty. There is dust and it sometimes drives thru the country like a blizzard. And there are flies of innumerable species. But a brief residence in that land will make a man immune to the attacks of the flies, and the dust will be welcomed as the harbinger of the fructifying rains.

THE LAND

The physical features of a land have a great deal to do with the thought, manners and customs, and general characteristics of the people. Around the coast of South Africa runs a fringe of low-lying land the belt in which malaria, lice, ticks, and snakes make their home. From this narrow fringe the land begins to rise in a succession of ledges surrounded by mountains. The local name for the country within the mountains is "basins." You advance upward and inward by climbing the mountain, crossing the ledge and climbing the mountain again on the further side which is the higher side of the basin until you reach the vast table-land in the center of the country which is the ideal South Africa. From the coast to the table-land may be 150 miles inland as at East London or only 50 miles as at Cape Town or even 350 miles as at Durban, Natal.

Cape Town is built along the fringe by the sea-shore at the foot of Table Mountain which rises precipitously behind the city to a height of 3,500 feet. Johannesburg is built on the table-land

* Much of the data in this article will be found in the Reports of the Educational Department of the Cape Province to the Legislature of that Province. I would draw special attention to the Report of 1909 which is of the nature of a survey of the progress of education during the years 1892-1909. The Appendix II. of the report for 1912 is also of great value. The Cape Town Educational Guide of 1914 will show the educational facilities in the Cape Province Capital. I am also greatly under obligation to Dr. Thomas Muir, C.M.G., Superintendent-General of Education for the Cape Province, pro-Chancellor of the University of the Cape of Good Hope, South Africa. Dr. Muir is one of the greatest educational authorities in the British Empire.

5,000 feet above sea level and 500 miles from the nearest coast-line. In a land where the physical differences are so vast within so small an area and where Nature plays her fantastic tricks with every turn of the wheel of time, you will expect an alert, mobile, quick-witted, and progressive people. This people you have in South Africa.

Nelson's latest Encyclopedia states with truth, "South Africa is said to be the finest maize growing country in the world, owing to its highly favorable climatic conditions, especially abundance of sunlight and a long growing season." This is not an article on Agriculture altho something might be said under that head in regard to the splendid Agricultural College at Stellenbosch, but it is a well known fact that South Africa has marvellous recuperative powers and after a long spell of intensely dry weather a three days' rain will speedily turn the arid country into a veritable garden. The land is now known for its gold and diamonds; it will yet be known for its agriculture. Corn, cattle, and mohair are its principal products on the farms, but cotton, ostrich feathers, wool, grapes, bananas, peaches, oranges, and apples are fast coming to the front, and this variety of products will make a strong appeal to the modern agriculturist.

The Union of South Africa (U. S. A.) is a federation of self-governing States or Provinces called the Cape, the Transvaal, Natal, and the Orange Free State. The Cape Province has a Protectorate in Bechuanaland and both the Cape and Natal have large Native Reservations known respectively as Kaffraria and Zululand. Rhodesia is not yet an integral part of the Union but maintains its own government under the Charter Company. This form of Government has become an anomaly in the British Empire and it will not be long before Rhodesia will make the newest and largest addition to the Union. Right in the heart of the Union however is another little country the inhabitants of which are a warlike people who have never been conquered in war. Basuto-land is completely surrounded by Union territory and it is governed by Native Chiefs acting under the advice of an Administrator who reports directly to the Colonial Office in England. Basuto-land has been called the Alps of South Africa and no white man is allowed to take up residence in the country without permission of the reigning Chief and the British Administrator.

The total area of British South Africa including the Union, Rhodesia, and the Dependencies is 1,758,831 square miles. If we include the recently conquered territory of German Southwest Africa which the Union Government has declared it will not surrender

(vide speeches by Prime Minister Botha and Secretary Smuts at the Cape University Convocation 1915) the total area will then be 2,081,281 square miles. The total area for the United States of America is given as 3,026,789 square miles which would make British South Africa a little more than two-thirds the size of our country. The great need of both countries however is a sufficient and worthy population. While our country has a population of more than 90,000,000 whites, South Africa has only 1,160,018 whites and a total population of 7,660,280. The table-land country is eminently suited to a white population and when the settlement facilities have been developed there as here, South Africa may be expected to maintain a vast population.

THE PEOPLE

South Africa is the most kaleidoscopic ethnologically of all the British possessions. Both pre-historic and historic peoples of many races are found within its borders. The first settlers were evidently the Hottentots, a people akin to the Bushmen. Who preceded the Hottentots is too remote for any historic statement. The Hottentots came from the north and under the pressure of succeeding invasions have practically died out, altho a mixed people still called by that name bear occasional traces of the Hottentot settlement. They were succeeded by the strong virile Black races now inhabiting the land. These people coming from the north swept down thru the country with fire and spear taking the weaker nations captive or putting them to death. Many of the captives became slaves to the conquerors, and the Kafir War of 1860-70 was waged by the British against the Tembus to free the Fingoes from slavery. Altho broken into various tribes and separated by wedges of white people all these natives bear a likeness to one another and with one or two exceptions derive their habits, customs, and languages from the same general sources. They are known as Bantus and are related to the nations of central and northern Africa. When the Arabs began their slave raiding in Africa they called the inhabitants "Unbelievers," i.e., Kafirs, and Kafirs they are called to this day.

The next settlement is historical and comparatively modern, and began when the Dutch East India Company took possession of the Cape in 1652. For a time this immigration from the south met with little opposition. But soon the virile Dutchman came into contact with the equally virile Kafir and then began that long series of wars which culminated in the recent Boer War of 1899-1902. The main question at the bottom of this long series of conflicts was

the essential right of man of whatever color to live a free life unfettered by slavery to another. The Dutch settlers from Holland were Protestants of the Presbyterian faith and to that faith they have remained true. They have retained their love for literature, art, and science and in spite of their comparatively isolated life they have maintained their place in the progress of nations.

The eighteenth century witnessed the fierce persecution of the Protestants in France. The storm-driven Huguenots fled from France to America and South Africa. In the latter country they received a warm welcome equal to the cordial welcome given to them in America. Many of the Huguenots belonged to the best families of France and they carried with them to their new home the culture and industry of Old France. The vast vineyards of Constantia are the direct result of the French settlement. From these two European peoples, representative of the best culture of their age, democratic, progressive and intensely religious, has sprung the modern South African Boer, or as he prefers to be called and calls himself, Afrikander. The intermingling of the French and the Hollanders has produced some strange contrasts in physique. A well known clergyman possesses the French name of Naudé, and is French in size and gesture but has a characteristically heavy Dutch face.

The third settlement of white people took place in 1820 after the British Government purchased the Cape Colony from the Dutch for a sum exceeding twenty-nine million dollars. A band of picked men and women of the middle classes well educated, intelligent and of high moral caliber settled in eastern Cape Colony and are known as the Albany Settlers. The majority of the people had been raised within sight of the famous Canterbury Cathedral and they were as strongly religious as the former settlers. Special ships were chartered by the British Government to convey them to that far off land and most of these ships were three months making the voyage which today may be made in three weeks. From the Albany Settlers has sprung the present race of British Colonials.

The last important settlement was that of the German Legion. During the Crimean War of 1856 a German Legion under Commandant von Linsingen fought on the side of the British and as a reward for their services were offered grants of land in South Africa. Practically the whole of the Legion accepted the offer and under their Commandant were brought to England and stationed at Colchester to await transportation. While the Legion lay at Colchester some of the men became acquainted with the English language and people, at least sufficiently well for some of the soldiers to persuade

English girls to marry them and to accompany them to Africa. These men have proved fine citizens, progressive farmers, and capable politicians.

By frequent intermarriages these Hollanders, French, British, and Germans are being moulded into one people, especially in the Old Colony, the Cape Province. English and Holland Dutch are the official languages of the country, and English and Taal are the media for business and private life. The Taal is a language in the making and consists of words from the four European languages represented in the various settlements, together with many words from the Hottentot, Malay, and Kafir. This language is easily learnt by whites and blacks and is the common medium between the white and the black. The Taal is sometimes called the Low Dutch and owing to the predominance of Holland words in its composition it is the most used of all the tongues in that country. In fact so widely spread is its influence that it has recently been determined to lay the foundations of South African literature in that tongue. As will be easily understood the Taal makes no pretence to be grammatical or constructive; it is more useful than ornamental. But it is the people's speech and so the leaders in educational affairs both in the University and the Schools have taken the task in hand to build up simple school books, to translate well known books from the various languages represented in the country and thus to make the Taal the medium of communication not only in the mart and the home but also in the school, the Church, and the Legislature. In the present pioneer state of the work it is almost heresy to speak of the Taal as the future language of the people, but when the task is accomplished it will be one of the greatest forces in the country to unite the differing peoples both white and black into one common national existence.

I have heard the South African Whites described in very opprobrious terms. Their ways may not be our ways, their manner of thinking even may differ from ours, but they are the strong virile descendents of the most progressive nations this world has ever seen and they retain their love for the literatures and arts of their Fatherlands. Cecil John Rhodes has laid the world under contribution to his educational advantages; Jan Hofmeyer, educationalist and politician; John X. Merriman who has been classed with the first three of the world's greatest political financiers, Sir Percy Fitzpatrick, Sir Abe Bailey, Sir George Farrar, millionaires and educationalists; Sir Gordan Sprigg, W. P. Schreiner, General Louis Botha, Prime Ministers and friends of the people, these and a host of others

are men of culture identified with the land of their adoption or birth and seeking without intermission the highest welfare of the people. Nor should we omit Lord de Villiers, the first Afrikaner to be raised to the British peerage after many years of service as the Lord Chief Justice of the Supreme Court of South Africa.

The Bantus or Kafirs are the most enlightened and the most susceptible to civilizing influences of all the negro races in the world today. Altho a heathen, perhaps it would be more correct to say a savage, the Kafir is not without religious instincts and customs. His religion is of course bound up with his tribal life, and failure to observe the rites and obligations of his tribe will ostracize the offender and deprive him of the rights of citizenship in the tribe. Only a few of the Kafirs at present possess the right to vote in legislative elections owing to the fact that the vote demands both educational and financial qualifications. Many of the natives have the latter but not the former, but with the rapid strides in the present educational policies deficiencies are being made up and the number of Kafir citizens claiming full voting powers is increasing. Conformity to tribal custom will give the adult Kafir a vote in the local district and tribal matters which are purely of native consequence but for the vote in governmental and legislative elections he must have the higher qualifications. No native has ever been elected to the Legislature altho a few, but very few, might have qualified for the honor.

In addition to the Whites and Blacks there is a further class without name or nation, without leaders or ideals. These people are called the "Colored People" or "Bastaards." They are the offspring of the slaves with an intermixture of black, white, Malay, and Indian. A large number of them have settled in Griqualand on the borders of Natal and the Orange Free State. They constitute a problem within a problem. Descended primarily from European fathers and Bushmen or Hottentot mothers, the further admixture of Asiatic races has only intensified the problem. They are despised by the Kafir and white man alike and the lowest type of morality in the country is found in this class.

What is the problem? Briefly, it is this: How to make one nation of this human variety, how to blend these peoples into one harmonious body, how to lift the lowest to the place of the highest, how to lift the highest still higher. That is the problem the Educationalist is facing and solving.

EDUCATION

The first system of education was introduced into South Africa in 1839 and was known as the "Herschel Scheme of Public Schools" by means of which there were to be established in all the important centers "First Class" or "Principal Schools" and in the smaller towns or villages "Second Class Schools." Sir John Herschel was a distinguished astronomer but only an amateur educationalist, as the following syllabus will show. For the First Class Schools the following were required:—Latin, Greek, French, algebra, plane and solid geometry, the doctrine of conic sections, plane and spherical trigonometry, mensuration, surveying, navigation and practical astronomy, physical and mathematical geography, and the outlines of geology. For the Second Class Schools the requirements of course were simpler but included reading, writing, principles of abstract and commercial arithmetic, a sound grammatical knowledge both of the English and Dutch languages, descriptive geography and outlines of general history, linear drawing and perspective, the rudiments of natural history, physical science, and religious instruction.

In order to give effect to the proposed scheme the Government at the Cape sought the services of Mr. James Rose-Innes M.A., a Scottish educator of note who accepted the appointment and reached Africa in the same year 1839. He was followed by two contingents of teachers from the Scottish Universities of St. Andrew's and Edinburg. Mr. Rose-Innes was made the first Superintendent-general of Education at the Cape, with very extensive powers of administration subject only to the authority of the Government through the Colonial Secretary at the Cape who was then the Minister of Education. Among the first things Mr. Innes did was to revise the proposed scheme and practically to abandon it in favor of one of his own which he termed, "The classification of pupils in the Government schools and the arrangement of the subjects of the course as it regards the different classes." We shall give the classification in condensed form. It was divided into two general divisions, (I) Religious Instruction and (II) Secular Instruction.

The first of these, that of Religious Instruction, was very brief and recommended that religious instruction form the first exercise of the morning school and that during the exercise the pupils be thrown into three divisions: (1) those who could not read—they were to memorize selected Scripture portions; (2) those who could read with a monitor the parables and miracles of Christ; (3) those who could read with ease and who were to form a Bible Class and take a course of Scripture reading. Secular Instruction was divided

into two classes: (1) Junior Division Elementary Course with three grades. The work of this section consisted of elementary reading, writing, and arithmetic leading to a knowledge of the elements of English composition, elementary rules of arithmetic analyzed and illustrated, and a course of descriptive geography; (2) Senior Division Elementary Course. Here the work was divided into two grades. The first grade was introduced to the sciences, the elements of English composition, exercises in what are called compound rules and reduction of compound quantities, a full course of descriptive geography, and a brief outline of the chief historical events in the world's history, and other topics to be appreciated by the growing child. The second grade continued the work of the former and recited the history of the British Empire, the second or third books of natural philosophy, did exercises in English grammar and found opportunity to review carefully certain of the poets. Arithmetic was advanced to the point at which the pupil was trained sufficiently to keep a set of books for a retail business. In all the courses where Dutch formed a part time was given for constant drill in the language and literature and especially in translations to and from the English.

Five grades were thus arranged in this early system the work of which might in exceptional cases be accomplished in five years but upon an average calculation of the scholars in the whole country would take from six to seven years. As first outlined the course was to be a complete education of an elementary sort and was to supply all the needs in after life of the larger part of the population. For twenty years this simple system was wrought into the life of the people and then Mr. Rose-Innes retired.

Dr. Langham Dale was the second Superintendent-general at the Cape and his administration began in the year 1859. For two years he gave very careful study to the local conditions without making any material change. He saw however that a change would be necessary and in fact that it was being forced upon the attention of educators and legislators alike. Under the Rose-Innes syllabus practically no provision was made for black and colored peoples. Thru the energies of the missionaries on the various mission fields and in the purely mission schools there was growing up a desire for an education which would receive the credits given in the public schools. For some time in a few of the schools natives had been permitted to sit side by side with the whites. In the smaller schools of the villages where co-education prevailed this was not a wise plan. And there were to be found also in some of the larger

Mission Institutions such as Lovedale, white students with the natives. To educate the white children and to refuse education to the black and colored peoples would lead to catastrophe. Class distinction upon an educational basis where the minority is only one-sixth of the whole population and where the whole country is dependent upon the industry of the remaining five-sixths would mean a rank injustice to the majority if schools were refused to them, or if their form of education differed in any material form from that of the others. Yet again to admit without proper precautions a horde of heathen people still marked with savage instincts to the educational level of the more civilized and better developed minority would cause untold friction. Still the problem must be faced and a plan for the future must be evolved. To hold back the general progress of all the people would in time only accentuate the difficulty. A way out must be found. It required a strong man with a progressive spirit to break the traditions of centuries and practically force the white minority to make ample provision for the whole nation. The problem was complicated in that the wealth of the country was in the hands of the minority and some of that wealth must be placed at the disposal of the Superintendent-general for his purpose. The possibility of financial assistance from the black man was very remote. His earnings were too small for heavy taxation and in large sections of the country a yearly tax only was levied upon him for all purposes. This tax is still called "The Hut tax" and for the sum of two and a half dollars annually the native must receive free education, careful police and magisterial administration, a piece of land for the support of his family and other equally important considerations. By force of circumstances therefore the white man is *loco parentis* to the black and colored man and as a father he must watch over and train the national child.

Dr. Dale however was not to be intimidated by the magnitude of the problem. The Legislative Assembly is the real voice of the people and before the Assembly he laid his plans. At his suggestion the Legislature appointed a School Commission in 1861 and two years later upon the recommendation of that Commission the present three-fold classification of schools was instituted and subjects for instruction in each school class were specified with some detail. A brief summary of these classifications or courses gives us: I. Third Class Schools (including Mission Schools or Schools for native and Colored peoples) reading, writing, and elementary arithmetic. II. Second Class Schools with two courses of instruction, a primary or elementary course, and a secondary or superior course. The primary

course comprised reading, writing, arithmetic, English Grammar, and descriptive geography. The secondary course included the rudiments of Latin, plane geometry, and elementary algebra. III. In the First Class Schools the two courses Primary and Secondary were included. The Primary Course was the same as in the Second Class Schools but the Secondary Course embraced Greek, Latin, English Literature, history, elementary mathematics, and the elements of physical science. The evident purpose of this plan was the correlating of the different classes of schools so that the pupils might pass easily from one class of school to another without any serious break in the continuity of their work. The scheme of Mr. Innes had provided for five grades but Dr. Dale revised the syllabus and contracted the five grades into four which he called standards. This contraction enabled the student to complete the elementary course in four or five years with time to spare for the higher courses in the advanced schools. Even in that early day recommendations for advance from one grade to a higher was not entirely left to the individual teacher. A unified system of examination by recommendations from the Educational Department would not produce adequate results, both teachers and pupils being of mixed and differing races. For the better supervision therefore of the work done in the public schools two Inspectors were appointed in the year 1872. Their reports revealed a very unsatisfactory state of affairs, and the Educational Department was compelled to institute a searching examination by competent authority of every child with a view to ascertaining whether "the indispensable elements of knowledge, i.e., reading, writing, and arithmetic were being efficiently taught." Strenuous efforts were made to equalize the work in all the schools, and a system of examination by public inspectors was extended which holds to this day.

The plans adopted had worked so well that in 1885 it was found possible to add a fifth grade to the elementary course and two years later, in 1887, a sixth grade. The work of these grades was tested when the pupil was presented for examination. It was required that the pupil should satisfy the inspector in:—either or both (1) reading and writing English correctly and handwriting, (2) reading and writing Dutch correctly and handwriting, (3) commercial arithmetic, bills of parcels, interest, discount, and mental calculations, and he must further pass a satisfactory examination in any two of the following subjects: bookkeeping by double entry, elements of natural science, principles of agriculture, elements of chemistry, geology, botany, animal physiology, domestic economy, and

laws of health. These grades will be seen to have adapted themselves to the local conditions of an agricultural people where at least 90% of the people are dependent upon agricultural pursuits.

Dr. Dale has been spoken of as one who laid the foundations of an educational structure, a foundation upon which others may build with confidence. He may with confidence be classed with the pioneers of modern educational life. He was far-sighted, persistent, diligent, and possess an unbounded confidence in the people and the land of his adoption. To place agriculture, domestic science, and animal physiology in the first six grades of school life demanded more than ordinary foresight and courage. He had the joy of seeing his scheme working for the growing benefit of the people, and as a matter of fact some of the leading men in South Africa today owe their success primarily to the severe and satisfactory course which school provided for them. The service of Dr. Dale ceased in 1892 and with his retirement may be said to end the preliminary stages in the country's educational life. The modernization of the whole work is the task of his successor. The later work will be discust in a succeeding article.

Book Reviews

THE NEXT STEP IN DEMOCRACY: R. W. SELLARS, Assistant Professor of Philosophy, University of Michigan. The Macmillan Company, New York, 1916. V+275 pp. Price, \$1.50.

This volume by Dr. Sellars is symptomatic of two tendencies operating at present. One of these is occurring in socialism and is the well-defined response of that movement to apply a sociological interpretation to society, and consequently, sociological gages and measures to itself. This book, with the others, *Socialism as the Sociological Ideal*, by Melvin, and *Sociology*, by Lewis, constitute specifically scientific attempts in the literature produced by socialists, either to merge socialism into sociology or to write sociology outright. The other tendency is seen in a rapidly growing literature to give expositions of democracy a broad social background, making it loosely agree with the concepts of social evolution and social progress as developed by sociologists.

In this treatise the author has furnished a lucid, analytical, and valuable exposition of what both society and socialism are and must become. His treatment might very well be called, socialism, sociologically reformed, as the goal of social evolution. He rejects some of the main tenets of Marxian socialism, namely, economic determinism and economic interpretation of history, class struggle, and reform of society by revolution. He holds that Marxian philosophy's greatest achievement has been to imbue the mass of people with a firm determination of emancipating themselves from a system of artificial and unjust inequalities.

Mr. Sellars believes that the social mind passes thru three stages in its evolution: status, individualism, and socialism. The first two steps have been taken; the third is now before us. Socialism is to be realized, not by revolution, but by a long and gradual education of the social mind into a finer sense of justice, an ability to interpret life in terms of organic interdependence, and the ability to measure values in terms of social constitution and function. He believes in the elimination of the unfit by scientific methods, of the reform of current institutions so as to get rid of their faults and maladjustments. These steps in advance will help to remove existing inequalities but they are insufficient to emancipate men completely from the unjust distinctions which prevail here and elsewhere. Only a thoroughgoing reconstruction of the social system can prevent the recurrence of deep-seated abuses. The economic system must be so re-

formed that succeeding generations of individuals may be able to realize their fullest destinies, unhindered by the intervention of privilege.

Such is the gist of this volume. The author is not always a systematic expositor, often pausing to interject the treatment of an idea perhaps suggested by the context but which belongs elsewhere logically. Neither is his exposition as clear as one could desire, sometimes causing the reader to retrace his steps to catch the true meaning. The style has considerable literary merit and altogether the volume is absorbingly interesting. The work should assist in freeing socialism from some of its one-sidedness and in the attainment of a saner interpretation of life.

J. M. GILLETTE

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THE FRATERNITY AND THE COLLEGE: THOMAS ARKLE CLARK,
Dean of Men, University of Illinois. George Banta Publish-
ing Co., Menasha, Wisconsin, 1915. 223 pages. Price \$1.25.

To one at all familiar with student life at the University of Illinois a book on fraternities by Thomas Arkle Clark at once attracts attention, and because of Dean Clark's rare understanding of and sympathy with the undergraduate student and of his rather unique experience as Dean of men, one is assured of an eminently sane and practical treatment of the subject.

The book consists of short chapters on the varied phases of fraternity life, problems that are receiving the thoughtful consideration of those interested in fraternities. The chapter titles are: The Fraternity and the College, Fraternity Home Life, The Fraternity and its Underclassmen, Horse Play and Rough House at Initiations, Fraternity Finances, extra-Fraternity Organizations, Concerning the Brothers in Town, College Activities, The Fraternity and Scholarship, The Fraternity and its Alumni, College Spirit, The High School Fraternity, and Fraternity Ideals.

Tho one rather hesitates to quote statements concerning so controversial a subject as college fraternities without presenting the arguments and evidence upon which they are based, yet a few quotations will best illustrate the character of the book. In regard to the fraternity system the Dean believes "that the college Greek-letter fraternity is an institution that has come to stay, and that on the whole it is a good one." "If the young man can afford it,

for like everything else worth while the fraternity costs something, if such an organization appeals to him, if he can fall in with a group of men who are congenial, and if he is willing to make the sacrifice of time and the readjustment of his habits necessary to live with such a group successfully, I usually advise him, if he is asked, to join a fraternity." "My experience is that the faults and dissipation attributed to fraternities exist in much smaller degree than is generally supposed, and not proportionally in any materially greater degree than would on investigation be discovered in the general student body." "In fact the chief justification of fraternities is that they aim to furnish for their members a lodging place which has many of the restrictions, and safeguards, and influences of home."

But the reader should not think that the book is a defense of fraternities, when in fact the greater portion of it is for the benefit of the fraternity man, as a few quotations will show. In regard to "rough house" initiation it is shown "how common and vulgar the practice really is and how out of keeping with the real purpose of the fraternity." In general, "organizations whose rituals are probably pretty weak and inadequate are in favor of the practice, while those most strongly against it have definite traditions and dignified rituals." Concerning "The Brothers in Town" his opinion will probably not meet the approval of many fond parents, but he says, "I think on the whole that the average boy who lives at home while going to college loses in independence and self-reliance and initiative by so doing. I have no recollection of any young fellow who was strengthened, or stimulated in college or saved from loafing, or from other bad habits by having one or both his parents with him." Concerning "College Activities": "At the University of Illinois sixty-five per cent of all men in student activities come from Greek-letter fraternities." * * * simply because "the fraternity men work harder for these places and are usually better prepared to fill them," and concerning the effect on scholarship "it can easily be shown that the fraternity men who engage in the general activities of college are only in exceptional cases the men who pull down the fraternity average; it is the loafer and the fusser who pulls it down."

We hope this book will find a prominent place on the library tables of the fraternities thruout the country, and, too, that the members of college faculties who are interested in student life will read it carefully, because "if colleges have difficulties (with discipline) the trouble lies mainly with the faculty who have not kept awake to student conditions." It may seem that the reviewer is

not living up to his opportunities in offering no criticisms of this book, but he is so heartily in accord with the whole of it that any such criticism would be out of proportion.

E. B. STEPHENSON

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Activities, and Student Organizations,
University of North Dakota

AMERICAN MUNICIPAL PROGRESS: CHARLES ZUEBLIN. The Macmillan Company, New York, 1916. XIV+522 pp. Second edition. Price, \$2.

It is impossible to write the usual book review of this volume because it is rather in the nature of an encyclopedia than a text or reference work. The purpose of the author is "to indicate to civic and social workers, public officials, and intelligent citizens the vast scope of municipal activity today. It can be made useful by comparing local conditions with the typical instances of excellence gathered from all the cities," and it "can be used as a text-book by instructors who use laboratory methods." (p. xii.)

Instead of being a discussion of principles pertinent to the organization and improvement of municipal life American Municipal Progress presents concrete descriptive material indicating tendencies in urban advance during recent years. The twenty chapters furnish a moving picture of what is being accomplished of an advanced nature in our larger American cities in practically all essential lines of urban activity. City entrance, transportation, streets, garbage and sewage disposal, protection of health, property, and order, charity and correction, indoor and outdoor education, libraries and museums, social centers and public recreation, parks and boulevards, city planning, municipal ownership, administration, and efficiency are the main topics illustrated. Naturally, not all phases of city life could be treated in a moderately-sized volume but one would not expect to find the important subject of taxation omitted, or the dismissal of such grave questions as housing, the regulation of the sale of liquor, or the social evil, with a cursory page or two.

What the immature citizen and student need, relative to a study of urban conditions, is a presentation of directive principles along with a revelation of tendencies. With this volume alone before them they would often be sorely tried to discover the right way. However, the author doubtless supposes the presence of other books and literature, or of mature students of city matters to act as guides.

Like the vast majority of treatises on municipal affairs this volume affords the students and thinking citizens of *small* centers slight assistance relative to many problems they have to meet. What cities of several hundred thousand or several million inhabitants are able to do may not be at all applicable in small centers. Often the methods employed by large cities are not adaptable to small places. I find no mention of the excellent volume by President McVey, *The Making of a Town*, which deals with methods of improvement in the smaller centers.

While the above remarks are true they do not detract greatly from the high excellence of Dr. Zueblin's work and its usefulness for the residents of the greater municipalities. It probably is quite impossible to attend to the needs of small and large places at the same time. This volume must prove enlightening and heartening to students of urban conditions generally. It is simply, sometimes brilliantly, written, abounds in both descriptive and pictorial illustrations, and with a full index, an appendix giving additional matter to each chapter, and extensive bibliography, it will prove a valuable aid to municipal study.

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PRINCIPLES OF ACCOUNTING: STEPHEN GILMAN, Department of Higher Accountancy, La Salle Extension University. La Salle University, Chicago, Illinois, 1916. XII+415 pp.

Professor William Morse Cole of Harvard says, "Accounting is nothing but sublimated common sense applied to finding and telling the truth about business." In his "Principles of Accounting" Mr. Gilman lays the foundation for applying the common sense methods of telling the truth about business in clear and direct discussions of the principles. As stated in his preface, the author did not intend to promulgate the specialized treatment of any particular phase of the subject, but rather to present the basic principles of the science of accounting in a graphic and comprehensive manner. In a preliminary survey he symbolizes the various factors that enter into balancing entries and explains their relation to each other by graphic illustrations. Accounting, to best serve its purpose, must present in a comprehensive manner the condition and trend of the business in its most important phases and lend itself to a scientific analysis of the component parts or factors that enter into its operation. Very often the ability to analyze and arrive at the cost of a

simple operation will determine the failure or success of a business. Where not long since the business man depended on a statement of his affairs at the end of a year's operation to determine his profit or loss, financial condition, and the trend of the business, today he is not content to "guess" at results for a long period of time but insists on having concrete data from day to day by which he steers and gauges his business. His insistence is revolutionizing accounting methods and has brought into being various forms of improved accounting and so-called business efficiency. Accounting is diversified in its many phases and the author in his treatment of the subject, as the title of his book suggests, treats only the basic principles. The book was doubtless intended for classroom instruction to be supplemented by more extended application of the principles. The student of accounting, on mastering these principles, will have had a practical knowledge of accounting and have laid the foundation for specialized accounting in its many forms. The book presents very little if anything new and covers the material already given in a number of excellent books now on the market, the only difference being in the language and the manner of approach. The value of the book lies in its directness and clearness and it should provide an interesting study for the student of accounting.

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THE DAWN OF RELIGION IN THE MIND OF THE CHILD: EDITH E. READ MUMFORD, Clothworker's Scholar, Girton College, Cambridge, England. Longmans, Green & Co., London, New York, 1915. XII+111 pp.

Of late the subject of religious education is receiving renewed attention from various angles. The most conspicuous movement in this direction is the attempt on the part of some of our public school systems to correlate the influence of the church, the home, and the school by incorporating in the school curriculum a course in Bible study to be conducted, not by the regular school teachers, but by representatives of the Church—usually the pastors. The whole movement is due to the growing conviction that religion is a vital and therefore necessary element in the complete life. This is the judgment also of the author of the small but weighty volume mentioned above. In her own words, "Complete development—of character as well as of intelligence—can only be attained when mental activity, habits of action, imagination and will are all dedicated to

the highest ends: that is, when life is inspired by a religious purpose."

Confessedly the movement to introduce religious instruction in the schools is due, at least in part, to the failure of the home to live up to its responsibility, or to appreciate fully its problem, and it is to the solution of this problem that the author addresses herself. In her judgment the confusion that so often exists in the child mind with respect to religion is not due to the mystical nature of the subject, but to an erroneous presentation of it. Hence in her treatment she does not enter into any controversy to justify the fundamental truths which she believes to lie at the foundation of the child's religious life; her interest is rather the discovery of the most efficacious method for the development of well-recognized religious ideas. She opposes the suggestion of Sully that because the subject is a difficult one and many errors are made, it should be postponed to the later years of childhood. She is convinced that the child is capable of religious feeling long before religious thought develops, and that even in an infant less than a year old, just as a feeling of joy or distress is produced by the bath and food, reverential feelings may be aroused by the mother's voice, facial expression, and bodily attitude in prayer. A clear distinction is drawn between telling the child about God and having him actually develop the idea of God. Mere verbal repetition of prayers is deprecated on the ground that it is formal and tends to stultify rather than to foster religious development. There is no need to hurry the religious consciousness any more than the esthetic. It comes to its best fruition when it develops naturally.

The book is based on a sound psychology. The method advocated is the teaching of the seen thru the unseen, the spiritual thru the sensuous. The Creator must first reveal himself in his visible works before he can be apprehended as the invisible architect of spirits. Fairy tales are not to be deprecated. The romances of fairies and gnomes not only appeal to the instinct of wonder, but reveal excellent spiritual truths which, if skilfully handled, are of great value in religious development. The book advances no new principle in education, but serves to stress the importance of a proper correlation between subject matter and method on the one hand, and the existing condition of the child's mental development on the other. It is replete with suggestions and practical examples, and should prove invaluable to parents, elementary teachers, and all who are concerned in the education of children.

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THE AVOIDANCE OF FIRES: ARLAND D. WEEKS, Professor of Education in the North Dakota Agricultural College. D. C. Heath and Company, Chicago, 1916. V+128 pp.

The purpose of this book is to furnish practical information for use in connection with the civics, language, and science work of the elementary schools, as an aid in the movement for the conservation of resources. Both the purpose of the work and the way in which it is developed will appeal strongly to the modern educator. Some of the more important topics discust are: What Fire Is, The Dangers of Kerosene and Gasoline, Spontaneous Combustion, Chimneys and Stoves, Fire Departments in Cities, The Causes of Fire, and Agencies in Fire Prevention. The style is simple and clear, the presentation attractive and interesting, and the illustrations effective. The book deserves a wide reading among adults as well as among school children.

In this new work Professor Weeks has put into concrete form one of the suggestions made in his previous work on *The Education of Tomorrow*. It is the duty of the school to put into circulation useful information bearing upon individual and social problems. But the teacher is unable to gather such material in organized form for teaching except as it is presented in books prepared for the purpose. "The Avoidance of Fires" can be readily used as a supplementary reader or civics. It will be sure to awaken the interest of the pupils, and will do much to lessen the unnecessary waste by preventable fires.

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University Notes

The Enrollment The enrollment at the University of North Dakota has reached the highest point in its history. On December 1 the Registrar reported 918 students in residence. This number, together with those enrolled in the Summer Session and those registered as correspondence students, will carry the total enrollment for the year to more than 1600. It is interesting to note that 46 of the counties in the state are represented and 19 states and eight foreign countries appear as the places of residence of students.

Some additional data was called for from those registering this year, and one of the questions asked was, What is the occupation of your father? It was found that the occupation most extendedly followed was that of the farmer, of which there were 247; the next was that of merchant, 115; then banker, 44; real estate agent, 28; physician, 25; clergyman, 24; railroad man 21; and other occupations were represented by from 20 to 1. It appears that 556 of the parents of these students own farm land, while 76 of the students themselves own farms. 207 students pay their own expenses entirely, while 285 pay them in part. These interesting statistics show the rapid growth of the University over the previous year, the increase being about 12 per cent.

The Constitution of the University In October, 1916, the Board of Regents adopted articles of agreement for the government of the University. These articles were practically the same as those prepared by a committee of the University Council appointed last year by the President of the University. The Council continues to be the legislative body of the University, including additional members consisting of assistant professors who have served the University under that title for more than three years. There was created by this instrument a new body known as the Administrative Committee, which takes over the work of the committees on Students' Work, Curriculum, and Schedule. Another group was created known as the President's Advisory Council, consisting of the deans of the colleges. Other provisions take up various regulations that have been in effect at the University for many years and make them more definite and distinct than they have been in the past.

This document will be printed and put in circulation among the members of the faculty. It is regarded as a distinct step in

advance and indicative of the satisfactory relationship that exists between the Board of Regents and the members of the faculty of the University.

Educational Survey Commission Report It was the expectation that by the time of going to press the Report of the Educational Survey Commission would be in print, but it has not been possible to secure a copy of it. However, the Board of Regents in their First Biennial Report published the recommendations of the Survey Commission, and these recommendations are pretty much in line with the different suggestions that have appeared in the press from time to time. They may be summarized briefly as follows:

1. The preparation of teachers in agriculture, manual training, and domestic science at the Agricultural College.
2. Graduate work for the time being to be limited to the requirements for the master's degree.
3. Advanced and professional instruction to be given at the University.
4. Mining engineering and all courses in engineering above the first two college years, except agricultural and industrial engineering, to be given at the University.
5. Confinement of courses in liberal arts in the Agricultural College to service courses.
6. The raising of standards of entrance to normal schools to high school graduation.
7. The re-arrangement of basis for certification of teachers in the state.
8. The School of Science should function only as a school of science, agriculture, mechanic arts, and household arts of secondary degree.
9. The school at Bottineau should be an agricultural high school.
10. The Agricultural High School at the Agricultural College should be discontinued.
11. The school at Ellendale to function as a normal school and continue instruction in industrial subjects.

The President's Trip President McVey has been absent from the University during parts of the months of November and December in attendance upon meetings in Washington and Chicago. The gathering in Washington was the annual meeting of the National Association of State Universities. The program this year

dealt largely with matters relating to the government of students and conduct of curricula. The attendance of representatives from the Universities was unusually large. President McVey was honored by election to the position of Secretary-Treasurer of the Association. This position is regarded as a permanent one and is filled by the incumbent as long as he serves acceptably to the Association. President McVey presented a paper before the Association and also address the American Association of Agricultural Colleges and Experiment Stations upon the various problems associated with the Newlands Bill. Later he appeared before a committee of the National Research Council, which met in New York, and presented the viewpoint of the National Association of State Universities upon the matter of scientific research.

In December the Fourth Annual Meeting of the National Conference on Marketing and Farm Credits was held in Chicago. President McVey has been the Chairman of this Conference for the past three years and has presided over the meetings, and he continues in that position for another year. The Conference was attended by a very large number of delegates, more than 800, and the meetings were large and enthusiastic. The discussion this year centered about the Farm Loan Act, land colonization, immigration, the marketing of livestock from the producer's point of view, and the marketing of grain.

The place of meeting for the next Conference has not yet been determined.

Home-coming Day The first official Home-coming Day in the history of the University of North Dakota was October 28, 1916. On that day was played the annual football game with the University of South Dakota, the final score being 20 to 0 in favor of the University of North Dakota. On that day, too, there was a mass meeting, a banquet, and other features of a Home-coming program. The arrangements for the day were in charge of a representative committee of students, faculty members, and alumni. Of this committee, Dr. William Bek, head of the Department of German, was chairman. The largest number of alumni ever in attendance at any one University celebration were back to strengthen the ties that bind them to their Alma Mater.

In addition to the game with South Dakota, which was the central feature of the Home-coming event, the University mass meeting and the University banquet are especially worthy of note. At the mass meeting which was held in the morning at the Gym-

nasium, President McVey presided. The alumni speakers who recalled early incidents connected with the athletic life of the University and who made stirring appeals to the loyalty and enthusiasm of the present student body were Mr. Skuli Skulason of the Class of 1903, Mr. Victor Wardrope of the Class of 1905, Mr. O. B. Burtness of the Class of 1907, Mr. J. F. T. O'Connor of the Class of 1908, and Mr. Howard Flint of the Class of 1916. In every address there was evidenced a fine spirit of co-operation and unity and every speaker had the "forward look" for the University and its activities. Indicative of the spirit manifested was the gift of an athletic flag to the University by four members of the Robinson family, former students at the University. The flag was given by Mrs. L. G. Larson, Mr. Wm. H. Robinson, Mrs. James Paupst, and Mr. Harris Robinson.

At the banquet in the evening which was held at the University Commons, Miss M. Beatrice Johnstone presided as toastmistress. The same alumni spirit was evidenced thruout the program of toasts. The speakers of the evening were Mrs. E. C. Hogenson of the Class of 1894, Mr. Lynn Frazier of the Class of 1899, now Governor of North Dakota, Mr. N. C. MacDonald of the class of 1900, recently elected State Superintendent of Public Instruction of North Dakota, Mr. R. A. Nestoss and Mr. Fred Traynor of the Class of 1904, and Miss Margaret Welch of the class of 1918, Dean Vernon P. Squires of the College of Liberal Arts, and President McVey. Special music was furnished by the Sophomore Class, and the singing of the Alma Mater closed the program.

Bureau of Educational Measurements For the purpose of cooperating with various public schools in the use and interpretation of standard educational measurements, Doctor John W. Todd of the departments of psychology and education in the University of North Dakota, has opened a Bureau of Educational Measurements. From the Bureau the various tests are to be sent out to the schools that enroll in the bureau, used in the different grades, and then returned for tabulation. There are two purposes for this—one, to enable the superintendent to determine the abilities of his grade pupils in the various school performances—arithmetic, reading, writing, spelling, etc.—and the other, to determine the standard ability of North Dakota school children in the different school performances. The Bureau is being enthusiastically received. The well-known superintendent of one of North Dakota's leading schools writes: "I believe that this is about the biggest step forward that has been taken

in years in the way of reaching the work of the pupils in the public schools." Others are equally cordial in their welcome of the movement.

Fraternities of the University Among the book reviews this month will be found a review of *The Fraternities and the College* by Thomas Arkle Clark, Dean of Men at the University of Illinois, a book which has received very favorable comment by those interested in extra-curriculum student activities. A statement concerning the fraternity situation at the University of North Dakota may be interesting in connection with the points considered in that book.

There are at the University five national social Greek-letter fraternities—two men's, Sigma Chi and Phi Delta Theta, and three women's, Alpha Phi, Kappa Alpha Theta, and Delta Gamma—and five local fraternities, three men's, Alpha Kappa Zeta, Synergoi, and Alpha Lambda Rho, and two women's, Delta Kappa Tau and Alpha Sigma Epsilon. In addition there are two professional law fraternities, Phi Delta Phi and Phi Alpha Delta, an honorary oratorical and debating fraternity, Delta Sigma Rho, and the honorary scholastic fraternity, Phi Beta Kappa. It is reported that at least two others are in the process of organization.

Six of the men's fraternities and three of the women's occupy houses and furnish living quarters for approximately one hundred and twenty-five. Unless the University can offer greatly increased dormitory facilities in the near future the development of the chapter house system seems the best solution of the housing problem.

During the past two years the scholarship rank of all the fraternities together has been above that of the University as a whole. For example for the year 1915-16 the average of both semesters for all the fraternity members was 83.47, for non-fraternity students 83.31, for the University as a whole 83.24, and for the freshmen 80.19.

Fraternities are permitted to pledge new members as soon as they are matriculated in the University, but may not initiate them until they have Sophomore standing—i.e., have established 24 credits. Pan-hellenic, the women's interfraternity organization, has a ruling that the initiate also must have made an average grade of 78 for the two previous semesters and have no conditions or failures. Some of the men's fraternities also require an average of 78 the previous semester.

In the extra-curriculum activities the fraternity men and women hold more than their numerical share of the offices partly because they are chosen somewhat for that reason, and largely because they

take more interest in college activities and have a better organization. There is at present no particular evidence of any fraternity or group of fraternities using unfair means to dominate any college activity.

Socially the fraternities are limited to one informal and one formal party each year, the parties being held on Saturday night and closing not later than 11:30. Of course there are other parties which the fraternity men and women may attend in common with other University students.

University Athletics The football season just past has been the most successful one in the last decade if not in the history of that sport at the University. Not only in the number and character of games won, but also in the interest and spirit displayed by the team, by the students, by the alumni, and by the Grand Forks people, has this season been unique. To those who have followed athletics at the University the past five years, this year represents the first fruits of the consistent policy established by the Director of Athletics and the Coach of the team, and we may reasonably expect a further development along the same lines.

The team won all three of its home games. The Home-Coming Day instituted for the first time this year brought in a large and enthusiastic crowd of alumni and former students, and the victory over South Dakota sent every one home with a firm resolution to see a similar victory next year. The Agricultural College game on the following Saturday was witnessed by the largest crowd ever gathered on the University Athletic field. People undoubtedly like to see the home team win, and thru the enthusiastic efforts of the Grand Forks Boosters Club and the local papers, a great many enjoyed that privilege.

One feature of the team's work deserved especial mention and that is the scholastic record. In spite of increasingly stringent faculty rules and standards, not a single member of the squad of twenty men became deficient during the entire season,—a truly good record.

SCHEDULE AND SCORES

Sept. 30	Fargo College -----	0	U. N. D.	49
Oct. 6	St. Thomas -----	7		16
Oct. 15	Minnesota -----	47		7
Oct. 21	Macalester -----	0		7
Oct. 28	South Dakota University -----	0		20
Nov. 4	Agricultural College -----	0		10
Nov. 9	South Dakota State College -----	14		7

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The Physiology of Hunger

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TWO words in our language used without clear discrimination are hunger and appetite. Among the more highly developed animals the "food urge" is an universal experience, and there are various observed phenomena indicating that even the lowest forms of animal life react to a diminished food supply in such a manner that the procuring of food is made easier. In ordinary usage the words hunger and appetite are used to indicate the sensation complex in the higher animals which leads to the taking and enjoying of food.

We shall take the ground that the food urge is common to all forms of animal life,—that the factor which urges the ameba to pursue and engulf a neighbor protozoon is the same as that which urges the starving wolf to chase and devour a rabbit, or a man to go to the market and buy his daily bread. It is probably far fetched to assert that a single celled animal like the ameba enjoys engulfing a microscopic speck, or that a white blood corpuscle in the human body gorges itself with dangerous bacteria because the experience is pleasant. Here, no doubt, we are dealing with a reaction as purely physico-chemical as any found in the scale of animal life. With the appearance of a nervous system, becoming more complex as we approach the higher animal types, the feeding urge also becomes more complex. Consciousness enters in as an important factor.

In the higher animals, especially man, the first phase of the feeding urge is often unpleasant, followed by the pleasant phase of eating, and ceasing when the experience again becomes or borders on the unpleasant. The first unpleasant phase may be due to bodily sensations or to the fact that we are in the habit of eating at certain times. Hunger, in the sense in which I shall use it later, may be absent but we may enjoy the eating, have appetite, and our experience border on or become unpleasant again, not because we are over full, but because the demands of the habit have been satisfied.

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This latter seems to be one of the accomplishments of civilization. Thus it appears that the problem of hunger and appetite becomes as much one for the psychologist as for the physiologist. Without ignoring the valuable and interesting contributions which psychologists have made to the solution of this problem, I want to turn your attention mainly to the physiological side and state clearly the view held by the majority of workers in this field, and to support this view by summarizing the experimental evidence which has accumulated within late years.

It is a matter of common knowledge that we refer hunger to some part of the digestive tract. This fact has been largely instrumental in turning the attention of physiologists to the study of the digestive tract in their attempts to solve this problem. Consequently, about all we know about hunger has been gained from these studies.

The theories advanced to explain hunger may be classed under three heads. The first may be called the theory of "Central Origin." This assumes a hunger center in the brain which is not primarily stimulated by food deficiency in the blood and tissues, although Magendie, who first promulgated this theory, admitted that blood depletion and nerve impulses from without might be contributing factors. The second, which may be termed the "General Sensation" theory, assumes the existence of a hunger center stimulated by blood changes, and also by impulses originating in the tissues of the body as the result of blood depletion. Bordier, Michael Foster, and Johannes Müller were adherents of this theory. No clear distinction is made between hunger and appetite. This theory explains the hunger activities of the stomach as being caused by nerve impulses coming to the stomach by way of the vagi nerves. This has been proved erroneous. On general principles the idea of blood changes being the primary stimulus seems plausible but, as we shall see later, the evidence is neither clearly for or against this hypothesis. If we accept the idea of blood depletion as the primary stimulus, we have left the other alternative: *viz.*, that it acts primarily upon some peripheral mechanism, such as the stomach, and all the accessory phenomena of hunger may be considered a secondary reflex effect of stomach activities. This is the substance of the third theory,—that of "Peripheral Origin," to which must be added the possibility of other factors than blood changes as the possible stimuli.

The main theories of Peripheral origin are as follows:

1. Hunger is due to mechanical stimulation of sensory nerves in the stomach mucosa, due to rubbing and pressure from contraction of the stomach.

2. Hunger is due to chemical stimulation of the sensory nerves in the gastric mucosa—by the acid of the gastric juice.
3. Hunger is due to a turgescence of the gastric glands.
4. Hunger is due to a stimulation of sensory nerves in the stomach by chemical substances in the blood as a result of starvation.
5. Hunger is due to atony or absence of contractions of the empty stomach.
6. Hunger is due to stimulation of sensory nerves in the wall of the stomach by contraction of the empty or partly empty stomach.

We have not the time to give a complete statement of the foundations upon which these theories are built. Suffice it to say that in the main they have all been discarded except the last one, of which you will soon hear more.

The view most generally accepted at present is that hunger is the sensation complex resulting from the stimulation of sensory nerves in the muscular portion of the stomach wall, brought about by contractions of the empty or nearly empty stomach. Furthermore these contractions take place independent of motor impulses from the brain and spinal cord. Hunger is thus distinguished from appetite which refers to the pleasure experienced in eating and which is dependent upon taste, sight, smell and memory.

I shall attempt to state briefly the experimental evidence upon which these views are built.

Most of the data has been obtained by studies upon the empty stomach of man and the higher animals commonly used in biological laboratories,—dogs, cats, rabbits, guinea pigs, and birds. It may also be worth while to remind ourselves that most of this work has been done in America.

The first observations in this country were made in the early thirties by Dr. Beaumont, working with a Canadian hunter, Alexis St. Martin. St. Martin was shot in the abdomen, a considerable portion of the left anterior abdominal wall being carried away, also producing perforation of the stomach. It seems almost miraculous that in the days before asepsis such a wound would heal, but it did. However, a permanent opening or fistula remained thru the abdominal wall into the stomach. St. Martin came under the observation of a young army surgeon, Dr. Beaumont, who saw the opportunity of studying gastric digestion. St. Martin agreed to allow the young "backwoods physiologist" as Osler styles Beaumont, to make observations, but the relations between the two soon grew stormy. Those who think that strikes for higher wages are strictly a modern luxury should read the accounts of the strikes of this scientific sub-

ject. Beaumont was persistent and made concession after concession until he was finally supporting almost the whole St. Martin clan.

Beaumont took many a peep into St. Martin's stomach while it was at work, and his curiosity gave the world much inside information. He studied the rate of digestion of various foods, studied the composition of the juice secreted by the stomach, how the juice is secreted, noted the movements of the full stomach, and developed a theory of hunger. He noted that when the stomach is empty the mucosa swells. This swelling, he thought, stimulates nerves which give rise to the sensation of hunger. Some of Beaumont's conclusions have been proved erroneous, but in the main his observations have stood the tests of later experiment.

Beaumont does not appear to have noted or at least taken seriously any movements of the empty stomach. Scattering work both in this country and abroad left this question in doubt. In 1905 Boldyreff, by placing a balloon into the empty stomach of the dog and using a recording apparatus, demonstrated conclusively that the empty or nearly empty stomach contracts rhythmically.

In 1911 Cannon and Washburn demonstrated that the vigorous periodic contractions of the empty stomach are synchronous with hunger pangs. They used the balloon method on human subjects.

During 1912-1916 Carlson and his assistants confirmed the work of Cannon and in addition, proved that the hunger sensation arises from the stimulation of sensory nerves in the muscular portion of the stomach wall and not from the mucosa.

It was the writer's privilege and pleasure to work in Professor Carlson's laboratory during the early part of this work. Because of this familiarity and also because of the fact that the method used was the same in principle as that used by Boldyreff and Cannon, and the ground covered much the same, we shall confine ourselves largely to the results of Carlson and his assistants.

THE METHOD

A soft rubber balloon is attached to one end of a rubber tube. The other end is attached to a manometer filled with some fluid, one arm carrying a float to which is attached a writing point. A smoked drum made to revolve by means of a special clock-work receives the record. The balloon is swallowed or inserted into the stomach, then slightly inflated. Contractions are then recorded. For the purpose of recording strong contractions, the liquid used in the manometer is mercury, but for smaller and weaker contractions,

water or some liquid slightly heavier. In most of Professor Carlson's work bromoform was used.

SUBJECTS

Human subjects, dogs, cats, rabbits, guinea pigs, pigeons, and frogs were used.

Professor Carlson was fortunate in securing the services of a second "Alexis St. Martin," a young Bohemian, Mr. Vlcek. When a boy but five years old, one day while in his father's saloon, he swallowed some caustic potash from a bottle, thinking it beer. This resulted in a closure of the esophagus, rendering swallowing impossible. In order to save the youngster's life it was necessary to make an artificial opening into the stomach thru the abdominal wall. He is now thirty-one years old, and has fed himself thru this opening since the operation. While in the hospital he learned of plans to perform a second operation to open his esophagus. He escaped thru a window and never appeared again at the hospital. Later he came to America, learned the barber's trade, and was making his own way when discovered. He has developed into an average sized man and appears healthy in every respect. He was made store-room man for the department of physiology at the University of Chicago, which position he still holds. His unfamiliarity with our language and with the routine of a scientific laboratory at first earned for him the sobriquet of "The Jinx" but he soon overcame his handicap.

He carries a rubber tube in the opening, the tube about one inch in diameter and corked. At meal time he mixes his food, heats it, puts it into a large rubber syringe, removes the cork from the rubber tube, squirts the food into his stomach, puts in the cork, and goes about his business without any discomfort. Once a day he enjoys the taste of his meal. He chews it first, then squirts it into his stomach. Thru this opening it is possible to observe the inside of the stomach or to insert the balloon and record the movements of the stomach.

In the case of other human subjects, including infants one day old, the balloon was swallowed.

With dogs, cats, rabbits, and guinea pigs, the problem is simple. These animals can be taught to swallow balloons, or artificial openings can be made surgically.

In the case of human subjects, subjective experiences were also recorded. Electric buttons, A, B, C, etc., were placed on the chair or table occupied by the subject. Each button was connected with a signal magnet writing on the drum below the manometer writing

point. When the subject felt weak hunger pangs, he was instructed to press A, when stronger ones, B, etc. In order to prevent faking on the part of human subjects, the recording apparatus was always screened from the view of the subject.

THE STOMACH IN HUNGER

With this brief review of methods and subjects in mind, we shall pass to the stomach findings associated with hunger.

When the balloon is placed into the empty stomach, there are at least four features visible on the record:

(1) Periods of powerful rhythmical contractions alternating with periods of relative quiescence. These contractions give rise to the hunger pangs.

(2) A tonus rhythm of great regularity occurring at twenty-second intervals and called the "twenty-seconds rhythm." This rhythm was discovered by Carlson. The reason why others did not observe it was that their recording devices were not sensitive enough.

(3) A pulse rhythm.

(4) A respiratory rhythm.

Such records have been obtained from adult men, infants nine hours old, dogs, rabbits, goats, guinea pigs, bull frogs, birds, and snapping turtles.

Some interesting facts in relation to these contractions have been noted:

(a) The more vigorous the hunger contraction, the more intense the hunger pang.

(b) The hunger contractions are more frequent and stronger in the young than old.

(c) Infants frequently wake up when the contractions come on, or when awake, cry.

(d) The hunger contractions are present in infants before any food has been taken.

Various objections have been made to these contractions being called contractions of the empty stomach, because of the presence of the balloon. The following facts seem to me to answer such objections:

(a) In the case of Mr. Vlcek, the contractions may be seen by direct inspection.

(b) The presence of the balloon between contraction periods does not induce them.

(c) The contractions produce the same effect on consciousness, either in the presence or absence of the balloon.

(d) In pigeons, the contractions of the empty crop can be seen thru the skin, and the introduction of a balloon does not alter their intensity or frequency.

The outstanding fact, so far noted, is that the empty stomach of the animals studied exhibits periodic contractions, and that in man, these contractions give rise to hunger pangs. The evidence also supports the view that this is true in the animals below man. But the hunger pains do not constitute the whole experience. Besides the pains, there is an increased excitability, manifested by muscular alertness, muscular contraction, changes in the circulatory system, and a whole complex of subjective experiences including a feeling of emptiness, dizziness, headache, and nausea. The question at once arises, are these phenomena reflex effects of the contractions of the empty stomach, or are the contractions of the stomach to be put on the same basis as the others, and the whole considered as a reaction to some more fundamental factor, perhaps some chemical factor in the blood, resulting from a lowering of the food supply in the body, or the accumulation of some waste product? This is a difficult point to determine, for the reasons that all the above experiences may occur under conditions other than those named. On the other hand, it is to be noted that in healthy men, when these phenomena occur in relation to the hunger experience, they are always associated with stomach contractions.

The phenomenon of increased muscular irritability has been studied by direct observation and by measurement of the knee jerk. It is needless to comment at length on the first, for it is a matter of common experience that hungry animals are more restless than fed ones. This has been borne out by laboratory experiments. It is also a fact that this restlessness takes place independently of consciousness. The decerebrated pigeon stands quietly until the hunger contractions begin, then he begins to shift and persists in so doing until fed, the hunger contractions ceasing as soon as the animal begins to eat. This fact also is of interest because it indicates that the hunger contractions cease before any chemical adjustment in the blood due to food absorption is possible.

In the case of the knee jerk, it is well known that it depends upon a certain degree of tonus and excitability of the extensor muscles of the leg. In the case of Mr. Vlcek, it was shown that the knee jerk response was always the strongest at the height of the hunger contraction, indicating that other muscles in the body besides those of the stomach are influenced by the underlying cause

of the hunger urge, or the hunger contractions reflexly affect other muscles.

The heart rate is also affected. During the contractions, the rate is increased, and in case of very vigorous contractions, the rate of the heart may be increased as much as thirty beats per minute.

Blood pressure varies during the contractions, the variation not being steady, but marked by great unsteadiness.

The saliva flow is increased with each contraction, the gushes being exactly synchronous with the contractions.

The subjective symptoms accompanying the contractions are very interesting, pain and a feeling of emptiness being the most universal experiences, but in many people there may be a feeling of faintness, dizziness, headache, and even nausea. These all disappear with the cessation of the contractions of the stomach. Whence come the stimuli which give rise to these experiences? There is general agreement that they come from the stomach. But do they come from the mucosa or the muscular portion? The experiments carried out to determine this point were of considerable variety, and finally resolved into a study of the sensory response following stimulation of the gastric mucosa.

- (a) Does stimulation of gastric mucosa give rise to pain?
- (b) Does the mucosa exhibit tactile sensibility?
- (c) Is the mucosa sensitive to temperature?
- (d) Will stimulation of mucosa lead to nausea?

It is a common notion that injury to the lining membrane of the stomach gives rise to painful sensations, but experiment does not bear this out. In the case of Mr. Vlcek, it is possible to stimulate the mucous membrane of the stomach mechanically, chemically and with heat and cold. Such experiments were carried out. In no case did he interpret the sensation as pain, altho rubbing, pinching, introduction of irritating chemicals, hot and cold water were resorted to. He was invariably able to tell when the membrane was touched suggesting that there is a form of tactile sensibility, but this was never so clear and distinct as the sense of touch in the skin. He was invariably able clearly to distinguish between hot and cold substances and described the sensations as those of heat and cold. Professor Carlson carried out similar experiments on himself. He swallowed a large rubber tube, thru which was pushed a small test tube brush attached to a piano wire. He rubbed his gastric mucous membrane vigorously but had no painful sensations. He also swallowed a system of rubber tubes so constructed and arranged that hot and cold water could be applied at different points without

producing a mixed sensation, and he was invariably able to distinguish between hot and cold when applied only to the stomach. No amount of pressure applied gave a typical hunger pang, but all mesures which produced contractions of the stomach muscles produced sensations which had many of the characteristics. It is also well established that irritation of the gastric mucosa may produce nausea.

From these experiments it is concluded that the hunger pangs are not due to impulses coming from the gastric mucosa, but it appears possible that the experience as a whole may be influenced and modified by such impulses.

With this in mind, let us briefly review the factors which do or have been supposed to affect hunger either favorably or unfavorably. We shall consider the following:

- (a) Reflexes from the mouth, nose, and eyes.
- (b) Local effects in the stomach.
- (c) Reflexes from the intestines.
- (d) Emotional states.
- (e) Isolation of stomach from central nervous system.
- (f) Exercise.
- (g) Sleep.
- (h) Cold baths.
- (i) Smoking.
- (j) Tightening the belt.
- (k) Starvation.
- (l) Age.

Reflexes from mouth, nose and eyes. It is a matter of common experience that the hunger pangs cease as soon as one begins to eat. It is also common testimony that the sight and smell of palatable food increases hunger. We might infer from this that tasting food results in the inhibition of the hunger contractions, and that the sight and smell of food increases them. Mr. Vlcek makes good subject for the study of the first point. He has all the possibilities of any other normal individual except that he cannot swallow his food. On the introduction of various substances into his mouth during the hunger contractions, including water, sugar, quinine, acid, and palatable foods, invariably the contractions and pangs ceased. The inhibition was more prolonged with acids and quinine. Rogers and Patterson proved that this is not the case with the rabbit, guinea pig, goat, and bull frog. With dogs, the evidence is not so conclusive. Thus it appears that in man the higher cerebral processes have

a large part to play in the control of the hunger contractions altho, as we have already indicated, do not initiate them.

Seeing and smelling palatable foods have no effect on the hunger contractions, except to decrease them indirectly in all the animals studied. We cannot deny the favorable effect of these experiences upon the food urge but are forced to conclude that the phenomenon belongs to the appetite phase. On this point we shall quote Professor Carlson's own account of an experiment upon himself: "Before beginning the five days' starvation period, our colleague, Dr. Luckhardt, was asked to bring in, unknown to the author, a tray of choice food in the midst of a hunger period. The arrangements being made, the matter was dismissed from the author's thought. At one o'clock on the morning of the fourth starvation day, the subject was asleep and the records showed him to be in the midst of a period of vigorous and regular hunger contractions. He was awakened to behold Dr. Luckhardt and the assistant enjoying a feast of porterhouse steak with onions, fried potatoes, and a tomato salad. The tray of edibles was placed not more than four inches from the subject's face, and the delicious odor of the food filled his nostrils. He felt the hunger pangs as unusually intense, and there was considerable salivation. However, the hunger contractions were not increased either in rate or intensity. In a few minutes, on the contrary, the hunger contractions became weaker and the intervals between them greater, and the period terminated by this gradual depression much sooner than it probably would have done in the absence of the dinner scene. This was undoubtedly due to local acid inhibition from the copious secretion of the acid gastric juice.

When the hungry individual sees or smells good foods, the gastric hunger pangs are more intense, altho there is no change, or even when there is some decrease in the strength of the gastric hunger contractions. This is, therefore, a phenomenon of central reinforcement."

Local effects in the stomach. For the purpose of determining this point, various substances, including water, HCl, alkalies, phenol, chloreton, orthoform, quinine-urea-hydrochloride, and alcoholic beverages were introduced into the stomach during the hunger periods.

Water, either warm or cold, introduced during a hunger pang, inhibits the contractions of the stomach, cold water being slightly more effective than warm. The inhibition, however, lasts but a short time.

Hydrochloric acid inhibits the contractions of the stomach, the degree of inhibition running parallel with the strength of the acid.

HCl is the acid normally secreted in the stomach. It appears as soon as an animal begins to eat, even before food is swallowed, and also when food is seen or smelled. This is probably the explanation of the inhibition experienced by Professor Carlson in the experiment quoted above, but does not account for the inhibition coming on by stimulation of the taste nerves in the mouth, for this inhibition comes on much more quickly and occurs when the vagi nerves are cut, in which case there is no secretion of acid until food reaches the stomach.

In the case of the local anaesthetics, phenol, orthoform, chloreton, quinine-urea-hydrochloride, the effect was inhibitory, but no more marked than after water, and no specific anaesthetic effect could be demonstrated.

The experiments with the alcoholic beverages,—beer, whisky, brandy, and wines,—are interesting, because it is the popular belief that these substances are appetizers. It is evident that if they affect the hunger phase proper, they must initiate or increase the contractions of the empty stomach. They do neither, but on the contrary, they have an inhibitory effect, which is specific and proportional to the concentration of the alcohol. None of the subjects used were total abstainers or habitual users. They all admitted a favorable influence on the food urge. This being the case, we have here an instance where the inhibition of the motor-sensory phase is accompanied by the psychic augmentation. How can we explain this? The sensory experience resulting from hunger contraction is somewhat unpleasant, the effect of the alcohol is to eliminate this, but if this were all, then all other substances which inhibit the hunger contractions ought to produce the same psychic augmentation. The alcohol produces various sensations resulting from a stimulation of nerves in the mouth, throat, and esophagus. These no doubt affect the cerebral states, and as a result of training or habit, result in a favorable state. It appears certain that the individual's first taste of alcoholic beverages does not focus his attention on food and eating.

Reflexes from the intestine. It is well known that in cases of gall stones, enteritis, appendicitis, intestinal obstruction, and constipation, hunger and appetite are frequently absent. It has been shown conclusively that the introduction of gastric juice, chyme, acids, alkalis, water, milk and oil into the intestine results in the inhibition of the hunger contractions of the stomach. The same is true of rectal feeding. It has been shown that this inhibition is due partly to chemical and partly to mechanical stimulation, the chemical giving the most lasting result. This is not to be taken as a proof that the gastric hunger contractions give rise to the whole hunger-appetite

experience, but rather is a statement of the mechanism of the abolition of the hunger-pang phase.

Emotional states. In the dog, fear, anger, joy, and eagerness inhibit the gastric contractions, but only temporarily. In man, fear and anxiety have the same effect, but reading, figuring, and arguing have no demonstrable effect. The results of Mr. Vlcek are illustrative of the first point. In one experiment, in which 200 cc. of a .5% acetic acid solution was being prepared to be put into the stomach, he watched the preparation, and was under the impression that pure vinegar was to be used. At this point, the stomach contractions became very feeble. He looked worried, and upon being asked whether he did not feel well, he asked if it were the intention to put all that vinegar into his stomach. "It will surely hurt me," he said. The experimenter, to assure him, drank half of the acid himself, then asked Mr. Vlcek to take a mouthful. Then he laughed and said, "Oh, I thought it was pure vinegar." In two minutes the hunger contractions had returned to their normal rate and amplitude.

Isolation of the stomach from the central nervous system. It must be apparent that in man and the higher animals the hunger contractions have a marked influence upon the central nervous system, and the central nervous system in turn upon the hunger contractions. The stomach is connected with the central nervous system thru two groups of nerves, the vagi and the splanchnics. The vagi carry impulses concerned with the maintenance of gastric tonus, with the secretion of appetite gastric juice, and carry the afferent impulses resulting in sensations from the stomach of which we have spoken earlier. The splanchnics are inhibitory in their function; it is thru them mainly that gastric contractions are inhibited. What happens when both of these sets of nerves are cut? Obviously, in man this has not been done, and consequently the subjective results are not known. The experiments have been done on dogs, with results as one would expect. Before stating them, I wish to place before you another fact of prime importance. The stomach has within itself an intrinsic nervous mechanism, sometimes called a short local reflex mechanism, the plexuses of Meissner and Auerbach.

When the vagi alone are cut, the inhibition of the gastric contractions thru the central nervous system is more profound than normally.

When the splanchnics alone are cut, central inhibition is slight.

When both are cut, central inhibition is eliminated.

With the stomach entirely isolated from the central nervous system, the hunger contractions appear much as in the normal, are

not inhibited by fear or anger or placing of substances in the mouth, but inhibited readily by local application in the stomach of various substances just as in the normal animal. This means that the stomach contractions are initiated by a local stimulation, and that the extrinsic nerves are a part of a regulatory mechanism.

Effect of exercise. It is generally believed that exercise increases hunger. There is no doubt that exercise does produce conditions which result in food urge. The experiments on this point may be divided into three classes: Those on dogs running in a treadmill, man running in situ, and after effects of six to twelve-mile walks and moderate tennis. Exercise, when begun during a hunger period, invariably inhibits the contractions. The after effects of exercise, if not carried to the point of fatigue, are always in the direction of increased contractions. From this, it seems clear that the hunger pangs cannot be the urge which keeps an animal in the chase.

Hunger contractions during sleep. Sleep is characterized by bodily relaxation. The blood pressure falls and bodily temperature is slightly lower than during the period of wakefulness. Consequently, one would expect a diminution in the contraction of the empty stomach. Surprisingly, the results are just the opposite. The stomach never sleeps. As soon as it is empty, the contractions come on, and if anything with greater vigor than during the wakeful hours. This has also been shown true for infants, and it is our opinion that the infant awakes and cries for its feeding because of the hunger pangs. The stomach empties itself of a milk diet in from two to four hours, and the feeding interval of most infants which are not "spoiled" usually is about three hours.

Effect of cold baths. The immediate effect of ice packs and cold baths is inhibition of the hunger contractions, but they gradually reappear. The after effects of a prolonged cold bath are in the direction of increased hunger contractions. It is worthy of note that cold baths increase bodily muscular tonus. The subjects frequently complained of a feeling of emptiness, even tho the gastric contractions were in a state of inhibition. This suggests strongly that the feeling of emptiness which is often given as part of the hunger-appetite complex does not result from the hunger contractions of the stomach but rather from an increased tonus of the abdominal muscles, certainly not from stomach relaxation for the "empty" feeling should they be expected in other forms of inhibition.

Effect of smoking. Most of us who experience hunger pangs and who enjoy the fumes of the weed have experienced a cessation

of hunger pangs while smoking. This appears to be true in both habitual and occasional smokers. The explanation is not so clear, but owing to the fact that the degree of inhibition runs parallel with the "strength" of the smoke, it is likely that the inhibition is largely due to the stimulation of nerves in the mouth.

Effect of tightening the belt. We have heard it said that tightening the belt diminishes the hunger pangs—the same for lying on the stomach. Experimental results bear out this statement so far at least as the contractions of the empty stomach play any part in the hunger complex.

Effect of starvation. Our experience teaches us that the abstinence from food for a much longer period than usual is unpleasant. If ordinary hunger pains coming on five or six hours after eating are unpleasant, it takes but little imagination to picture the experiences of a three or four-day fast as almost unbearable. Many such word pictures have found their way into literature. The testimony of professional fasters and the results of laboratory experiments indicate that the greatest discomfort occurs during the first few days of starvation, altho the hunger contractions may increase in intensity and end in gastric tetanus. Professor Carlson and an assistant, Mr. L., subjected themselves to five days' starvation. They attended to their daily labors at the same time. The hunger contractions increased in intensity in both men, but not the subjective experiences, which they ascribe to cerebral depression, for they found that the maximum discomfort came just before the feeling of depression began. In regard to appetite, their experiences differed. Mr. L. developed an aversion for food after the second day, but Professor Carlson says that food looked good to him all the time. All feelings of discomfort disappeared as soon as they began to eat. The after effects are worthy of note. Both men testify that they felt better after the fast than before, could do better work, enjoyed their meals more; in fact, one of them expresses himself as feeling as if he had had a month in the mountains. This experience has some bearing on the question of occasional fasting for health. While it may be far fetched to advocate starvation as a panacea, it seems reasonable to guess that a fast several times a year would add to the length of life and joy of living.

Age and hunger. It has been shown in both man and dogs that the hunger contractions are more vigorous in the young than the old. Along with the saying that a "man is as old as his arteries," we might well place "A man is as old as his hunger contractions."

At this point, it seems desirable even at the risk of repetition to summarize the main facts and the conclusions which seem justifiable.

1. The empty or nearly empty stomach of all the animals studied exhibits periodically rhythmical contractions.
2. These contractions give rise to hunger pains.
3. The stimulus acts on nerve endings in the muscular portion of the stomach wall.
4. These contractions reflexly affect muscular activity in other parts of the body.
5. The heart rate is increased.
6. The vaso-motor mechanism is made unstable.
7. Sensory disturbances, such as headaches, dizziness, and nausea, are produced.
8. These hunger contractions occur independently of the extrinsic nervous mechanism of the stomach.
9. The hunger contractions are affected by nervous impulses coming thru the central nervous system,—taste of food and emotions inhibit.
10. This gastric contraction increased reflex activity of skeletal muscle—circulatory disturbance—sensory complex is considered as the hunger phase of the food urge.
11. Impulses from the nose, eyes, mouth, associated with memories and habit, give rise, independently of any stomach contractions, to another complex experience which we may call the appetite phase. Gastric contractions may also play a part in the initiation of this phase, but are not necessary.

12. The following hypotheses seem justifiable:

- (a) All animals react to a diminished food supply in such
- (a) All animals react to a diminished food supply in such
- (b) In the lower forms, having a stomach, but a low grade of intelligence, the hunger phase is perhaps the most prominent.
- (c) In the higher forms, appetite comes into greater prominence and is perhaps the main factor in regulating the feeding process.

But we have not yet touched upon the fundamental question, What is the underlying cause of the hunger-appetite complex? This question remains unanswered. We express the opinion at the beginning of this paper that at bottom the fundamental stimulus is of the same kind thruout the whole animal scale. The end result is dependent upon the organization of the animal. In the higher animals the feeding urge has a much less direct relation to the actual

need of food than among the lower. I believe that the explanation will have to be sought in the field of cell metabolism, which is true of the explanation of all biological processes. This makes the problem a physico-chemical one. It has been suggested that the primary stimulus is a chemical substance which in the lower animals accumulates in the cells, and in the higher, gets into the circulation, and when brought into contact with the stomach cells and cells in the central nervous system, acts as a stimulus. It has been shown that the transfusion of blood from a starving dog into a normal well-fed dog results in vigorous hunger contractions, and also that when the sugar content of the tissues is lowered, the contractions are increased, also when the H ion content of the blood and tissues is increased. This always occurs in starvation. It appeals to me that this cannot be the direct excitant in the higher animals, if so, then the feeding urge would come on when the food supply of the body is depleted, and furthermore in higher animals the hunger contractions frequently begin when absorption from the intestines is at the highest, consequently, the food supply the richest, and the H ion content the lowest. Furthermore, with reference to the hunger contractions, if they are set up by a blood stimulus, we should expect them to be continuous and increase in intensity until they pass into tetanus. This latter is the case in starvation, but the tetanus is not lasting, and the contraction periods come periodically and rather regularly. We will venture the following hypotheses which do not appear to be out of harmony with the known facts:

(1) The neuromuscular mechanism of the stomach is automatic in the sense that it responds to stimuli arising within itself.

(2) These stimuli are the results of metabolic changes within the cells of this mechanism.

(3) The mechanism is keyed up to the point where it discharges when the supply of potential energy reaches a certain point. The periods between contractions represent the building up or storage stage.

(4) The strength of stimulus necessary to cause a discharge of energy remains fairly constant when no nervous impulses come in from the outside.

(5) The stimulus threshold is raised by the presence of foods in the stomach and by impulses by way of the splanchnic nerves, and lowered by impulses coming by way of the vagi.

(6) With the absence of inhibitory stimuli, the contraction periods come on regularly.

(7) The contraction periods have no direct relation to the need for food, and are signals that the stomach is empty.

The hunger appetite complex bears some relation to the digestive process in the stomach. Food is digested by the gastric juice, aided by movements of the stomach, which in man, at least, seem to be controlled entirely differently from the hunger contractions and have no direct relation to them. The gastric juice is secreted when the hungry animal sees and smells food, tastes food, and when the food reaches the stomach. It is an old idea that good cheer at meal time is conducive to good digestion. This is sound physiology. We have seen that seeing or smelling food has no immediate effect on the hunger contractions of the empty stomach, but these experiences lead to a copious flow of gastric juice before the food is touched. This juice is called appetite juice. The same condition which give rise to appetite, stimulate the gastric secretion, and the conditions which decrease or abolish appetite, have the same effect on the gastric secretion.

In disease, we frequently find the whole hunger-appetite complex lacking or exaggerated. Thus, in gastritis, tonsillitis, grippe, and severe colds, the hunger-appetite complex is diminished in intensity or absent. In these cases, there are no hunger contractions. In diabetes the complex is usually exaggerated.

In cancer the hunger contractions are frequently normal, even when the patient can no longer take food by mouth.

In fevers up to about 102°F. , there usually is not much change in the gastric contractions, but the effect on consciousness is different; instead of typical hunger pains, the patient nearly always complains of headache, nausea, and epigastric distress. In fevers higher than 102° the whole complex is absent.

So-called neurasthenics form an interesting group. Numerous cases have been observed where the patient imagined something dreadful was happening in his abdomen and sought medical aid, when the only finding was a vigorous contraction of any empty stomach. In one case reported by Dr. Luckhardt, the patient thought the balloon was introduced for treatment, was greatly benefited by a few sittings, and left the hospital very grateful for what had been done for him.

The effect of drugs upon hunger and appetite forms an interesting study. So-called appetizers are numerous and some wonderful cures have been attributed to them. Most of them are bitters. Not a single one studied, and the list is large, has directly stimulated the hunger phase. The favorable effects, if there are any, and most observers believe there are, must be obtained through augmentation of the appetite phase, probably through the stimulation of nerves in the mouth and the esophagus.

The Geological History of North Dakota

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COMPARED with many of the states the geological history of North Dakota is simple. The flat-lying formations have undergone little deformation, they have not suffered metamorphism and there have been no extrusions or intrusions of igneous material. The rocks of the state are mostly clays, shales and sandstones belonging to the Cretaceous and Tertiary periods, these being covered with glacial drift except in southwestern North Dakota.

THE PALEOZOIC ERA

Thruout a portion of this era the Paleozoic sea doubtless covered the state and in its waters were deposited the limestones, shales, and sandstones of the Cambrian, Ordovician, Silurian, and Devonian, two or more of which systems outcrop not far to the north in Manitoba, to the east in Minnesota, and to the south in the Black Hills, but are however in North Dakota deeply buried beneath more recent formations. The Grafton well passed thru, beneath the drift and Lake Agassiz silt of the Red River Valley, about 600 feet of strata which have been referred to the Cambrian and Ordovician periods. During the later Paleozoic the region does not appear to have been an area of deposition and probably remained above the sea thruout a large part of the Mesozoic Era, since rocks belonging to the Triassic, Jurassic and and Lower Cretaceous or Comanchian are wanting in the state.

THE CRETACEOUS PERIOD

The oldest Cretaceous formation in the district is the Dakota sandstone, which does not appear at the surface in North Dakota but is reached in many wells and is the source of artesian water in the southeastern part of the state. This sandstone is non-marine and was deposited either in a large lake, or was spread by rivers over their broad plains. It underlies the entire state except the greater part of the Red River Valley, where it has probably been eroded.

Marine conditions were now brought about thru the submergence of a large part of North America. The Gulf of Mexico

invaded the continent and finally stretched north to the Arctic Ocean. All of North Dakota was covered by the waters of this great inland sea. In it were deposited the muds which today form the Benton shale, the formation outcropping only in the valley of the Pembina river. Later the sea became somewhat clearer and abounded with countless numbers of Foraminifera, including Globigerina and Textularia whose calcareous shells mingled with the fine sediments to form the impure chalky limestone and highly calcareous shale of the Niobrara. Then followed another long period during which a great thickness of muds and clays, with occasionally a little sand, were laid down on the floor of the sea, these deposits forming the blue gray shale of the Pierre formation. Conditions of deposition again changed, the waters became more shallow and restricted, while strong currents and waves near shore sorted the material, resulting in the formation of the Fox Hills sandstone.

THE TERTIARY PERIOD

After the sands of the Fox Hills formation had been deposited, the sea withdrew from the region so that the succeeding strata are of continental origin. They constitute the lower portion of the Lance formation which in places rests unconformably on the Fox Hills sandstone, erosion channels in the latter marking the contact of the Fox Hills and Lance formations. But marine conditions again returned over a portion of southwestern North Dakota, for the fossils indicate that the Cannonball member of the Lance formation was of marine origin.¹ While this upper member was being laid down in the waters of the sea, which probably invaded the region from the east, further west deposits of continental origin, the Ludlow lignitic member, were forming. Thus the Lance formation is in part of continental, in part of marine origin. Those portions which are of continental origin were probably formed, in large part at least, by rivers, as is suggested by the cross-bedding and the irregularity of deposition, tho some of the beds may be lacustrine. In places extensive swamps were formed and the trees and other vegetation which grew in them accumulated to form the beds of lignite which are characteristic of the upper non-marine portion of the Lance formation.

During Lance time the most prominent group of animals was the dinosaurs, among which the large and clumsy Triceratops was particularly characteristic of the epoch.

1. E. Russell Lloyd and C. J. Hares, *The Cannonball Marine Member of the Lance Formation of North and South Dakota and its Bearing on the Lance-Laramie Problem*, Jour. of Geol., Vol. 23, 1915, pp. 523-547.

GEOLOGICAL SECTION OF NORTH DAKOTA					
SYSTEM	SERIES	FORMATION NAME	COLUMNAR SECTION	THICKNESS FEET	CHARACTER OF ROCKS
QUATERNARY		LAKE SILT <i>Unconformity</i>		0-30	<i>Finely laminated, sandy clay.</i>
		GLACIAL DRIFT <i>Unconformity</i>		0-400	<i>Boulder clay, sand, gravel, and boulders</i>
TERTIARY	OLIGOCENE	WHITE RIVER FORMATION <i>Unconformity</i>		40 to 300	<i>Coarse sandstone containing pebbles, calcareous clay, and fresh-water limestone</i>
	Eocene	FORT UNION FORMATION <i>Unconformity</i>		1000	<i>Yellow and ash-gray shale, sandstone, and clay, with numerous beds of lignite</i>
TERTIARY?		LANCE FORMATION <i>Unconformity</i>		1000	<i>Cannonball marine member. Dark sandy shale, and shaly sandstone. Yellow sandstone containing marine shells. 0-300 feet Ludlow lignitic member—Sandy shale, calcareous sandstone, and lignite. 0-350 feet Dark shale, yellow sandstone, thin lignite beds. 400-525 ft</i>
CRETACEOUS	MONTANA GROUP	FOX HILLS SANDSTONE <i>Unconformity</i>		125	<i>Yellow sandstone concretions and marine shells.</i>
		PIERRE SHALE		900	<i>Blue shale containing marine shells.</i>
	COLORADO GROUP	NIORRARA FORMATION		200	<i>Chalky limestone and calcareous shale.</i>
		BENTON SHALE		500	<i>Dark-colored marine shale</i>
		DAKOTA SANDSTONE		250	<i>Sandstone containing many plant remains</i>

The age of the Lance formation is still in doubt, tho it is referred by the U. S. Geological Survey, with some question, to the Tertiary. Following the deposition of the Cannonball member of the formation, the sea withdrew from the region never to return again.

The shales and sandstones of the overlying Fort Union formation, containing numerous thick and persistent beds of lignite, accumulated to a thickness of over 1000 feet in western North Dakota and appear to be very largely of lacustrine origin. The channel sandstones and the conglomerates which are present in places at the base of the formation were perhaps deposited by rivers, but the great bulk of the sediments was probably laid down in a lake of large extent occupying parts of North Dakota, Montana, South Dakota and Wyoming, and extending north into Canada.

Various features characteristic of fluvial deposits, such as local unconformities and filled channels are, so far as known, not found in the Fort Union except at the base of the formation, and cross-bedding is of rare occurrence in the sandstones. Were the shales and sandstones of the Fort Union formed chiefly thru deposition by rivers the above features should be present, and the fact that except for a little cross-bedding they are not found above the base suggests that the deposits are lacustrine for the most part.

The numerous lignite beds of the Fort Union are evidence that the region was occupied again and again by swamps, many covering hundreds and even thousands of square miles. The coal-forming vegetation growing in these swamps consisted, as determined by Thiessen,² very largely of coniferous trees, including varieties related to the Sequoia, cypress, juniper, and arbor-vitae, together with some firs and spruces. The woody material of these trees, including trunks, stems, and branches, comprises roughly 75 to 85 per cent of the whole mass of the lignite. Thiessen believes that the conditions under which these coal beds were formed were much like those under which peat beds formed in certain wooded swamps in parts of Wisconsin and Michigan. "In these swamps the growth of trees consists chiefly of white cedars, *Thuja occidentales*, tamarack, *Larix laricina*, and black spruce, *Picea mariana*, in which the white cedar predominates. The growth is so dense that underneath them nothing but a thin mat of mosses, lichens, and liverworts, with an occasional herbaceous plant, is able to exist. The substratum, or peat bed, consists of logs and branches fallen in every direction over

2. David White and Reinhardt Thiessen, The Origin of Coal, Bureau of Mines Bulletin No. 38, 1918, p. 222.

one another, either in a semi-macerated condition or unmacerated, tho much changed. The interstices of these are filled with a debris in which macerated parts of stems and branches, cone scales, leaves, thalli of mosses and liverworts, pollen grains, and so forth, are plainly recognizable. Such a formation appears in all respects analogous to the lignite beds under discussion."³

That the vegetation accumulated in many of these swamps for long periods of time is indicated by the fact that large numbers of the lignite beds have thicknesses of 4 to 10 feet, several are 20 feet thick and one is 35 feet. "It has been estimated that the product of heavily timbered woodland, when compressed to the specific gravity of coal, would only amount to about one-fourth of an inch in thickness during a century. If this statement is even approximately correct, it is easy to calculate that a 4-foot bed of coal must have required about 20,000 years for its accumulation,"⁴ and a 20-foot coal bed would require 100,000 years. That the coal swamps recurred repeatedly in many parts of the area is proved by the presence in some vertical sections of 15 to 20 lignite beds, many, it is true, of no great thickness.

As stated by Knowlton,⁵ from the abundant flora of this formation, it is evident that during Fort Union time what is now an almost treeless plain was then covered with splendid forests of hardwoods, interspersed with scattered conifers and ginkgos.

The deposition of the Fort Union sediments was followed by an erosion interval of considerable length during which hundreds of feet of strata were removed so that a well marked unconformity separates the Fort Union from the Oligocene beds. The coarse sandstone of the White River group, which in places contains pebbles up to 2 and 3 inches in diameter, is doubtless a fluvatile deposit, and the calcareous clays associated with it may have had the same origin, but the thin-bedded limestone and marl of the Sentinel Butte area probably represent lacustrine deposits.

We have seen that during early Eocene or Fort Union time and during at least a portion of the Oligocene epoch western North Dakota was an area of deposition, but thruout most of the Tertiary Period the region was undergoing erosion. This resulted in the removal of many hundreds of feet of strata over most of the state and in places fully 1000 feet of shale and sandstone were carried away by the streams. The outlier known as the Turtle Mountains,

3. Reinhardt Thiessen, *op. cit.* p. 222.

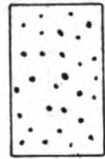
4. F. H. Knowlton, U. S. Geol. Survey Bulletin No. 611, 1915, p. 59.

5. F. H. Knowlton, *op. cit.* p. 59.

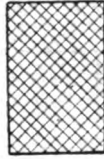
NORTH DAKOTA

LEGEND

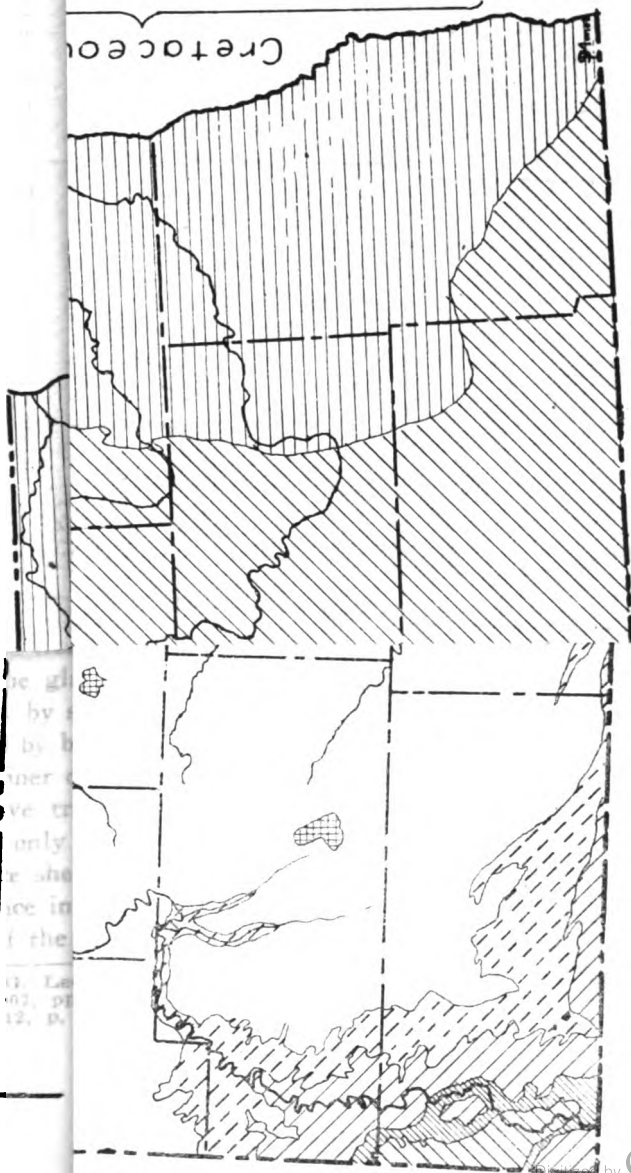
Pierre Shale



Niobrara Formation



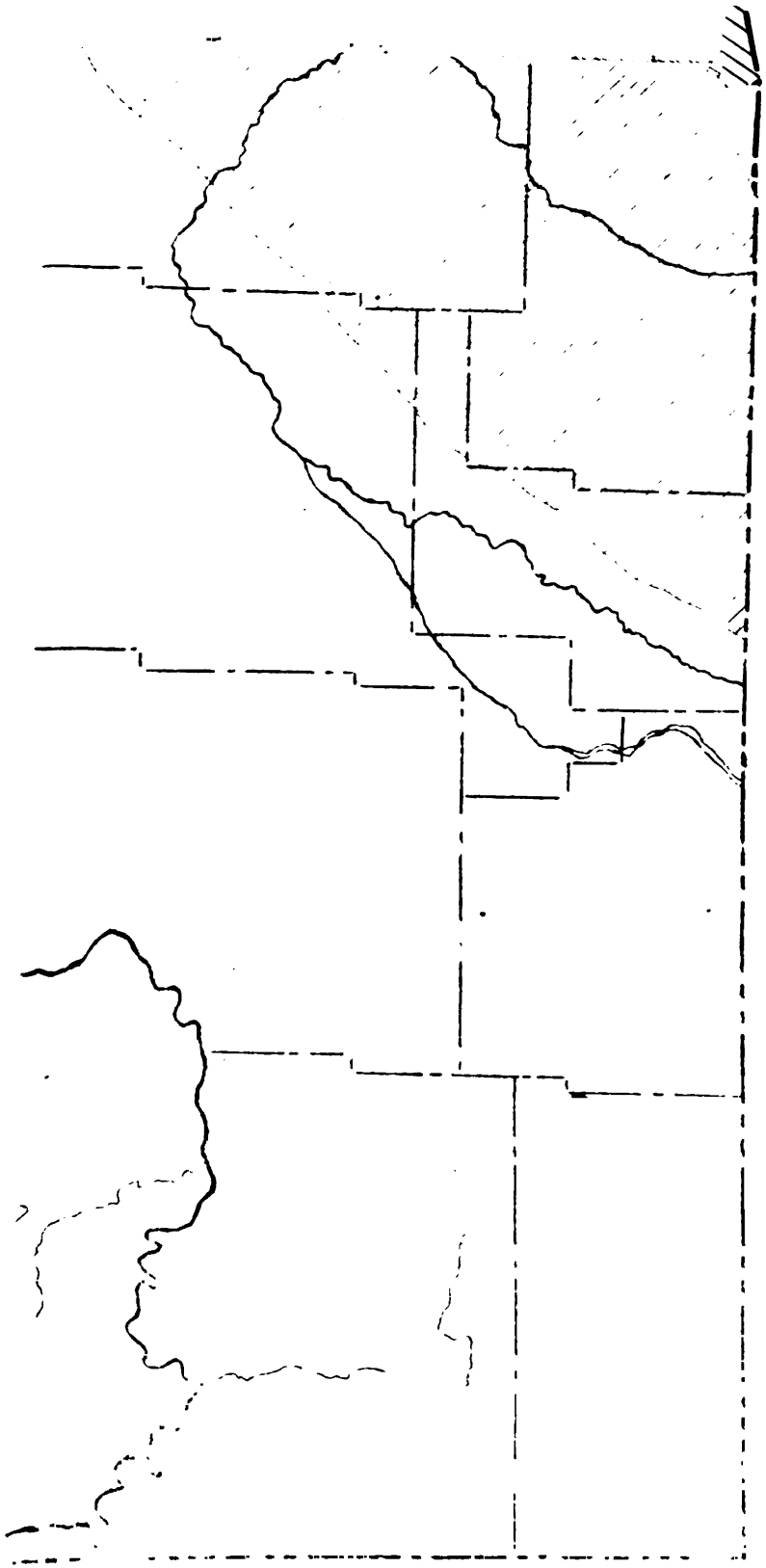
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ГЕОЛОГИЧЕСКАЯ ДИАГРАММА



the Fort Union beds of which were once continuous with those of the Missouri plateau, was during this time separated from the plateau by the denudation of the intervening area. The broad depression of the Red River Valley was cut to a depth of 800 to 900 feet in the Cretaceous and older rocks of eastern North Dakota and western Minnesota. The topographic features of the region west of the Missouri river, including the rolling uplands, the high ridges and divides, the numerous buttes, the escarpments, and the stream valleys were all formed in large measure by erosion during the Tertiary Period, continued of course in the Pleistocene.

Since the Cretaceous and Tertiary strata were deposited they have undergone but little deformation, tho the region has several times been elevated, in the aggregate to the extent of some 2000 to 3000 feet. Only locally has there been warping or folding of the strata, as in the Cedar Creek anticline, which extends from near Glendive, Montana, southeast into southwestern North Dakota.⁶ This anticline was probably formed about the close of Fort Union time and prior to the deposition of the White River beds.

QUATERNARY PERIOD

At the close of the Tertiary period the warmth of a temperate climate gave way to the rigors of an arctic cold. North Dakota was twice invaded by an ice sheet and many of the surface features of the state as we find them today are the result of these ice invasions, particularly the last one. The ice of the earlier invasion extended from 40 to 60 miles west of the Missouri River and covered all of North Dakota except the southwestern corner. The deposits of this older glacier, which are perhaps to be referred to the Kansan, are in most places thin and have undergone great erosion. This drift perhaps never had any considerable thickness west of the Missouri, except locally where it forms moraines, and much of the glacial material which was formerly present has been swept away by streams. The drift thruout much of the area is thus represented by boulders and gravel, the coarser materials left behind when the finer debris, such as clay and sand, was carried off. There are extensive tracts where little or no glacial material is present, and where only an occasional boulder or a patch of gravel indicates that the ice sheet ever covered this region.

This ice invasion produced important changes in the preglacial drainage of the region. The Missouri valley and the lower valleys

⁶ A. G. Leonard, U. S. Geol. Survey Bulletins Nos. 285, 1906, p. 317; 316, 1907, pp. 195, 203. W. R. Calvert, U. S. Geol. Survey Bulletin No. 471, 1912, p. 201.

of the Yellowstone and Little Missouri rivers were blocked with ice, so that all these streams were forced to seek new channels. Lakes were formed in the valleys of the Yellowstone and Little Missouri rivers, the water rising until it overflowed the divide between the latter and the Knife river at its lowest point. The combined waters of the three rivers flowed east and southeast to the mouth of the Cannonball river where they entered the Missouri river valley. The valley thus formed crosses the divide between the Knife and Heart rivers, and also that between the Heart and Cannonball. The length of this Pleistocene valley from the head of the Knife to the mouth of the Cannonball is 155 miles. Upon the withdrawal of the ice sheet the Missouri and Yellowstone rivers returned to their former valleys, but the lower valley of the Little Missouri was permanently abandoned and that river took an easterly course from the point where its preglacial course was blocked by the front of the ice sheet.

After the first invasion the climate grew warmer and the glacier retreated northward, so that conditions were probably favorable for the return of animal and plant life. Upon the recurrence of the cold climate the ice sheet again advanced over the region, coming from the center west of Hudson Bay but stopping far short of the limits reached by the first invasion. The Wisconsin ice sheet of this later advance covered eastern and northern North Dakota and its farthest extent is marked by the Altamont moraine. This remarkably well developed moraine forms a very rough belt of massive hills and ridges which extends without interruption for hundreds of miles, in places no less than 20 miles wide and thruout much of its extent in North Dakota its width probably averages half of this. While forming it the ice front doubtless fluctuated back and forth across the belt for a long period.

During its recession the ice sheet halted again and again and thus built a series of moraines. Some of these halts were brief and the resulting moraines poorly defined; others were of much longer duration as shown by the great amount of material deposited and the large size of the hills and ridges.

The early history of Lake Agassiz, according to Upham, was intimately connected with the recession of the ice front, since when the glacier had retreated across the divide between the Minnesota and Red rivers the lake was formed by the ponding of the water at the south end of the Red River Valley. According to this view, Lake Agassiz began as a small body of water and expanded north-

ward as the ice melted until its maximum size was attained, its area at that time being about 110,000 square miles.⁷

Recently W. A. Johnson of the Canadian Geological Survey has attributed a different life history to Lake Agassiz.⁸ He believes with Tyrill that after the retreat of the Keewatin glacier northward into Manitoba there was comparatively free drainage in that direction, so that an earlier glacial marginal lake associated with a lobe of the Keewatin glacier was largely or wholly drained. Lake Agassiz proper did not come into existence until a later advance of the ice from the northeast was met by a slight advance of the Keewatin glacier, which resulted in the ponding of the northward drainage and the initial stage of the lake. The waters gradually rose and extended southward, filling the Red River Valley and overflowing to the south.

It will be seen that these two views differ radically, one holding that the lake began at the upper (south) end of the valley and expanded northward with the retreat of the ice margin; the other, that the lake originated well to the north in Manitoba after much of the Red River Valley was already free of ice, and had first a rising stage as it increased in size and extended southward over the valley floor. In either case, Lake Agassiz owed its existence to the presence of the ice barrier on the north and northeast, higher land holding in its waters on all other sides.

So geologically recent is it since the latest ice sheet withdrew from North Dakota, and since Lake Agassiz was drained, that the drift surface and lake bed have been but slightly affected by erosion, and they are still much as they were at the close of the Glacial Period.

7. Warren Upham, *Glacial Lake Agassiz*, U. S. Geol. Survey Mono. No. 25.

8. W. A. Johnson, *The Genesis of Lake Agassiz*, *Jour. of Geol.*, Vol. 24, 1916, pp. 625-638.

The Three Ingredients of the World's Medicine

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EVERYTHING of interest in the history of medicine, so far as it is known, is to be found in the lives of men: Hippocrates, Galen, Harvey, Pasteur. Everything is to be found in the history of the various diseases and injuries: tuberculosis, epilepsy, wounds, fractures. There are, or might be, histories of folk medicine, imposture medicine, empiricism, medical education, and of the various so-called schools, also of anatomy, physiology, and the other medical sciences. A book or a discussion that presumes to give a complete history of medicine will be found to recognize the great periods of history; it will discuss the medicines of the various countries, and it will deal with men, discoveries, philosophies, movements or schools, and the development of the related sciences. It is not the purpose of this paper to attempt to give a complete outline of the history of medicine, but to trace briefly three great factors running thru the medicine of every age: Superstition, Philosophy, Science.

Medicine, from the point of view of history, may be thought of as all of the efforts of man to explain, to prevent, and to cure disease. In this sense, the first man, rather than the first priest, as has been said, was the first physician. From the day of that first man to our own, medicine has been closely related to every step in the development of human thought. It has touched at almost every point religion, philosophy, and the whole realm of natural sciences, as well as most of man's social, economic, and political relations.

Since, for our purpose, I have defined medicine, permit me to say a few words about the other terms. Superstition scarcely needs consideration. By superstition, I mean belief in the direct agency of superior powers in everything that is not at once easily understood. Philosophy, to use a secondary definition, may be taken to mean speculation, the inclination of man to explain what he cannot understand, the inclination to make theories and hypotheses, particularly in the absence of sufficient data, and the inclination not to distinguish between theories and matters of certain knowledge. By science, without looking into a dictionary, I mean the search for truth. Science involves both accurate observation and careful experimentation. It means more than a knowledge of isolated facts; it

means the rational grouping of facts to establish classifications, and to discover principles or laws. It makes use of hypotheses as working bases and as suggestions or guides for further investigation. True science is never so committed to an hypothesis that it will not gladly discard it when better knowledge is obtained.

Before taking up any of the elements, let it also be said that superstition, philosophy, and science have all been important in the medicine of every age. Each has been intimately related to all of the others. In many matters of practise, it is difficult to determine just what parts are represented by this or that factor. Superstition, philosophy, and science are all present in much of folk medicine. All are present in empiricism. All have been invoked most sincerely by the laity in every age, and all have given more or less comfort, or assurance, if nothing else. All have been used in varying proportions by impostors, from the medicine man to the advertising "specialist." It would not be far wrong to say that all have been used in varying proportions by the wisest and most conscientious of medical practitioners in every age but our own. And, thinking of medicine as it was defined above, the sum total of man's efforts to explain, to prevent, and to cure disease, it is surely correct to say that all are employed today.

As a physician might study a prescription, thinking of the origin, preparation, history, chemical and physical properties, and possible uses of each ingredient, so I wish to call attention in turn to each of the factors named above.

SUPERSTITION: I discuss this factor first because, while it has been present in the medicine of every age, it was at least relatively most conspicuous in the earliest times. Medicine was born in superstition. It is well known that the primitive man thought all nature supernatural. He worshipped sun, moon, stars, trees, and rivers. The fierce heat of the sun, the raging storm, the thunder and the lightning were the manifestations of offended gods or demons. Disease most naturally fell into the same scheme of things, and was thought of as a demon, or as the work of supernatural agencies of some kind. It was not something to be treated as we now think of treatment but, like other gods and demons, it was to be placated by offerings and sacrifice. An additional conception arising as man had more experience, perhaps the result of dreams and the seeing of misshapen individuals, was that disease was the work of the spirits of the dead, or of spirits controlled by persons with supernatural powers. The men who were thus supposed to be able to control the spirits were medicine men, among the forerunners, not only of the

modern physician, but of the minister and the teacher, the military hero, the statesman, and the judge. With the medicine man there were added to the attempts at placation, efforts to cajole, outwit, and frighten the evil spirits. Practise both to prevent and to cure disease consisted of hideous disguises, shoutings, ravings, dancing, and the doing of any of a hundred fantastic things, all of which were thought of as "making medicine."

The part of folk lore that might be called folk medicine, also developed at a very early time. In this were elements of philosophy and of science, as I shall show later, but a conspicuous element always has been superstition. Told and retold, and passing and growing from generation to generation, folk medicine came to contain a lore of thousands of substances and thousands of things to do in addition to the tricks and the magic of the medicine man. To the primitive man, however, the value of treatment of any kind depended largely upon ceremony, for example, where the drug grew or was found, the time and the circumstances of its gathering, by whom and how prepared and administered. Shakespeare's phrase, "night gathering of enchanted herbs," well expresses the point of view.

By the dawn of history, the magic of the medicine man had developed into priestcraft in perhaps every race. It is of this period that it has been said "the first priest was the first physician." With certain points of difference, it was the same in every land: Babylonia, Egypt, India, China, Greece. In ancient Israel and Judea, according to the Old Testament, the priests were clearly those who directed all matters regarding health, tho, in a narrow sense, they did not act as physicians. Disease was due to the immediate wrath of God and cure was to be attained by prayer and sacrifice. "But it shall come to pass, if thou wilt not harken unto the voice of Jehovah, thy God, to observe to do all his commandments and his statutes which I command thee this day, that all these curses shall come upon thee and overtake thee. * * * Jehovah will smite thee with consumption, and with fever, and with inflammation, and with fiery heat, and with the sword, and with blasting, and with mildew."¹ Miracles were frequently performed. A striking example of both the result of God's wrath and the effect of prayer in producing a cure is presented in the case of Hezekiah.²

In ancient Greece, with its multiplicity of gods, there were many tutelary divinities of medicine: Apollo, Artemis, Demeter. Aesculapius, son of Apollo, in particular, was the god of the healing

1. Deut. 28: 15-22.

2. II. Kings 20: 1-7.

art. His cult of physician-priests maintained a series of temples at Cos, Epidaurus, Cnidus, Pergamus, and other places. These temple-sanatoria, full of works of art, on wooded hill or by mineral spring, were popular health resorts, not unlike, in some respects, many an institution of modern times. When the patient presented himself, the ceremony was begun with prayer and sacrifice; after probable bath, anointment, and massage, he was introduced into the special rite of the temple sleep. Upon his waking, further treatment was instituted according to the priest's interpretation of a supposed dream of the patient, a revelation of the god of the temple, in reality a visitation of the priest or of some other attendant in disguise. If he was benefited, the patient left for the archives a model of the part that had been diseased and that was now restored.

Thruout the greater part of the Christian Era, particularly the Medieval Period, altho speculation flourished and there was a modicum of scientific knowledge of medicine, superstition held high sway thruout all the western world. Superstitious folk medicine existed everywhere; erysipelas was due to fairy malice; a child born on Easter Eve was able to cure the ague. Witches were very real. Earth, sky, and sea were peopled with demons, angels, and the spirits of the dead. There was no "grotto or cave thicket in which angels and genii had not been seen." "If a spring discharged its waters with a periodical gushing of carbonic acid gas, it was agitated by an angel; if an unfortunate descended into a pit and was suffocated by mephitic air, it was by some demon that was secreted there."³ Disease was due to the wrath of God, or the devil or lesser demons. Martin Luther is quoted as saying that "pestilence, fever and other severe diseases are naught but the devil's work"; and Cotton Mather defined sickness as the "flagellation of God for the sins of the world." Cures were to be obtained, along with other means, by prayer, pilgrimages to shrines and other holy places, and the wearing of amulets.

So much for a hasty glance at superstition in the past. What of it today? I think it would be no exaggeration to say that in the minds of the majority of people, present-day ideas of medicine are still warped by superstition. We need only mention the savage and the half civilized peoples of the world, also the ignorant negro of the South; we need only recall the men and women, very real, tho rare, who still believe in witches, amulets and the most superstitious folk lore; also the lingering faith in shrines, like Our Lady

3. Draper, quoted by Gorton, *History of Medicine*, Vol. 1, p. 159.

of Lourdes.⁴ In addition to such considerations, there is surely a sense of magic about medicine and the doctor in the minds of a very great many. Every physician in practise has experienced many times the demand for the magical, if not in words, at least in deeds. It seems difficult to realize that modern medicine means only well-trained common sense, as it attempts to make its diagnosis, and to bring about its cure. There are thousands of people who reject scientific medicine as a delusion, if not worse, and who trust for relief to prayers and rites performed by themselves or by their healers. There are many thousands of people who, while willing to accept the services of modern medicine, still attribute illness and death, no matter what the cause or how preventable, to a special or immediate act of Providence, and who direct their prayers to a God who, in their estimation, is likely to be turned aside from the great world plan, to interfere with the operations of his laws. How much more rational it would be to pray for ability to find out and to obey God's laws.

PHILOSOPHY: The second factor, philosophy, or speculation, appears very early in the history of medicine. It is not always easy to draw the line between philosophy and superstition, on the one hand, and philosophy and science on the other. It is doubtful whether such a myth as that of the Python slain by the arrows of Apollo should be thought of as superstition. The Python represents the cause of disease, probably malaria in its literal sense; the arrow of Apollo, the heat and light of the sun, altogether a poetical expression of a theory.

Folk medicine must be mentioned again. While the use of many of the thousands of drugs and other means of treatment known to the ancients depended upon superstition, and of some few, upon correct observation, the use of by far the greater part depended upon faulty observation or the merest speculation. The use of a plant as a medicine was often suggested by some fancied resemblance in shape or color of root, stem, leaf, or fruit to some part of the body. The use of a stone was brought about by some characteristic that appealed to the imagination. The peculiar value of certain meats and the uses of remedies prepared from animals, birds, and insects were dictated by the most striking attributes of the creature in question.

4. The fame of Lourdes, a small city in France, dates from so recent a date as 1858, when the Virgin Mary is supposed to have appeared to a young girl of thirteen. The waters of a spring are believed to have miraculous power, and it is said that 500,000 tourists visit the shrine annually. For an interesting word picture of the conditions see *A Corner in Harley Street*, Chapter XVII.

An interesting folk-lore theory that has existed more or less widely in all races and at all times is the belief in the transference of disease. If the disease which has an entity of its own could be transferred to another, the original sufferer would get well. Glimpses of this belief along with miraculous cures are to be found in the Bible: Naaman's leprosy transferred to Gehazi, as told in Kings,⁵ and the passing of the demons from two probably insane men to the herd of swine as told in the Gospels.⁶

In addition to faulty observation, the ancients indulged in pure speculation. According to the Talmud the Jews variously estimated the number of bones as from 248 to 252. Of these, one bone, Luz, somewhere between the skull and the coccyx, was regarded as indestructible, a nucleus from which the body would be raised from the dead at the resurrection.⁷ The ancient Hindus gave as the number of bones, 360; of ligaments, 800; of muscles, 500; of veins, 300. The early Chinese spoke of 365 bones; according to them, the cranium was sometimes given as one bone, sometimes as eight in the male and six in the female. The larynx opened into the heart; the spinal cord into the testicle. The lung consisted of eight lobes; the liver, of seven. The spleen and the heart were organs of reason. The Chinese recognized 10,000 varieties of fever.

Hippocrates, the father of medicine, of whose scientific opinions I shall speak later, accepted such theories as: Disease is cured by an opposite acting drug or principle; what cannot be cured by iron can be cured by fire, and the so-called humoral theory of disease. The first will be thought of as contrary to one of the tenets of homeopathy and, like the doctrine of *similia* is repudiated by scientific medicine; the last, the humoral theory, dominated medicine for more than two thousand years.

As the universe consists of four elements, fire, air, earth, and water, so man consists of four elements: blood representing the heat; mucus, the cold; yellow bile, the dryness; and black bile, the moisture. Health consists in a harmonious mixture of the elements, disease, of an improper mixture. The terms, sanguine temperament, phlegmatic, bilious, and melancholic temperaments are echoes of this old theory. As if this were not speculation enough, many other theories arose in the centuries following. Newburger says: "The sons and grandsons of Hippocrates, as well as his immediate disciples, * * * were at the head of that series of physicians who laid

5. II. Kings 5: 27.

6. Matt. 9: 28-34.

7. Garrison, *History of Medicine*, p. 48.

emphasis upon theoretical conjecture and gave to medicine in the fourth century B. C. its speculative coloring." Other theories that rose to prominence in Greece and Rome, and that divided the profession, were Methodism, or Solidism, which explained disease as changes in the solids of the body, and whose catch word was *strictum et laxum*; Dogmatism, which emphasized general principles; Empiricism, which depended upon practise and experience; Eclecticism, which attempted to choose from all the others and to gather up the free lances; and Pneumatism, which substituted such terms as vital spirits and animal spirits for the humors of the Hippocratic school. None of these theories, as such, added anything worth while to medicine, but all bulked large in the best writings, not only during the centuries immediately preceding and following the birth of Christ, but until comparatively recent times.

In addition to what has just been said, about the continuation of ancient theories, it would seem to be enough to say that superstitious folk medicine, and speculation characterized the medicine of the western world until the Renaissance, and with few but very important exceptions until the nineteenth century. The long medieval period has been well called the age of Imposture Medicine; the eighteenth century, the age of Theories and System. Speculation was so dominant and so varied in form that one scarcely knows what examples to choose. A striking illustration is furnished by the edict of the Council of Tours "Ecclesia abhorret a sanguine." (1163 A. D.) A theory of the medieval period and later, to be thought of in connection with the names of Paracelsus, Hahnemann, and others, was that of "signatures." According to this theory in its simplest terms, every plant bore some mark that indicated its medicinal use, thus, white plants were believed to be sedatives, yellow plants, to be good for jaundice, and red ones, for fevers. Two famous schools of the Renaissance were the Iatromathematical or Iatrophysical, and the Iatrochemical, speculating upon pathology and treatment in terms of the newly developed and still very imperfect sciences of physics and chemistry. John Brown, of Edinburgh, in the eighteenth century, gave his name to a theory by dividing diseases into two groups, sthenic and asthenic, or diseases characterized by violent symptoms and diseases characterized by weakness, simply a revival of the Greek Solidism with its doctrine of *strictum et laxum*. Brown's treatment consisted of depression in the one group of cases, of stimulation in the other. His favorite drugs were morphine and alcohol. It has been said that his theory has been responsible for more deaths than the French Revolution and the Napoleonic Wars

combined.⁸ Another system, and one that still remains as an organized school, with at least a part of its eighteenth century theories, is Homeopathy.

Thinking of substances and means used in practise in all this dark period, it would probably be easier to list the things that were not so used. Mummy, human bones, the excrement of man and of animals were all employed; in fact, it would seem that the more revolting the cure, the better. A dispensatory written by one Jean Raynaud, about 1600, gives as treatments of the times along with many others of the same kind: "A Swallow eaten, for to quicken the eyesight"; "Old Scorpions against their bitings"; "Hair's brain against toothach in children"; "Fox lungs against consumption of the lungs." It gives a formula for a preparation containing sixty-five different ingredients; the remedy was apparently a panacea, "for it is most expertly alexiterial against all evils."⁹

What of speculation in medicine today? Folk medicine still exists. All will, no doubt, recall examples of it. A few instances I have observed in men and women who live with us in the twentieth century, and that I think were veritably believed, are: that rheumatism can be cured by carrying a small potato in one's pocket; that warts can be removed by conjuration; that oil tried out of earthworms will make one supple; that the red color of a cloth about a child's neck is good for colds and sore throat; that a black ribbon or string of black beads in the same way will keep off certain diseases; that whooping cough will disappear only upon the coming or the going of the leaves of the trees; that holding the flexed and adducted thumb inside of the fingers will ward off the bite of a mad dog; that a poultice of cow's dung is the best treatment for blood poison; that the eating of tomatoes will cause cancer; that a bisected freshly killed fowl will cure snake bite, (also that whiskey will do the same)¹⁰; and of herb lore, the use of home-made decoctions of various wild plants, because it was medicine "good for the blood." I have also seen belief in the transference of disease.

That there still exists, in addition to the less commonfolk medicine, a great deal of mere speculation, untried, false, even exploded theories, is evident by the fact that there are schools of practise, allopathy, homeopathy, osteopathy, mechanotherapy, and the like. Otherwise, sincere men would not go into such schools, the laity would not support such practises, and the laws would not recognize

8. Baas, quoted by Garrison. *Ibid.* p. 244.

9. Sollmann, *Old Clothes*, address, 1912.

10. A good example of empiricism.

them. Otherwise, the sincere man, wishing a part in the relief of suffering, would not put blinders on his eyes before he began his study, but would approach the subject with as open a mind as we approach chemistry or botany. Otherwise, society, in determining who should practise any form of the healing art, would apply the same standard to see that all were thoroly trained in at least a knowledge of the elementary sciences, the causes of disease, and diagnosis. It seems, however, that in spite of the obvious triumphs of scientific medicine, there has been a reaction of disappointment in the human mind as the methods of science have been relentlessly applied to the various questions of medicine. It has been difficult to give up speculation and empiricism. Fifty years ago, many men in the profession felt that medicine was being undermined, and there began to be criticism of the "Medical agnostics"; students of medicine often tell me of a feeling of disillusionment; and the layman, no matter how well trained in other lines, often prefers the assurance of the theorist or the quack to the less cheerful advice of the scientific physician.

Since it is my thesis to distinguish three elements, you will scarcely ask if scientific medicine contains any irrational speculation. You might ask whether the men that represent scientific medicine are free from unwarranted theories, and I should answer that they are not.¹¹ Without citing instances, permit me to remind you that the physician is very human. He shares with all of us the impulses to make hasty judgments; he is called upon every day to act in the absence of perfect knowledge; he may be influenced in his practise by self interest, and the theories of his patients or others. It is not surprising that doctors should differ in judgment or that even the wisest should make mistakes. Let me, however, ask a question: Who of all men can be expected to have rational opinions if not the picked men that modern medicine is coming to include, men trained in the laboratory sciences, taught to experiment, to observe, to record, to question every theory, to prove or disprove every conclusion?¹²

SCIENCE: The last of the factors I wish to consider will be thought of as belonging to modern times, and particularly, to the last century or even less. In the light of its achievements in the last hundred years, compared with all of its accomplishments in all

11. Scientific men will be interested in a discussion of the ethics of scientific controversy in the introduction to Sir Almroth Wright's reply to Sir Watson Cheyne in their controversy over the treatment of infected war-wounds. *London Lancet*, Sept. 16, 1916, p. 508.

12. The modern medical student is taught, in the language of Holmes, not to accept authority when he can have the facts; not to guess when he can know; not to think that a man must take medicine in the narrow sense because he is sick. *Morse's Life of Holmes*, Vol. 1, p. 109.

of the centuries preceding, this conception is correct, and yet the flickering light of science can be seen at the earliest dawn of history and coming out of the preceding ages.

Folk medicine, discust under both superstition and philosophy, often represents very correct observation. Many powerful drugs, useful or not, and many useful procedures were known to very primitive peoples. Alcohol, opium, hashish, cinchona, sarsaparilla, and acacia are drugs that have so come down to us. "The Indian knew the importance of keeping the skin, bowels, and kidneys open, and to this end the geyser, the warm spring, and the sweat-oven were his natural substitutes for a Turkish bath." "Massage was long known and practised by the Indians, Japanese, Malays, and East Indians."¹³

An interesting example of a correct observation, no doubt verified many times and finally passing into folk medicine, later to be discredited and laughed out of court by our scientific age until the matter was approached in a really scientific spirit of experiment and investigation, was pointed out by Abel of Johns Hopkins University a few years ago.¹⁴ Many races have long made use of the skin of the toad for medicinal purposes. In Europe it was used for dropsy and in the American colonies, for rheumatism, as well, until about 150 years ago when digitalis was introduced. The Chinese still use it for dropsy. The rationale of the treatment was found by Abel to rest in the fact that the skin of the toad contains a powerful poison or drug, bufagin or bufotalin, to which the beneficial effects in dropsy are due. The skin of certain species of toads also contains the now well-known drug, epinephrin. In the same way, in an age of less investigation and of more speculation, the use of cinchona, from which quinine is made, was long opposed by the profession. The opposition to cinchona may have arisen in part because it represented a Peruvian folk medicine; it surely arose because the drug was exploited by mountebanks and quacks, and because it was sanctioned by the church. The reasons are humanly appreciable, but clearly unscientific. The incidents illustrate that there may be truth in conditions that are unpromising, and that we have no right to a dogmatic opinion upon any question until it has been carefully investigated.

We scarcely expect to find anything scientific in the Ancient World prior to Greece, and yet, early Egypt so impress Diodorus with its sanitary provisions for cities, aqueducts, drainage, and the

13. Garrison, *History of Medicine*, p. 22.

14. Discussion in Current Comment, *Jour. Am. Med. Assoc.*, Sept. 11, 1916, p. 961, with reference to Abel in *Science and Jour. Pharmacol. and Exper. Therap.*

disposal of the dead that he was lead to say, "The whole manner of life was so evenly ordered that it would appear as though it had been arranged by a learned physician, rather than by a lawgiver." Herodotus, speaking of the same time, pronounced Egypt the healthiest of countries. Tho the conditions evidently changed at a later time, there is probably little doubt as to the accuracy of the comments. Excavations of eastern drains indicate that the Babylonians also understood some of the principles of hygiene, and knew how to dispose of sewage properly. The ancient Jews in the same way, in the absence of almost any other scientific medical knowledge as displayed by the Bible, present a remarkable picture in their efforts at hygiene and sanitation. Their practises may be summed up under about three heads: 1. Cleanliness, the avoidance of touching any unclean thing; 2. The segregation of infection, and the stamping out of the means of infection even to the burning of clothes and of houses; 3. Pure food, or food inspection. The Talmud reveals the fact that the examination of the carcasses of slaughtered animals gave them a knowledge of congestions, tumors, degenerations, abscesses, and other pathological conditions of the viscera that the Greeks probably never possess.

Ancient India did some remarkable work in surgery. Writings of the fifth century A. D. describe about 120 surgical instruments. "These were properly handled and jointed, the blade instruments sharp enough to cut a hair, and kept clean by wrapping in flannel in a box." The Hindus seem to have known every operative procedure except the use of ligatures, instead of using this they stopped hemorrhage by cauterization, boiling oil or pressure. They treated fractures and dislocations with a splint that was later taken over into the British Army as the "Patent rattan cane splint."¹⁵

It is in Ancient Greece, however, that one must look for the most striking examples of medical science. Saying nothing of Homeric surgery, or of the undoubted gradual growth of medical knowledge in the priesthoods, I pass at once to the great father of medicine, Hippocrates, 460 to 370 B. C., a contemporary of Pericles, in the height of Athenian development. Hippocrates was not an experimenter, but he was a keen observer, and a clear and logical thinker. As Matthew Arnold says, he had the "tendency to observe facts with a critical spirit, to search for their law, not to wander among them at random, to judge by rule of reason, not by the impulse of prejudice and caprice."

It is well known to the profession that he described malaria,

15. Garrison, *History of Medicine*, p. 51.

tuberculosis, puerperal convulsions, epilepsy, mumps, and other diseases so well that but few additions or corrections need to be made today. He left many case histories. In his surgical writings, his discussions of fractures, dislocations and wounds are strikingly modern. He knew many of the common bone and joint injuries, and was correct in his explanations of them and in his methods of treatment. He said that if wounds were to be irrigated at all it should be with pure water (very pure or boiled) or wine, and noted that in the handling of wounds the hands of the operator should be clean. He described suppuration, and healing by first and second intention. He also spoke of trephining and of draining the serous cavities.

In forming his judgments he instituted a careful, systematic, and thoro-going examination of the patient's physical condition, his facial expression, pulse, temperature, excreta, sputum, localized pain and movements of the body, tho it is sometimes said that he did not make use of the pulse. Succussion sounds, or as the physician says, "Hippocratic succussion," sounds of splashing coming from an abscess cavity partly filled with fluid, and elicited by shaking the patient while the examiner's ear is applied to the patient's chest, were first described by him. He also noticed and described picking at bed clothes, a symptom often seen in severe fevers, and he described the "dying face" so well—the sharp nose, hollow eyes, collapsed temples, etc.—that the term "*facies hippocratica*" is known to every student of medicine. In therapeutics he recognized the healing power of nature, and conceived the function of the physician to be that of an assistant. While he knew many drugs, he seems to have depended chiefly upon simple methods, diet, purgations, fresh air, change of climate, massage, and hydrotherapy.

His discourse on the "Sacred Disease," epilepsy, shows his perfect adherence to rational ideas and his freedom from superstition. In an age when anatomy and physiology did not exist, nor even chemistry and physics, when therapeutics was on anything but a scientific basis, when both superstition and philosophy were rife, it is remarkable how well he held to a rational interpretation.

After Hippocrates, let it simply be said that Aristotle added much to the scientific knowledge of zoology, comparative anatomy, and embryology; that Herophilus and Erasistratus, at the remarkable university at Alexandria, just before the Christian Era, made many discoveries in anatomy, and that Galen, next to Hippocrates the greatest figure in ancient medicine, added experimentation to

the methods of science, and made several important physiological discoveries.

From Galen, 130 to 200 A. D., to Vesalius, 1514-64, scientific medicine did little more than incubate as a seed or a spore in the writings of men who simply retold and speculated upon the philosophies and the knowledge of a former age. Aside from the use of chemical drugs, as distinguished from plant preparations, coming in from the Arabs, with a new maze of superstition and speculation as alchemy, nothing was added to medicine. In fact, scientific medicine lost in every particular, methods of study, diagnosis, therapeutics, surgery. If any proof of this were desired, let it be remembered that the civilized world was scourged with pestilences or plagues, smallpox, diphtheria, bubonic plague, syphilis, such as have never been seen before or since. Not a few times, but many times, in every country of Europe, were cities and armies well nigh extinguished. The average length of human life for this period is estimated at 20 years. The medieval explanation of all this involved comets and stars, the sinking of mountains, the poisoning of wells by Jews, and many other absurd causes. The true explanation is to be found in lack of hygiene and sanitation, in over-crowding, ignorance, and superstition. And yet, just as our century puts on airs over all that have gone before. Adelard of Bath in the twelfth century, distinguished between "the writings of men of old" and "the science of the moderns," and Peter of Spain, who later became Pope John XXI, in a medical treatise states the source of his information to be the "ancient philosophers" and "modern experimenters."¹⁶

With the Renaissance, scientific medicine began slowly and with much conflict to advance. The methods of critical observation of Hippocrates and of experimentation first employed by Galen were revived, dogma began to lose its hold. What we now call the foundational or ancillary sciences, chemistry, physics, biology, anatomy, and physiology, all springing from the medicine of the time, began slowly to cast off the bonds of superstition and scholasticism, and to advance in the search for truth. A Paracelsus, in spite of his own superstition and ridiculous theories, gave us hydrogen, and was one of the first to point the way toward modern chemistry. A clear headed Vesalius, not only taught us anatomy but did not hesitate to point out mistakes that had been accepted without question for fifteen hundred years. A Harvey discovered the circulation of the blood. For the man with seeing eyes, the idols were pretty

16. Thorndike, *Natural Science in the Middle Ages*, *Pop. Sci. Monthly*, Sept. 1915, p. 277.

well overthrown. And yet, progress was slow. It is less than one hundred years ago that the first independent laboratory in any of the medical sciences was established.

It would take a volume, not an article, to name the eminent men in scientific medicine since the days of Harvey, and to discuss their work even briefly. For our purpose, moreover, it is not necessary to do so. It is well known today that modern medicine is on a scientific basis and that all of the medical sciences compare favorably from any point of view with such sciences as physics, chemistry and biology; one of the medical sciences, bacteriology, has been called one of the wonders of the modern world. The triumphs of both surgery and so-called internal medicine, are well understood. Modern surgery, in the saving of life and limb, is as efficient as the combined sciences in making modern warfare destructive. Modern internal medicine has made the Panama Canal possible, and the tropics habitable. It has shown us how to avoid the plagues of earlier times, and how to handle great armies without typhoid fever, a disease that until the present century killed far more soldiers than injuries of battle ever did. It has lengthened the average human life from less than 24 years, as it was in Europe a few hundred years ago, and as it is still in India, to forty, fifty and more years in the most enlightened countries. It has shown us how the average human life might be lengthened ten to fifteen years more if ignorance, indifference, and self interest could be cleared away.

Permit me to illustrate the progress of scientific medicine with one disease. Tuberculosis was well described clinically by Hippocrates, who also had a theory as to its causation, "the flux of mucus from the head into the air passages." The ancient Greeks knew something of its contagion, and advised life in the open air for its treatment. Galen, a little clearer, considered the condition an ulceration. Absolutely nothing further was added to the world's knowledge of the disease until modern times, and not much until less than one hundred years ago; on the contrary, much was lost thruout the greater part of that long period. Many symptoms that are now well known to be important were overlooked by the profession, or considered as having no bearing, as late as fifty years ago. Its infectiousness had been affirmed and denied many times and was not fully accepted as late as 1865. It waited for Laennec, 1819, to call attention to sounds coming from the chest, to interpret them in the light of symptoms and post mortem findings, and so to increase our knowledge of pathology and of diagnosis. It waited for Villmin, 1865, to prove conclusively by experimentation, that tuberculosis is

a specific disease due to an inoculable agent. It waited for Koch, 1882, to discover the tubercle bacillus. It waited for Edward Trudeau, and others of the generation just passing, to prove the efficacy of sanitarium treatment, and the value of rest, good food, and fresh air. It still waits the discoverer of a possible specific, as we have in smallpox, diphtheria, and malaria. Without the benefit of a specific, however, and in spite of ignorance, indifference, and self-interest, the result of modern knowledge has been that in the last thirty years the death rate from tuberculosis has fallen approximately 50% in England, Germany, Canada, and the United States. In the registration area of the United States the death rate per 100,000 of population dropt from over 200 in 1900 to less than 150 in 1914. Tuberculosis, the Great White Plague, is no longer the greatest of the men of death. With a wider spreading of knowledge regarding the cause, prevention, and cure of this disease, and with a more general practise of seeking scientific advice early, its power of destruction can be still further greatly reduced.

In the history of the world's medicine, there have been three elements. Superstition and philosophy have held large sway since the earliest times; they still exercise a powerful grip upon the minds of men. Science, with faint glimmerings down the ages, has but recently come into its own. Its triumphs are apparent, yet the wise man knows that the work has just begun. Ten years from now should see us far wiser and more capable than we are today. Preventive medicine is only in its infancy. The socialization of medicine that has such splendid promise has scarcely started. If, however, scientific medicine is to continue to bless mankind at all according to its possibilities, we must soon be able to define medicine as something very different from the concept that comes out of history. All must realize, the layman as well as the physician, that modern medicine means the application of scientific discoveries to the prevention and cure of disease. Nothing else is entitled to any place in the medicine of today and of the future.

Gasoline Supply and Its Relation to Specifications

WILLIAM JOHN LEENHOUTS,

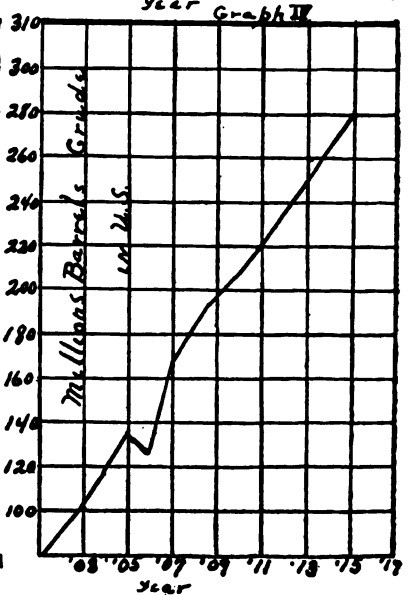
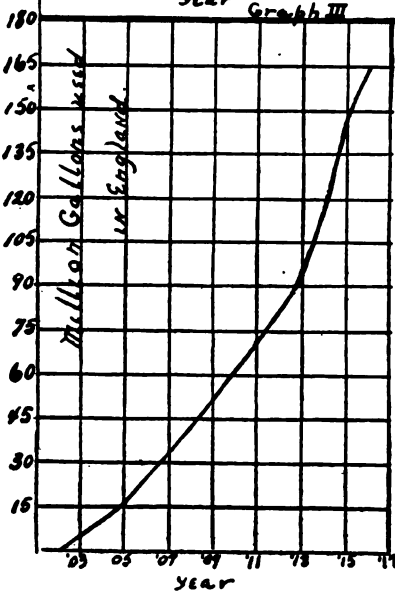
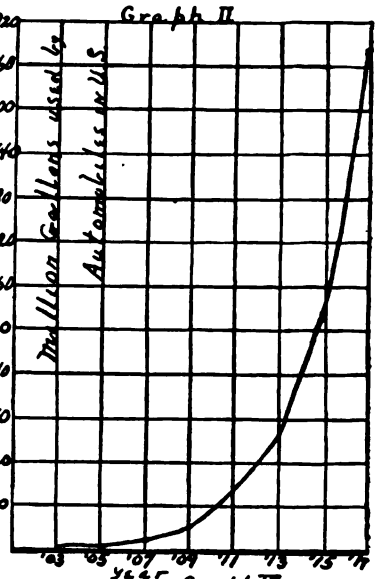
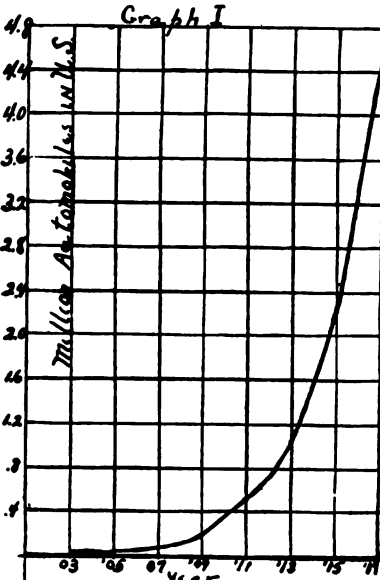
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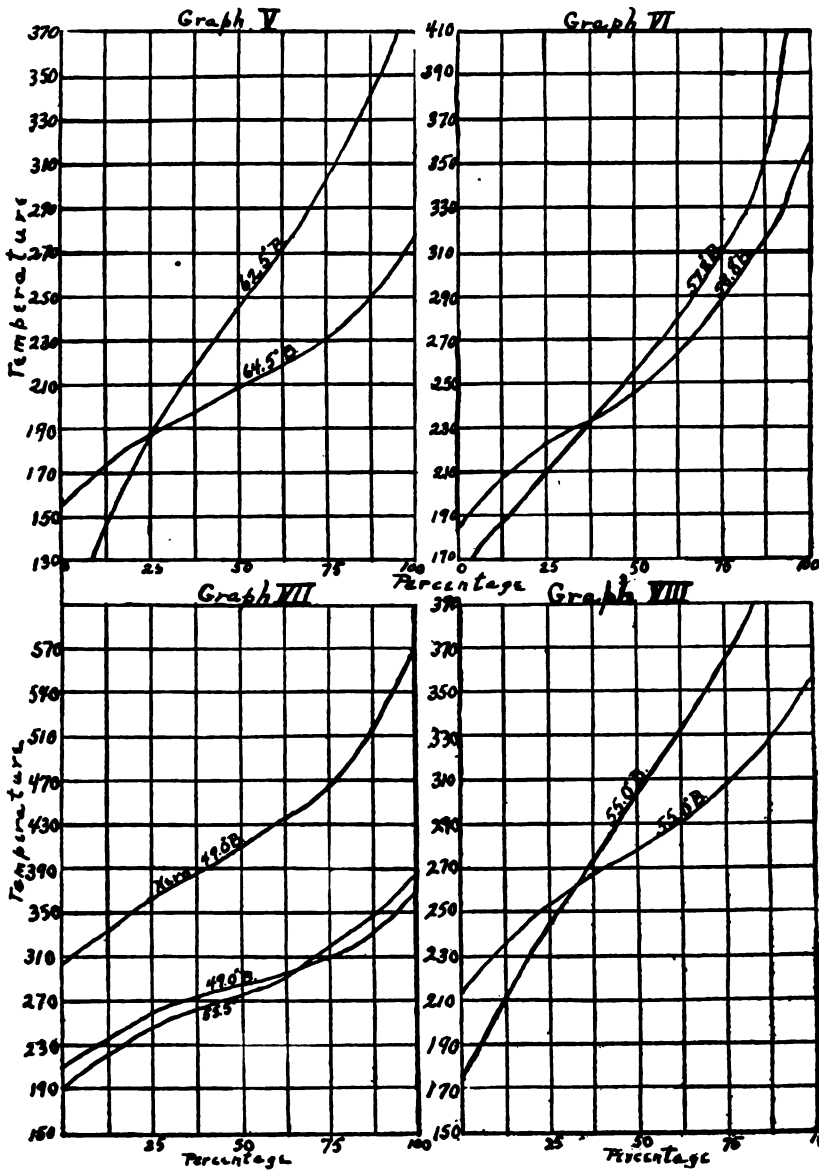
SOME four years ago the question of an adequate supply of gasoline threatened to become acute. According to the Geological Survey we have probably reached the summit of our crude oil production. Our future supply of petroleum is only sufficient to last us thirty more years at our *present rate of consumption*.

Reliable statistics of the production and consumption of gasoline in this country are not available. The production of crude oil is taken by some as an index of available gasoline production. During the period prior to the introduction of methods of cracking and the change in the quality and grade of gasoline the amount of crude oil might be an approximate index but under present conditions of refining and change in grading of gasoline we cannot even consider the crude as an index. An approximate index of the consumption of gasoline in this country would be the number of automobiles in use during each year. Graph I shows the approximate number of automobiles in use in this country from 1904 to 1917.¹ The reason we take the number of automobiles in use in this country as an index of gasoline consumption is because over two-thirds of the gasoline is used for that purpose and that used for other purposes, such as, gasoline engines, tractors, motor boats, and aeroplanes, has increased at about the same rate.

On January 1, 1916, there were 2,250,000 automobiles in use in the United States. On January 1, 1917, there were 3,250,000, and it is estimated by automobile manufacturers that there will be in excess of 4,500,000 by January 1, 1918. It is considered that the average amount of gasoline consumed per car in a year is 400 gallons. This would bring the consumption of gasoline by automobiles for 1916 to 1,300,000,000 gallons. The exports for 1916 were 350,000,000, and if we figure the approximate amount used for other purposes, such as tractors, gasoline engines, motor boats, aeroplanes, cleaning purposes, solvents, etc., as 350,000,000 gallons the total consumption would be 2,000,000,000 gallons. This gives us an idea of the enormous consumption of gasoline.

1. Deductions made from a graph in *Industrial Journal*, March, 1915. Figures for last two or three years taken from statistics given by Director Manning of Bureau of Mines in article in *Petroleum News*, Nov. 18, 1916.





Graph II shows the approximate number of gallons of gasoline used by automobiles in the United States year by year from 1905 to 1916. Graph III shows the increase of consumption of gasoline in England, a non-producing country.² Graph IV shows the output of American crude oil year by year from 1902 to 1916.³ If we now compare the increase in production of American crude with that of the consumption of gasoline we will see a striking contrast:

Percentage increase of gasoline consumption by automobiles in U. S.	Percentage increase of gasoline consumption in England	Percentage increase in production of American crude
1915 over 1914---37%	25%	6%
1916 over 1915---43%	13%	7%
1916 over 1910--924%	200%	44%

These figures and graphs show conclusively that the increase in production of crude is remaining approximately constant while the consumption of gasoline is rapidly on the increase, in fact, so rapidly that it is necessary that there be a halt soon.

The tremendous increase in the consumption of gasoline has undoubtedly been a big factor in the general increase in prices paid for gasoline. This is shown by the fact that oils richest in gasoline showed the greatest increase in prices. Crude oil from the Pennsylvania fields which run high in gasoline content sells at three times the price of California oils which run very low in gasoline content.

There are other factors which tend to make prices high. The consumption of fuel oil in this country for steaming purposes has more than tripled since 1906. This of course has a tendency to decrease the amount of available oil for making gasoline, and as a result raises the price of crude. If we look at the enormous increase of gasoline consumption we are more than surprised that prices are as low as they are.

There are several factors which have tended to keep the price of gasoline normal regardless of the increased consumption. We will discuss a few of these factors. During the past few years a most wonderful revolution has taken place in oil refining. New systems have been perfected foremost among which is the Burton process, which alone, it is claimed, more than doubles the output of gasoline. Then there is the Rittman system which makes great claims in the direction of largely increasing the gasoline yield

2. Taken from a chart in *Journal of Ind. and Eng. Chem.*, March, 1915.

3. Taken from data in *American Petroleum Industry* by Bacon and Hamor, page 256.

and is already a success commercially. The Burton and Rittman processes are two of the most successful "cracking" processes.

The process of "cracking" has been known for several years but it is only recently that it has been worked efficiently. The cracking of heavy hydrocarbons by heat is to be regarded as simply an instance of the general rule that organic compounds decompose with heat. The heavier hydrocarbons of higher molecular weight are less stable at high temperatures than those of lower molecular weight. Hence, we find that, if the higher hydrocarbons of higher boiling range and higher molecular weight are heated to relatively high temperatures under pressure, they have a tendency to decompose and form more stable hydrocarbons of lower molecular weight and lower boiling range. Thus, we find that it is possible by a cracking process to change a lubricating oil, a fuel oil, or a kerosene into a gasoline product. The Burton process is used by the Standard Oil Company, and they claim that they can change 62% of the crude quantitatively into gasoline. By straight distillation the average percentage of gasoline from crude would be less than 10%. So here we see an important reason why it has been possible greatly to increase the production of gasoline without increasing the production of crude.

Again, the production of "casing head" gasoline is rapidly increasing. Statistics just completed by the U. S. Geological survey showed that the year 1915 was one of decided expansion. The quantity of gasoline extracted from natural gas for the past three years is as follows:

1913—23,982,000 gallons	
1914—42,648,000	" gain of 77%
1915—65,360,000	" gain of 53%

Blending this "casing head" gasoline with "straight refinery" gasoline and naphtha or the lighter portion of the kerosene range gives us a gasoline which is equal in gravity and probably in quality to "straight run" gasoline. The "casing head blend" gasoline is different from a "straight refinery" gasoline in that it has a longer boiling range. It has a greater percentage of light volatile product and to compensate this a slightly higher percentage of kerosene. Graphs V and VI show this fact.

The great demand for gasoline has greatly changed the quality. The gasoline now on the market averages ten degrees Baume lower than the product of about ten years ago. Chart I shows the tendency during the past four years. It gives the average Baume

gravity, distillate at 158° F., and the residue at 284° F., of all low grade gasolines received at this laboratory from year to year from 1913 to 1916. There is a drop of 4.1° Baume in four years. The same tendency will be seen in Charts II, III, IV, and V., which show the average of all gasoline received from the different jobbers in the State.

Chart I. Average of all low grade gasoline analyzed

Year	Gravity	Distillate at 158 F.	Residue at 284 F.
1913	62.1	1.7	17.0
1914	60.6	2.5	24.0
1915	59.3	3.6	31.2
1916	58.0	3.4	37.6

Chart II. Average of all low grade gasolines analyzed from Company A

Year	Gravity Baume	Distillate at 158 F.	Residue at 284 F.
1913	62.8	2.6	16.7
1914	60.2	2.2	23.0
1915	59.5	2.0	28.0
1916	57.9	2.0	36.1

Chart III. Average of all low grade gasolines analyzed from Company B

Year	Gravity Baume	Distillate at 158 F.	Residue at 284 F.
1913	62.5	0.7	13.7
1914	61.8	3.0	13.0
1915	61.5	4.4	17.7
1916	59.8	3.0	27.3

Chart IV. Average of all low grade gasolines analyzed from Company C

Year	Gravity Baume	Distillate at 158 F.	Residue at 284 F.
1913	61.0	2.5	25.0
1914	No Samples		
1915	59.4	4.0	29.8
1916	57.0	1.0	39.0

Chart V. Average of all low grade gasolines analyzed from Company D

Year	Gravity Baume	Distillate at 158 F.	Residue at 284 F.
1913	60.1	1.0	17.0
1914	59.4	2.5	24.3
1915	58.9	3.5	32.0
1916	58.3	3.4	38.1

We notice that the residue is increased from year to year and this means that a larger portion of kerosene is added from year to year. A mixture of kerosene with a gasoline does not necessarily give a poor motor fuel. It depends on the amount and the portion of the kerosene range which is used in the mixing. Users of automobiles have found that in most cases the heavier grades of gasoline are perfectly satisfactory. For continuous running, with engine hot, gasolines of lower gravity show excellent results and an improvement in power over the high test gasoline, if complete combustion takes place.

The claims made by many refiners for the superior power producing qualities of their gasolines are largely without foundation. It was experimentally determined by the Bureau of Mines that out of 52 samples of gasoline tested the average difference on either side of the mean value was 2.1 per cent making at most a variance of 4.2 per cent in power production. It was also found when gasoline is measured by volume, that the lower test Baume gasolines give a slightly higher power value. We therefore conclude that the element of superiority in "high test" gasoline lies only in the fact that it gives a maximum efficiency over a wider range of engine conditions. Therefore those automobile owners who have cars of suitable construction and necessary adjustments can get as good results out of cheap gasoline as out of an expensive "high test" product. Several of our auto trucks are now running on straight kerosene and already there are automobiles built to start and run on straight kerosene. It is now recognized that only slight changes are needed in the carburetor to make the use of kerosene common. This is substantiated by the fact that we have motor fuel on the market at the present time equal in gravity to "high test" kerosene. Necessity has brought this about and it is one way of meeting the demand.

In view of the facts that refineries are putting on the market gasolines which run as high as 30 to 40% in the kerosene boiling range, but also that our production is not keeping up

with the demand, shall we legislate and make gasoline specifications? For the buyer who is willing to pay higher prices for the sake of a better product it would probably be alright to legislate. But the question arises, is there more objection raised to the present grade of gasoline or to the present prices? If we make rigid specifications, gasoline will necessarily rise in price and its supply will last a shorter period of time.

What do we mean by specifications and is it an easy matter to make specifications which will meet all conditions? We will discuss some possible specifications. The gravity test has been discarded by Director Manning of the Bureau of Mines. It is his belief that the gravity test may give a high rating to a poor gasoline and a low rating to a good one. Our investigations show this to be true. We have in our laboratory two gasolines whose boiling range is nearly parallel and similar whose gravities are 49° and 55.5° respectively. We might further compare a gasoline of 49° B. gravity with a kerosene of the same gravity and we find a difference of over 100° in their initial boiling point and a difference of 200° in their end points. A comparison of these two gasolines and kerosene is made in Graph VII. For a given distillation range an Oklahoma gasoline is about 2.5° to 3.5° B. heavier than an eastern gasoline and a California product is from 4° to 8° B. heavier than those from the Pennsylvania field. Because of this difference in gravity for gasolines of a given volatility gravity has been discarded as a criterion for rating a gasoline.

The basic property which determines a gasoline is volatility or the range of its boiling points. It is desirable to have a certain percentage of fairly low-boiling constituents so that engines may start more readily, but a large proportion would make it undesirable because of a loss thru evaporation and accidental ignition or explosion. A reasonable amount would probably be about 3.5% at 158° F. or 70° C. At the University laboratory the average percentage distillate at 158° F. of all low grade gasolines analyzed was 3.4% for the year 1916 and 3.6% for the year 1915. Chart I shows the average percentage distillate in all low grade gasolines analyzed from 1913 to 1916 inclusive. Charts II, III, IV, and V show the same for jobbers in the state. Again, a reasonable low endpoint is desirable in order to insure complete vaporization but it makes an expensive gasoline. The average endpoint of low grade gasoline is approximately 375° F. and a residue of 37.5% at 284° F. or 150° C. The average endpoint for 1916 of all low grade gasolines analyzed at the University laboratory was 377° F. and the percentage residue

at 284° F. was 37.6%. Chart I shows the percentage from year to year from 1913 to 1916. Charts II, III, IV, and V show the same for different companies selling oil in the state. The initial boiling point, the distillate at 158° F., and also the endpoint and residue at 284° F. are factors which should be varied with the season of the year, climatic conditions and types of cars. The winter season of North Dakota would demand a slightly higher percentage of volatile distillate at 158° F. than the warmer climate of southern states. A reasonably low end point is desirable in order to ensure complete vaporization in cold climates or in winter time, while this end point might be raised considerably in summer and in warmer climates.

The grade of a gasoline is a variable factor when it comes to types of cars and the age of a car. Cars built three or four years ago were built for gasoline sold at that time, while the more modern car has a carburetor which can work efficiently with rather low grade gasolines as they are put on the market today.

With this situation before us we find it rather difficult to make specifications. If specifications are made they must be broad and should not exclude any type of gasoline from being sold. Specifications might be made within which all products named gasolines should come. Those not coming within these specifications could be sold as motor fuel. This would not exclude any type of motor fuel from being sold, only it would not be possible to sell kerosene for gasoline. Such specification would not in any way curtail the manufacture of low grade motor oils.

Another method of procedure might be to provide that any motor fuel be placed on the market, *but* that it be labeled as to its 20% and 90% distillation temperature, so that the purchaser would know the degree of volatility of the motor fuel he was buying. For example, a gasoline labeled "210-360" would mean that at least 20 per cent boiled over at 210° F. and 90 per cent at 360° F. Or, we might demand that it be labeled as to its 10%, 50%, and 90% distillation temperature. In this case a "170-270-370" gasoline would mean that 10% boiled over at 170° F., 50% at 270° F., and 90% at 370° F. Just what would be fair specifications is a matter of some debate. If specifications are made they should not be rigid and reduce the quantity of gasoline produced from a gallon of crude, nor should they in any way work against conservation of natural petroleum resources, and against the development of the petroleum industry.

In summarizing, the desirable properties of a gasoline may be stated as follows,

1. Gasoline should not give a disagreeable odor before or on combustion. This is objectionable to users of automobiles and shows poor refining.

2. It should be free from matter not hydrocarbon, such as water, sediment, acid, and sulphur. Acid and sulphur have a tendency to act upon the metal parts of an engine.

3. It should not contain excessive percentages of unsaturated hydrocarbon because they have a greater tendency to carbonize.

4. It should not contain too large a percentage of volatile products because of loss thru evaporation and danger of accidental ignition and explosion.

5. It should not contain a high percentage of heavy products which will not volatilize.

These are the requirements for a good gasoline. It still remains to fix the limits to these requirements.

The Habits of the Thirteen-Lined Ground Squirrel

(CITELLUS TRIDECIMLINEATUS), WITH ESPECIAL REFERENCE TO THE BURROWS

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OUTLINE

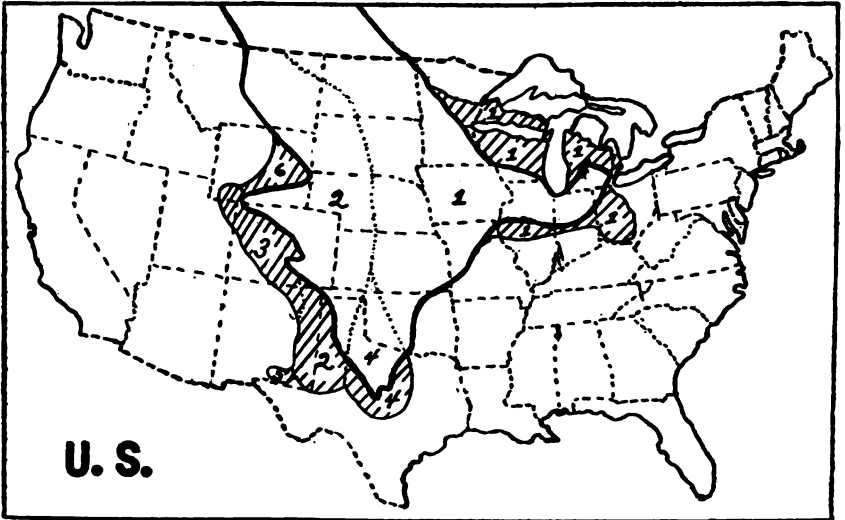
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I. INTRODUCTION

THE following paper is a brief preliminary report concerning the general habits of the thirteen-lined ground squirrel. The hibernation of this species will be discust in a later paper. The work will be continued with the view of working out the complete physiological life history of the species in question.

II. METHODS

The habits of the ground squirrels have been observed both in the field and in the laboratory. The burrows and nests have been studied in the field and the animals have been subjected to experiments in the laboratory. The facts already publisht have been brought together, and a questionnaire was sent to various universities or agricultural colleges of the states within and immediately adjacent to the region of the reported distribution of the species. The replies from these institutions afforded valuable data.



MAP SHOWING THE DISTRIBUTION OF *CITELLUS TRIDECIMLINEATUS* IN THE UNITED STATES

Distribution in 1893 according to Bailey (1893) is shown by the heavy line.

Extension of distribution since 1893, as gathered thru correspondence, is indicated in parallel lines.

Varieties of the species *Citellus tridecemlineatus* are separated by dotted lines, and are numbered as follows:

1. *Citellus tridecemlineatus* (the typical variety).
2. *Citellus tridecemlineatus pallidus*.
3. *Citellus tridecemlineatus parvus*.
4. *Citellus tridecemlineatus texensis*.
5. *Citellus tridecemlineatus hollisteri*.
6. *Citellus tridecemlineatus alleni*.

III. GENERAL FACTS CONCERNING *CITELLUS TRIDECIMLINEATUS*

I. DESCRIPTION

Citellus tridecemlineatus receives its specific name from the characteristic number of lines (thirteen) on its back. Six narrow, yellowish-gray to brownish-gray stripes alternate with seven broad, reddish-brown ones. Each of the latter contains a row of dots of the same color and width as the six narrow stripes. The under parts are light gray to yellowish gray.

The animal may be easily recognized by its shrill, rapidly-repeated whistle, when once the sound is associated with the species. (For voice, see Bailey, 1893.)

2. GENERAL DISTRIBUTION

The distribution of the species as worked out by Bailey in 1893 included the following states: North Dakota, South Dakota, Iowa, Nebraska, Kansas; parts of Oklahoma, Minnesota, Wisconsin, Mich-

igan, Ohio, Indiana (northwest part), Illinois (northern part), Missouri, Texas, Wyoming, New Mexico, Colorado, and Montana. He gives the northern limit as the 52nd degree of north latitude in Saskatchewan. Replies to the questionnaire sent to state institutions show that the species has extended its limits to some extent since Bailey's map of distribution was compiled. The accompanying map shows Bailey's distribution in outline and the additional territory in parallel lines.

Eight varieties of the original species have been described, according to a letter from Mr. D. E. Lantz of the U. S. Bureau of Biological Survey. Only six of these varieties are shown on the map, because the range and scientific standing of the other two have not been worked out (Lantz, l. c.). The typical *tridecemlineatus* is the variety under consideration in the present paper.

3. LOCAL HABITAT

Relatively high prairies and knolls are the favorite habitat of the ground squirrel. Low and wet ground is generally avoided, but well-drained parts of creek and river valleys make a suitable habitat. Black or clay soil is preferred to any other, but the animals are sometimes found in sand. Replies to the questionnaire referred to above show that in at least two states they are sometimes found in thin woods or shrubbery.

IV. HABITS OF *CITELLUS TRIDECEMLINEATUS*

I. FOOD

Grains and insects appear to be the chief foods of the ground squirrels. They also eat weed seeds, fruits, some roots, some bark, small animals, and various nuts (Bailey, 1887, 1893; Burnett, 1914). The animals observed in captivity ate almost anything. In the field they store quantities of grain in their nests in early autumn. Their ravages in fields of sprouting corn in the springtime, and their habit of cutting down the grain in the fall before the ovules are formed, thus destroying a great deal more than they eat (Bailey, 1887), has often resulted in efforts to destroy them by means of poisoned grain and by fumigating the burrows. Bounties have been offered in some states. (See Bailey, 1893; Burnett, 1914; Bell and Piper, 1915.) That the ground squirrel is beneficial to some extent is shown by the fact that the stomachs examined by Gillette (1889), Aldrich, (1892), Bailey (1893), and Burnett (1914) showed nearly fifty per cent of animal matter. This animal matter consisted largely of remains of injurious insects (grasshoppers, cutworms, wireworms, and

others), but also some beneficial ones (Carabid and Harpaulus beetles and others) were eaten. The animals in the laboratory were found to kill and eat mice, and one female even ate her young. Burnett (1914) reports their eating young chickens. A male killed a female and chewed away the upper part of the neck, when the two were placed in the same cage in the autumn.

It has been a question whether ground squirrels ever drink water, or depend upon succulent foods for the water they need. Two ground squirrels kept under close observation were found to go to a tumbler of water in their cage, place the fore feet upon the edge of the glass and drink. As they did so they moved the lower jaw up and down, producing a sound somewhat similar to that of a cat lapping milk. They repeated this behavior several times. Captive animals always ate water-containing foods, such as grass, apples, baked potatoes, and stewed prunes, with great relish. It appears that the animals will drink water when they have access to it, but that when they are great distances from water, they must depend upon vegetation and insects for it. Some water may be secured on vegetation after rains and dews. The ground squirrel also excretes comparatively little water, this making its water requirement lower than it otherwise would be.

2. BURROWS

More than a hundred burrows were dug out. Ground squirrels were found only in those burrows which they were seen to enter. Approximately fifteen of these burrows were in the sandy regions of South Chicago (Nov. 11) and were of one type, about two feet in length and eight to fourteen inches in depth, and showing no evidence of recent occupancy. Measurements were not recorded of these burrows.

The remaining burrows were in sod (humus) with clay subsoil. These ranged from four inches to twenty feet in length and from four to forty-six inches in depth. Of the seventy-eight burrows measured, thirty-seven per cent were two feet or less in length and nine inches or less in depth; while sixty-seven per cent were four feet or less in length and thirteen inches or less in depth; and only fourteen per cent were longer than six feet or deeper than seventeen inches. Along a lane between an oat field and a pasture a large number of very short, shallow burrows were found, of which no measurements were recorded. Apparently the latter were refuge burrows used in journeys between a source food and the permanent burrow within the pasture. A few short ones were found within this pasture itself (near New Lenox, Ill.), but generally longer,

deeper burrows prevailed here. No burrows were straight for any great distance, but the direction of any given four or five inches deviated more or less from the direction of the adjacent parts. One burrow went down for eight inches in a perfect spiral. Usually the burrows went nearly straight down for two or three inches, then turning obliquely as illustrated in Fig. 1. Some burrows were partially filled with grass and soil for short distances.

The observations reported here differ from those of Kennicott (quoted by Cory, 1912), who states that the summer burrows often have two openings and that the winter burrows often have two or more openings. Only six of the burrows described here had two openings, and only one of these had been recently occupied, whereas

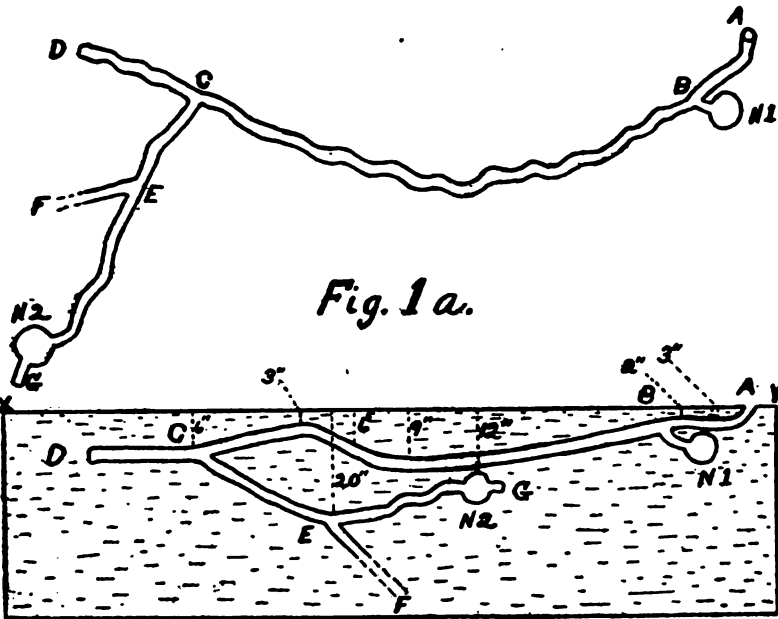


Fig. 1 a.

Fig. 1 b.

Fig. 1 a. Map of one of the longer, deeper burrows found.

Fig. 1 b. Diagram showing depths of different parts of same.

A. Entrance to burrow.

F. Descending branch.

N 1. Nest No. 1, Diameter 8 in. Filled with oats.

N 2. Nest No. 2, Diameter 7 in. Partially filled with oats.

Distances: A to B, 22 inches; B to C, 10 feet; C to D, 2 feet; C to E, 2 feet; E to G, 3 feet.

Depths given in inches on dotted vertical lines.

X—Y is the level of the top of the ground.

many of the burrows with but one opening bore evidence of recent occupancy. It is possible that proximity to buildings may cause the animals to dig more than one entrance to their burrows. Attempts to catch ground squirrels near buildings (Grand Forks, N. Dak.), proved that two or three of the burrows there had more than one entrance. In the open field, however, I found the single-entrance burrow without branches decidedly predominant. Only six burrows were found which were branched.

Observations in the laboratory furnished interesting data concerning the manner of digging and of closing the burrows. In digging, the ground squirrel makes a few very quick, alternating strokes with its fore legs throwing the soil about its hind legs. This is followed by a straightening of the body and quick alternate strokes by the hind legs which throw the soil back with great force, at the same time scattering it. It used the same method in levelling the soil in front of the hole, starting some distance away and simultaneously scratching and moving towards the hole. Probably soil is scattered in this way in the field, as usually none is found at the entrance to the burrow. The closing of the hole was observed in a ground squirrel which had made a burrow in soil in a large cage. Upon seeing anyone approach it would dart into the burrow and close the entrance. The soil appeared to be loosened and partly shoved into the opening with the fore feet, then the soil was forced along the burrow by a rapid shove of the head, and following this it was packed by quickly repeated and forceful "thuds" of the head. The packing of the soil in the mouth of the burrow with a head well-shaped for the work is very important to the animal, for this obliterates the entrance to the hole, thereby keeping out not only enemies, but also the cold in winter and the water in early spring. That it is the habit of the animal to close its burrow in the winter is shown by the behavior of three ground squirrels which were placed in outdoor cages extending four feet into the soil. Each dug a burrow and in chilly weather closed the entrance, leaving it closed to a depth of a few inches thru the winter while they were in hibernation. The extent to which the burrows are packed full in the field needs further investigation. Inability to dig out ground squirrels in the field after hibernation has begun suggests that the holes may be packed exceedingly hard for great distances.

3. NESTS

a. Relation to Burrows, and their Uses. Doubtless the most important portion of the permanent burrow is the nest, for it is in

these that the animals live. This is made certain by their behavior in the laboratory. When the depth of soil permitted they dug burrows and built nests. When the soil was too shallow for this, they dug into one corner and built a nest there, gathering with feet and mouth the available materials and arranging these by pulling them about themselves and going thru the mass at different points. In these ball-shaped nests they would curl up and sleep when curiosity and hunger did not keep them out. The nest is also the portion of the burrow in which the animal hibernates. The three animals referred to above as hibernating, when dug out of the soil in early spring were found in nests of grass. It is in the nest also that food is stored as was proved by the presence of grain in the nests of the three ground squirrels referred to, and in practically every nest examined in the field. Oats, wheat, corn, and weed seeds have been frequently found between the excavated space in the ground and the grassy nest which filled it. In the recently occupied burrows this food varied from considerable in the late summer to a small amount in the late autumn. The nests were usually found in the longer and deeper burrows. Of the seventy-eight burrows recorded twenty-two had nests connected with them. Two of these had two nests.

b. Description. Some of the nests were found to one side of the burrows, others at the ends of the burrows and still others in the direct course or at an angle of the burrow. The nests were often somewhat higher than adjacent parts of the burrow. The diameters of the excavated places occupied by the nests ranged from four to ten inches. Eighty-three per cent were between five and eight inches in diameter. In depth, or distance between the surface of the ground and the top of the nest, they varied from three inches to twenty-nine inches. Twenty-seven per cent ranged between the depths of three to seven inches inclusive, forty-six per cent ranged between depths of eight to fourteen inches inclusive, and twenty-seven between fifteen and twenty-nine inches inclusive. The nest in each case was almost a perfect sphere and was built chiefly of dry grass well woven together. In some nests a hollow place was found in the middle, in others the materials formed a more or less decayed mass. In one case a definite opening into the cavity of the nest was found in one side. The presence of seeds or hulls of seeds indicated that most of the nests had been occupied during the previous summer.

c. Nests of Especial Interest. Two interesting nests were found in the longest burrow. The burrow occurred in a pasture near Canistota, S. Dak., fifteen rods from an oatfield. The first

nest (N 1, Fig. 1) was about two feet from the outside opening, the entrance running back under the first part of the burrow. This nest was filled entirely full with unshelled oat kernels and a little dry grass. The estimated number of seeds by counting one-sixteenth of them was 23,000 to 24,000. This nest was only seven inches below the surface of the ground, and may have been an emergency storehouse. The second nest (N 2, Fig. 1), was about sixteen feet from the first, measuring along the burrow, and was twelve inches below the surface of the ground. It was seven inches in diameter, one less than the first nest. It contained a handful of dry grass and about 4,000 oat kernels unshelled. The nest may probably have afforded room for one ground squirrel. Figure 1 shows the essential features of the burrow which contained these two nests. It is to be noted that the second nest is protected against any "drowning out" methods by being higher than the part of the burrow leading to it and also by the descending branch near it. The depth of this was not ascertained because of lack of time. However, two deep holes found at New Lenox, Ill., and one at Riverdale, Ill., were dug out to the end and were found to end blindly, appearing to serve no definite purpose except possibly that of a drain. Two of these were of the type of the one mentioned above, which probably ended blindly also. A nest dug out near Grand Forks, N. Dak., near a wheat field contained probably about two or three thousand wheat kernels (Oct. 1916). As the stored grain is ripe it probably does not represent a loss to the farmer, for the ground squirrel had probably taken it from the easily secured heads lying loose on the ground.

4. TIME OF HIBERNATION

The hibernation of the thirteen-lined ground squirrel will be discussed in a later paper, so only some general considerations can be touched upon here, chief of which is the duration of this period of "winter sleep." This species is one of the so-called warm blooded animals that hibernate. In this connection my observations show that the animal does not have a fixed "normal" temperature. Records of over seventy temperature observations taken on about ten different individuals show readings ranging from 33° C. to 40.7° C., being well divided between the temperatures of 36°, 37°, 38°, and 39°. Variations in one animal in one day were found as great as 4° C. Connection between this condition and the phenomenon of hibernation has been suggested by workers on other animals (Cf. Rasmussen, 1916, p. 614). In the normal animal great activity

proved to be an important factor in raising the temperature, and on the other hand the animals were much more active in a warm than in a cold room. In hibernation the warm-blooded (homoiothermal) animal becomes for the time being practically cold-blooded (poikilothermal), and is able to take a temperature very near to that of its surroundings; the metabolism of the body decreasing with the lowering of temperature.

The time of hibernation of *Citellus tridecemlineatus* varies with the weather conditions. A cold wave may cause them to retire for the winter as early as Oct. 10 in South Dakota (Hahn, 1914) and they have been seen as late as Nov. 9 in Colorado (Burnett, 1914). In 1914 my last ground squirrel was taken on Oct. 17 at Canistota, S. Dak., and in 1915 my last three were caught on Oct. 30 at New Lenox, Ill., none being seen on Nov. 25. In 1916 no ground squirrels were seen at Grand Forks, N. Dak., on Sept. 30 or later. In the spring they are reported as having been seen early in March in South Dakota (Hahn, 1914), March 23 in Colorado (Burnett, 1914) and March 27 (1910) and March 28 (1911) in Illinois, the weather having been warm before the last two dates (Cory, 1912). On April 1 (1916) I saw no ground squirrels at Riverdale, Ill., altho the afternoon was spent in digging out burrows and otherwise looking for them. On May 6 six or seven were seen at New Lenox, Ill., their timidity at this season making them less conspicuous than in the later summer.

5. REPRODUCTION

The breeding season comes shortly after the adult animals appear in the spring, probably usually in April. The young are usually born somewhat earlier than June 1st. Mr. A. R. Cahn, of the University of Wisconsin, writes that he found newly born young on May 24. A female caught early in May 1916 (New Lenox, Ill.) gave birth to six young on May 27 or 28. Lee, (1902) gives the period of gestation as about one month. The number of young in one hundred twenty-nine pregnant females were found by Lee (l. c.) to average eight and one-half, ranging from five to thirteen. He found only four non-pregnant females during the one week in the middle of May in which he collected these animals.

The young are born in an embryonic condition. They have no hair till they are twenty days old and their eyes are closed till they are thirty days old (Bailey, 1893). Half grown young were numerous near Grand Forks, N. Dak., early in July, 1916. A young animal was caught June 22, 1915, near Canistota, S. Dak.,

and placed in a cage with an adult female caught at the same place and time. It secured milk from the female, and became very playful, running back and forth in the cage, playing with, leaping at and persistently tormenting the older one.

Observations in the laboratory discredit the idea that a male and a female occupy one burrow in the field. In the autumn a male and a female in adjacent cages appeared hostile to each other, and of a pair placed in a large cage outside the female was killed and the neck badly mutilated. In March, however, a male and a female occupied one cage agreeably for about a week. In July the same male and two females were in one cage for a few days. In the first case quarreling ensued and in the second case fighting took place, so the animals were placed in separate cages. The two females also fought when in one cage. In the field the nests appear to be too small to accommodate more than one animal. When the burrow shown in Figure 1 was dug out one ground squirrel came to the burrow and showed by its actions that the burrow belonged to it. This one was caught and no other appeared during the afternoon. Evidently this burrow belonged to only one animal. Many half grown animals are often seen at one burrow, however. It appears probable that each adult ground squirrel lives apart from other adults except possibly for a short time during the breeding season.

6. RELATIONS TO OTHER ANIMALS

The natural enemies of the ground squirrel as given by Bailey (1893) are hawks, burrowing owls, badgers, foxes, coyotes, wild cats, skunks, weasels, and snakes. The destruction of these enemies has resulted in an increase in the number of ground squirrels, according to Burnett (1914). Three garter snakes and a weasel were found in as many ground squirrel burrows.

Two parasites of the ground squirrel were found—small arachnids in some of their nests and on some of the animals, and three living round worms in the intestine of a hibernating animal and two in the stomach of one caught in the spring.

The burrows are often a refuge for animals that are not necessarily enemies or prey. Grasshoppers, crickets, and spiders are frequently found near mouths of burrows. In a sandy region two salamanders, and in a pasture (New Lenox, Ill.) two nests of young mice were found in different burrows.

V. ACKNOWLEDGEMENTS AND BIBLIOGRAPHY

To Dr. A. S. Pearse, for suggesting these studies; and to Dr. M. M. Wells, for his assistance in the pursuance of the work; and

to those who kindly replied to my questionnaire, I wish to express my sincere thanks.

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KELP*

Interlaced flora, maze and tangle of growth!
The same I saw last night and yester-year,
The same God saw in yester-aeon:
Wonderful to us both!
Whether in North afar its peace or here,
Or fusing dream with waters Caribbean,
To keep identity of selfhood so,
To thrive on menace, unperturbed to grow
Despite the impact of the tidal seas,
Merits a little heed in days like these.
Assaulted constantly by burly breakers,
Yet ne'er repaying blow for blow;
Peacefuller than Quakers,
Albeit Ocean bugles in its ear
To legionary onset and a host
Makes thunderous bombardment of the coast;
Ne'er giving way to fear,
Keeping in strength and spirit equipoise,
Despite confusion, turmoil, noise;
Surf-buffeted, storm-howled-at, ocean-hissed,
Yet still—pacificist;
Gigantic, yet with Sabbath mood always,
June or December, night and day:
Verily here I find
In stringy kelp of homely brown
What I have searched the world for up and down,
Nor hoped might ever be,
Whether in world of matter or of mind!
Of such as Kelp the Kingdom verily!

Changeless, and yet—all changed!
For where is aught the same in world so wracked
And anguished as to-day's!
Almost I walk estranged
With sea, with morn, impotent to react
To the bloom, the glow, wherewith they meet my gaze.—

* Explanatory note. Summering on the Pacific coast in 1916, the author of the above poem lived within sight and hearing of barges that ceaselessly were harvesting kelp. By recent discovery kelp had been made a source of potassium salts, used in the manufacture of certain explosives. Out of these circumstances came the theme of the poem. It has already appeared, slightly abbreviated, in the March number of the *Forum*, and is herewith reprinted with the omitted part restored.

I said: "Poor thrift, this sleeplessness abed!
 I'll up and hie me where the Sea halloos
 His tides. I'll up and share the morning red
 With ocean kelp. Mayhap a blend of hues
 Rarer and richer now is on the ooze
 Than I have thrilled to yet,
 Trysting with sea at rise of sun or set."
 Surmise was not amiss:
 Ne'er bed of kelp more multi-hued than this!
 A spirit of beauty is abroad this hour
 In rarity like a flower.
 What infinite repertory Nature hath
 Of joy: winged sun from ocean's chrysalis,
 And cataract of stars out of her gloom!
 But man perverting her to ill,
 Making her serve his wrath,
 Making her sting, and stab, and kill—
 Therein and thence is doom.

And can it be
 Yon amplitudes of kelp are being made
 Means of the world's war madness, too, and aid!
 That yonder girdle of the sea,
 Oozy ocean cincture of continents,
 Held a hidden sword, a shining blade,
 Whereby the world's Berserker wrath augments
 Slaughter, this time of fate!
 Flown o'er by pelicans with oaring wings,
 Neighbor to ocean lands throughout which sings
 The meadow lark all seasons of the year,
 Winter's no less than spring's,
 How all aloof this scene from hate!
 How unconcerned with aught of fear!
 Of the all-engulfing war,
 With nation slitting nation's jugular,
 And Teuton plunge for world hegemony,
 What recked the kelp-tranced sea!
 Yet lo, in the distance, barges,
 Harvesting night and day with triple shift
 Of toil the kelp from whence my soul's uplift,
 Rapture and spirit largess!
 For Science, keen-eyed, hath espied

Swathed high explosives in yon langorousness,
 Useless, forsooth, till now in wind and tide.
 Such the tentacles war hath,
 Such the suction of its wrath,
 All-commandeering war, without redress,
 All-spoliating for its own increase,
 Even this morning dream and vesper peace
 Is wrought into its Clytemnestra net,
 And flung around mankind for butchery!
 Great God, how long shall yet
 Such nations' Ate be!

O the Nemesis in things,
 That thus out of discovery only springs
 More poison-fanged a world and keen of claw
 To lacerate and rend!
 While steadfast Science labors to the end,
 Translating matter into terms of Law,
 Of bringing things beneath the sway of man,
 Man 'neath the sway of things bemeans himself
 As never hitherto since time began.
 Anathema! "Retro me Satana"
 To Science, if indeed her summing up
 Be ill for human kind! Ay, dash it down,
 If for the race be poison in the cup!
 At least the days of Ghibelline and Guelph,
 Howso they splashed their blood-feuds o'er the town,
 Could not coerce sweet Nature to their ends
 Of vengeance and affright;
 At least when Greek fought fellow Greek, their might
 Of mutual destruction found not help
 And furtherance in clinging beds of kelp,
 Awakened out of oozy sleep in bends
 And windings of the Grecian shore.
 Ah, never, never more,
 These waters should be named Pacific!
 Surely all forfeit is the name they bore,
 Being put to use so martial, so terrific!

Here in high Dream's employ,
 And tense Hebraic mood,
 Purged of all individual alloy,

These leagues of mighty ocean I surveyed
 As symbol of like vast pan-racial good.
 Then suddenly the soul in me
 Rose geyser-like in wild apostrophe:
 America, my country, art thou weighed
 In the balance and found wanting? O thou Land
 Of promise unfulfilled, and high desires
 Blasted like waves upon an iron strand!
 With thy dread failure thou dost make afraid
 Who trusted thee, hoped for thee, and lit fires
 For beacons on thy mountains. Thou dost reel
 With wine, art fat with feasting, and thy lips
 Are the abode of wantonness and mirth;
 Thou peoplest the great deep with ships,
 And on the uttermost earth
 As conqueror hast trod and set thy heel.
 Yet thou hast made of weal
 A fetish god, and worshipest thy gold
 As calf-delirious Israel of old.
 It was not for the dancing of such rite
 Thy feet have forded seas
 With pillar of cloud by day and fire by night;
 Nor passed they through those dire calamities
 Of other nearer days, whereof the woe
 Still lives, to stumble now and go amiss.
 O lifted up by that vast earthquake throe
 To be the world's enskyed Acropolis,
 Thinkest thou to be hid!
 Forgive my lips, forgive me that I chid,
 White Wonder of indomitable will!
 But I would see thee as I once did see,
 With prairies, mountains, wave-anointed strands,
 The Virgin-born of lands,
 Fulfillment of thy singers' prophecy,
 And of all nations the Messiah still!

The sea itself upheaves
 To pace the world with tides, and scattered leaves
 Its kelp to etch the pathway of its march.
 The roar summons me back from elsewhere—
 The human welter of energy,
 With brinier kelp from waters more resistless.

Almost I would the vastness seething there,
 The waves with feet that prance, with necks that arch,
 All the super-beauty of the sea,
 Might drug me to forget, with heart grown listless,
 The pitifulness and pathos of man's life,
 The pitifulness and tragedy of his strife.
 Just when democracy was nascent; just
 When man was climbing upward out of dust
 With something of momentum, and a new
 Zest of achievement thrilled him through and through;
 Just when he thought to lay more bastions low
 Of privilege and error, and make way
 With ancient exploitations, and to grow
 Into the stature of Himself indeed—
 Then this Nay
 To his dreams, to his hopes, to God!
 Then Belgium trodden into the sod—
 Ploughed under by the Teuton human plough,
 Before which freedom is a noxious weed,
 That, flowering, menaces with thorn and spike;
 Then in that racial crisis, we
 Battening on blood-lucre, Judas-like;
 Nor even protesting, save for our own rights—
 Studious of our own ease and how
 To prosper, whereso victory or defeat!
 But wherefore, wherefore repeat
 Here within ear-shot of the moaning sea
 The story of man's plunge adown the heights!
 I'll discipline myself to be resigned.
 Withdrawal still is possible and sweet,
 Withdrawal still is home—
 Pillow and cup and bread to soul and mind,
 Wearied and sick of things as they of yore.
 Civilization is a little foam,
 Riding a little kelp, and cast ashore,
 And canceled by a little noon forevermore.

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Book Reviews

LIGHT AND SHADE AND THEIR APPLICATIONS M. LUCKIESH,
Physicist, Nela Research Laboratory, National Lamp Works of
General Electric Company. D. Van Nostrand Company, New
York, 1916. XII+266 pp., 135 illustrations and 10 tables.
Price \$2.50.

It is an interesting fact that altho as a branch of physics the scientific side of light has received an enormous amount of attention and probably has been carried farther than any other branch, and altho the arts of representation by means of color and light and shade began with the earliest history, yet the scientific foundation for the applications of light and shade and color in many of the arts is so little known that the author of this book may say "I am unaware of the existence of any treatise in which a general analytical discussion of light and shade has been presented."

Light and Shade and Their Applications is a treatment of the *science* of the subject and the *art* is discust largely for the purpose of illustrating the usefulness to the artist of a knowledge of the fundamental principles. It is recognized that "art cannot be manufactured by scientific formulae" but it is rightly contended that every artist in any field should have a knowledge of the scientific principles underlying his art.

The first six chapters are devoted to a definition of terms and a discussion of the main principles—light intensity, brightness, reflection and reflection coefficients, the shadow, the cast shadow, a scale of values, and color. Then there is a chapter each on light and shade in nature, in sculpture, in architecture, in painting, in stagecraft, in photography, in vision, and in lighting. The need for some scientific basis in each field is shown and the general principles establish. Each chapter is abundantly illustrated as well as the limitations of photographic and printing processes will allow, and there are 135 illustrations in all.

As an illustration, quite inadequate of course, of the method and subject matter of the book we may take the discussion of the range of contrast which the eye will tolerate. If we assume a white, diffusely reflecting sphere to be resting upon black paper in an ordinary room lighted by daylight, the brightest point on the sphere is shown to be about 400 times brighter than the shadow cast upon the black paper, yet both are distinctly visible at the same time. If the sphere is lighted by a frosted tungsten lamp the ratio of the

brightness of the lamp to the brightness of the brightest point on the sphere is about 1500 but the ratio of the brightness of the source to the brightness of the shadow is some 6,000,000. This gives some conception of the possibilities of the strain and fatigue of the eye when using our modern illuminants with their high intrinsic brilliancy. By comparison with the eye a photographic plate that shows a range of gradation of 250 to 1 represents practically the greatest range that can be realized. In pigments and printing inks the blackest black still reflects about 10 per cent of the light and the whitest white only about 90 per cent, so that standard value scale has a range of nine values from black to white each differing by about 10 per cent. This shows the limitation of any process in attempting to represent true conditions found in nature.

The typography of the book is good, the printing large and clear, the illustrations well chosen, and the language not too technical for the general reader. We heartily commend the book to anyone interested in the subject discust.

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AN INTRODUCTION TO HISTORICAL GEOLOGY: WILLIAM J. MILLER, Professor of Geology, Smith College. D. Van Nostrand Company, New York, 1916. XVI+399 pp., 238 figures. Price, \$2.00.

This is perhaps the first text-book to deal with historical geology alone instead of combining it with dynamical and structural geology as is usually done. Each period of the earth's history from the Cambrian to the Quaternary is discust and the important changes in the evolution of land masses and organisms are pointed out.

The first two chapters contain a discussion of the general principles of historical geology, including the significance of fossils and the methods of correlation of rock formations. As a basis for the discussion of the life forms of the various periods the classification of animals and plants is given, with simple descriptions of the main groups. This is a valuable feature of the book for students who have not had botany or zoology.

One chapter is devoted to each geological period, in which is given the origin of the name of the period, its subdivisions, the distribution and character of the rocks, the physical history or changes in land and sea areas, foreign occurrences, climate, economic pro-

ducts, and life. In this way the development of the North American continent is traced and the evolution of animal and plant life from the Cambrian period to the present is presented. After describing the various periods of the Paleozoic and Mesozoic excellent summaries of these eras are given in which the chief events are briefly sketched. Another valuable feature of the book is the tabular summaries of Paleozoic and Mesozoic organisms, so that one may see at a glance the principal groups of plants and animals which characterize each period.

The illustrations are many and good, and include numerous paleogeographic maps showing North America as it was during various geological periods. This volume might well serve as a text-book "dealing with the historical portion of a one-year course in general geology" as stated by the author in the preface. An elementary knowledge of dynamical and structural geology is, however, presupposed. This treatment of the historical portion separately is an interesting departure and may well meet the needs of those who wish to present that phase of the subject.

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A LABORATORY AND CLASS-ROOM GUIDE TO QUALITATIVE CHEMICAL ANALYSIS: GEORGE F. WHITE, Assistant Professor of Chemistry in Clark College, Instructor in Clark University. V+171 pp. D. Van Nostrand Co., N. Y., 1916. Price, \$1.25.

This little volume is "offered as a working manual which presents the essentials of both theory and practice but which also suggests the possibilities for more extended study and experimentation."

The most striking feature of the book is the surprising amount of theory condensed into the first 23 pages. Under the heading, "Theories of Aqueous Solutions" are to be found:—the Gas Laws, Avogadro's Hypothesis, Density and Molecular Weight, Osmotic Pressure, the Ionization Theory, Valence, Reaction Velocity, the Law of Mass Action, Common Ion Effect, Solubility-Product Principle, Hydrolysis, and even the Electron Theory. The statements are clear and exact, but in the opinion of the reviewer such a book would require to be used with great care by teachers generally; for even more advanced students of Physical Chemistry do not readily comprehend and apply these principles. Where so much theory is

presented so concisely the tendency to substitute mere memory for rational understanding would seem to present a real difficulty.

The manual proper contains the brief statements of the typical reactions of the common elements and ions. The directions are clear and the procedures described are practical and modern. In the use of Physical Chemistry the author is consistent thruout the book, reactions usually appearing in both the molecular and the ionic forms, while oxidation and reduction are properly treated as electronic changes.

Mechanically, the book is attractive and surprisingly well made. The English is also usually excellent, but minor defects appear such as the occasional mixing of indicative and imperative moods in some of the directions.

The manual will please those teachers who want a small book full of physico-chemical theory together with the usual reactions and procedures of Qualitative Analysis, and it will doubtless find extended use.

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THE SCIENCE OF MUSICAL SOUNDS: D. C. MILLER, Professor of Physics, Case School of Applied Science. The Macmillan Co., 1916. VIII+286 pp. Price, \$2.50.

The book presents, substantially as delivered, a course of eight experimental lectures delivered by Professor Miller at the Lowell Institute during January and February, 1914. The lectures were intended for a general audience consequently there is considerable elementary matter introduced consistent with a clear development of the subject and leading logically up to the most recent developments under discussion. Professor Miller has happily met the difficulty of presenting in book form a series of experimental lectures by a generous use of drawings, diagrams, and excellent photographs of apparatus, sound records, instruments, etc.

The first two lectures are devoted to a development of the ideas of wave motion, vibrations, sounds, and tones. The third lecture reviews many of the various methods of recording and photographing sound waves. A large part of the chapter is devoted with much justification to the author's own device, the phonodeik, an instrument for recording the vibrations of sounds. The principle involved in the construction of the phonodeik is not new but in the

hands of Professor Miller it has been used to develop an instrument which surpasses all others of a similar character. The phonodeik consists essentially of a glass disc for receiving sound from a horn. A small staff with a small mirror attached to it, fixed in jeweled bearings, is attached by means of a silk fiber to the thin glass disc in such a manner that when the disc is caused to vibrate to a sound wave a beam of light reflected from the mirror follows the amplitude of vibration of the sound wave. By the use of a rotating mirror the vibrations may be cast upon a screen giving a visual demonstration of the vibrations in the sound waves.

The fourth lecture is devoted to an analysis and synthesis of harmonic curves and the fifth to the influence of diaphragms and horns on sound waves and the interpretation of sound analyses. The chapter is an important as well as interesting one. Many of the results are directly applicable to the scientific construction of the modern phonograph, especially those dealing with the influence of vibrations of diaphragms and horns. The sixth chapter deals with tone qualities of musical instruments and is full of interesting material. The subject matter of the seventh and eighth chapters is concerned with characteristics of vowels and with synthetic vowels and words respectively. These are highly important subjects and Professor Miller's contributions in these fields are by no means small. The work is concluded with a valuable bibliography of a hundred or more valuable references.

The book is a valuable contribution to the study of sound and is especially valuable in its relation to the physical foundations of music. It is stimulating to the investigator in this field because it contains the latest developments in the subject and must prove to be fascinating to the general scientific reader.

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SOCIALISM AS THE SOCIOLOGICAL IDEAL: FLOYD J. MELVIN.
Sturgis and Walton Company, New York, 1915. V+209 pp.
Price, \$1.25.

Like the volumes by Lewis, Sellars, and Kelly, not to mention other recent publications by socialists, this work is an index of a rapidly widening trend in socialistic philosophy toward making socialism closely coterminous with the ideals for society of scientific sociology. The author regards socialism as economic only in placing

emphasis on the necessity of controlling the "material" as the basis or means of reducing it to its place of subserviency in a properly constituted society where the larger life for all is for the first time made possible.

In the first three chapters Dr. Melvin considers the nature of socialism and seeks to define it. "Sociologically considered socialism is that form of social organization which tends to extend the field of social control to all matters directly affecting society as a whole." (p. 7.) It is "the social system which seeks by means of the social control of heredity and environment to direct the further progress of civilization in accordance with the ideals arising thru social self-consciousness." (p. 40.) Such a system demands as its characteristics (1) an "adequate organization," (2) "clearly perceived social purposes or ideals," (3) "means commensurate with its purposes" which would enable it to replace the present method of industrial competition by "intelligent decision," and (4) complete democracy, or government by the people. (pp. 48-51.)

Chapters 4 and 5 consist of an exposition of the "spiritual" and "material" forces producing socialism. The first are regard for justice, elimination of chance, and ethical and esthetic ideals. Broadly speaking, these produce humanitarianism, applied Christianity, or full social-self-consciousness, all synonyms with socialism. (Chap. 4.) The moral forces producing socialism are embraced within the meaning of cooperation in its common sense. The capitalistic system intrinsically works toward a co-operative stage because its characteristic method, competition, is too destructive. This is seen in the appearance of trusts and labor unions. The interests of all demand that society as a universal cooperating organization shall control thru its government rather than be controlled by either of them.

Chapters 6 and 7 are especially interesting and often illuminating, dealing as they do with the "means" (Chap. 6) and "method" (Chap. 7) of social control. Socialism is defined anew as the "apotheosis of public education." Education is one of the greatest agencies of rendering the masses intelligent so that they may effectively decide upon plans for the regulation of public matters. The scientist, philosopher, and scholar would, if the proper ideal of socialism were realized, be placed among the real leaders because ideas rather than dollars would have the deciding power. Evolution is the other and the most important method. By this the author includes both positive and negative eugenics. Alone under socialism could a compulsory motive for race improvement be guaranteed, mating individuals.

The last two chapters add little to the content of the volume. In general the author sustains his undertaking in this work. The book is written in a clear, vigorous style, and the thought is compact and impressive. At times the organization is not clear, compelling the reader to search for connections. There is an error in the seeming position that the state is broader than society (p. 4). Also the author probably underrates the force of competition between individuals in society outside the economic aspect. The power of popular rule alone to unify society is overrated (pp. 41-2). The author devotes less attention to the need of educating the social mind than is demanded.

Dr. Melvin's volume deserves study because it offers a better approximation to the logical implications of socialism than has hitherto appeared.

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THE NATURE OF MATTER AND ELECTRICITY; An outline of modern views: DANIEL F. COMSTOCK, Engineer and Associate Professor of Theoretical Physics in Massachusetts Institute of Technology, and LEONARD T. TROLAND, Instructor in Harvard University. D. Van Nostrand Company, New York, 1917. XXII+203 pp. Price \$2.00 net.

This book on The Nature of Matter and Electricity should be received with enthusiasm by all those interested in general physical science, who probably have not had the time or opportunity carefully to follow the developments along the many lines of work which the book covers, and even the pure physicist may welcome it as a popular and elementary, but no less authoritative, treatment of the subject as a whole. The arrangement of the book is somewhat unique. It consists of two parts "the first giving a rapid survey of the entire subject, outlining the fundamental conceptions and emphasizing their most significant applications only, while the second retraces the same general field in a slower and less connected way, in order to give details *omitted* in the more cursory treatment."

Part I occupies one fourth of the book and is the work of the senior author. The titles of the eleven chapters indicate the scope, namely: Introduction, The Ultimate Realities, Atoms and their Behavior, The Nature of Heat and Allied Phenomena, The Electron and Its Behavior, Electrons, Chemical Action and Light, Electrons

and Magnetism, Radio-activity, The Structure of the Atom, Recent Discoveries Concerning Atomic Structure and Radiation, and Atoms and Life. These points in Part I that are more fully developed in Part II are indicated by full cross references to a "section" in Part II. Each section has in conclusion a number of specific references to original sources where the subject is still further elaborated. A good many of these references are to Nernst's "Theoretical Chemistry," Campbell's "Modern Electrical Theory," and Rutherford's "Radio-active Substances and Their Radiations."

The general style of the book is explanatory, and mathematical proofs are entirely absent but the statements are not dogmatic, are frequently much qualified, and in case of doubt both sides of the theories are given. There are a number of Plates and Figures, some interesting ones being hypothetical molecular or atomic structure as seen thru an *imaginary microscope* of enormous power-

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PHYSICAL LABORATORY EXPERIMENTS FOR ENGINEERING STUDENTS: SAMUEL SHELDON, Professor of Physics and Electrical Engineering, and ERICH HAUSMANN, Associate Professor of Physics and Electrical Engineering, Polytechnic Institute of Brooklyn. Part I., Mechanics, Sound, Heat, and Light. D. Van Nostrand Co., New York, 1917. VI+134 pp. Price, \$1.25.

This book is designed for sophomore engineers who have had good high-school training in Physics and are familiar with the calculus. The explanations of the experiments and the description of the apparatus is good both in what is said and in what is unsaid. Each experiment is designed for a three-hour period but it would seem to the reviewer that there was considerable variation in the length of time required, especially in calculating the results. For the class of students for whom the book is designed the reviewer is heartily in accord with the principle of "using apparatus of engineering design . . . so that the student may rely upon getting the same results under the same conditions . . . and gain confidence in the apparatus, confidence in the theory, and confidence in himself." In elementary courses it is probably better for pedagogical reasons to have simple apparatus where the essential principle is not obscured by the refinements necessary to accuracy, but for more mature and

better trained students, especially in engineering, the point of view should be that each assignment is an investigation in which the student expects to get reliable data for later practical use, and this requires refined, somewhat complicated, and usually expensive apparatus.

There are thirty experiments in the book, 12 on measurements and mechanics, 8 in heat, 1 in sound, and 9 in light. It is rather hard to judge the proper content of a particular course unless one knows the whole course of training which the student is to receive, so we merely suggest that an experiment or two involving very accurate weighing might be desirable.

The general outline of Object, Theory, Apparatus, Procedure, and Conclusions is followed for each experiment and this is good. We think that with engineers a little more specific attention to percentage accuracy might be required.

The typographical work is attractive, and the illustrations are a judicious combination of diagrams, drawings, and photographs.

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A CRITIQUE OF THE THEORY OF EVOLUTION: THOMAS HUNT MORGAN, Professor of Experimental Zoology in Columbia University. Princeton University Press, Princeton, October, 1916. X+197 pp. Illustrated with 95 figures and plates. Price, \$1.50 net.

A theory of evolution based upon the mere success of lining up or ordering a series of structures from the simple to the complex, as for example in comparative anatomy, embryology, or paleontology, Professor Morgan calls "circumstantial evidence for organic evolution," from which nothing can be known about the order or manner in which the individual members appeared.

In five years of experimentation, Professor Morgan produced over a hundred and twenty-five new types of the wild fruit fly *Drosophila* that breed true. The mutations involve body size, length of wing, body pigmentation, eye color, etc., each mutation affording a basis for a definite ordering of types. The significant thing, Professor Morgan points out, is that the types arose suddenly and independently. These results have led him to reinterpret the meaning of the word evolution as the occurrence of variations and their transmission, and to dispute the evidence on which the older theory

of evolution was based. He believes the adequate theory must cover the natural causes of variation, the kinds of variation that are hereditary, and how they are transmitted.

Professor Morgan gives ample experimental data to show that evolution is not a ferocious struggle between the individuals of a species resulting in the survival of the fittest and annihilation of the less fit; that it is not a process in which the individual is the unit, but a quiet process of sorting out factors in the germ plasm. Advantageous characters survive by incorporating themselves into the germ plasm of the race. Mendel's law accounts for the origin of the characters, the kinds of variations, and the modes of inheritance of these variations.

Professor Morgan gives the various evidences showing that the mechanism of heredity is the chromosome, proving this fact specifically in his study of the *Drosophila*. By means of this mechanism those characters or mutations that are beneficial are incorporated into the race so that such characters or mutations preponderate in the individuals of the race. This is the true meaning of natural selection and is superior to Darwin's, because we are better informed than he was concerning the mechanism of heredity.

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FIRST LESSONS IN AMERICAN HISTORY: S. E. FORMAN, Author of
A History of the United States, Advanced American History,
Advanced Civics, etc. The Century Company, New York City,
1916. More than 250 illustrations. 343 pp. Price, \$.65.

A review of an elementary book on American history may seem to be out of place in such a publication as the *Quarterly Journal*, but the little volume before me so well illustrates many improvements in educational thought and practise of recent times that I yield to the impulse to give it space.

The very mechanical make-up of the book is one of its suggestive features and offers a striking contrast to the books placed in the hands of children only a short generation ago. It is attractively and strongly bound, the paper is of good quality, and the type large and clear. It is profusely illustrated with maps, portraits, battle scenes, and pictures of industrial and historic scenes of various kinds, thus attracting the eye and adding one more natural appeal for attention on the part of the learner. How delighted the old Moravian pioneer in education, Comenius, would have been could

such a book have been put into his hands back there in the seventeenth century! In textbook making it is beyond the wildest flight of even his heretical imagination.

And the content is equally suited to the young learner. Could Herbart have lived to see such a successful effort for arousing the interest of the child in one of his favorite subjects, methinks he would have died happy. And could Pestalozzi and Froebel have looked forward to such an evidence of knowledge of child nature as here presented, and to such an intelligent application of the same to the work of the school, they would have realized more fully than they did that they had not lived in vain.

The book as a whole—content, arrangement, form, illustrations, method—brings forcibly to one's mind the fact that Rousseau's fundamental contention that education should be based on the child's instincts and capacities is being realized in every-day school practice, at least in the text-books we put into his hands. It but remains for the teachers to do their work as well. And what is said here of this little text in history for the young child can be said in greater or less degree of all of our text-books all along the line from the elementary school to and including the college and the university. Some of them, as this, are excellent in every sense of the word and many others leave little to be desired.

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THE AMERICAN CITY: HENRY C. WRIGHT, First Deputy Commissioner, Department of Public Charities, New York City. A. C. McClurg & Company, Chicago, 1916. National Social Science Series—Frank L. McVey, Editor. VIII+175 pp. Price, 50c.

Before a book can be fairly reviewed it is essential that the author's purpose in writing the book be kept clearly in view. Sometimes this purpose is not stated with precision and is ascertainable only from a perusal of his work. In this instance, however, Dr. Wright, in a brief preface, states the object of his labor to be to present "a bird's-eye view of the city, a broad outline of the functions performed by people grouped together into a city; the things they find it necessary to do that are not done by a like number of people scattered through a country district."

Dr. Wright is First Deputy Commissioner of the Department of Public Charities of New York City. From his official position

the casual observer would infer that the point of view taken is not wholly that of the doctrinaire. Upon reading the volume, this impression is fully confirmed. The book is singularly free from theorizing, and there is little effort made to offer solutions for the numerous problems that have arisen in connection with the rapid growth and the complex social conditions of the American city.

In the first chapter the author briefly discusses early cities and the causes and conditions responsible for the formation and the location of urban communities. Fourteen of the one hundred seventy-five pages are devoted to this historical explanation. The author then hastens to the real purpose before him, namely, to lay before his readers a concise description of an American city as a living, growing, active governmental organism, followed by a statement of some of the grave problems, social and economic, that have arisen within our cities.

The chapter describing the various forms of city government is especially valuable to the reader who wishes to be informed of the general outlines of the forms of municipal government, with illustrations of each type. Especially interesting is the discussion of the practical operation of the form of city government most directly under the control of the state legislature and its comparison with cities governed under the so called "Home Rule Charter." Speaking to this point the author states, as his conclusion, that the city of Boston, "under greater legislative control than any other American City," has not suffered because of this fact "for it is today one of the best governed cities in the country."

The author concludes that, "where the commission form has been in force marked improvement has been shown in the cities' financial affairs; administration of the departments has been more efficient; a better class of men has been attracted to the municipal service; and the moral tone has greatly improved." For the student who wishes a concise description of the different forms of city government, it is difficult to suggest any other source within the same compass that would more fully meet such a need.

In concluding the chapter on the form of city government the author says, "no form will relieve the citizens of responsibility. The success of any form is primarily dependent upon the active interest of the citizens—with constant watchfulness on the part of the citizen almost any form can be made successful." The truth of these observations has long been acknowledged by publicists, but to impress successfully the duty of vigilance upon the voter and the citizen has been difficult in the extreme. It is unquestionably true that while the form of government, especially if complex, may multiply

the opportunities for corruption, yet no form can be devised under our theory of government in which constant watchfulness on the part of the citizenship of the city is not essential to its continued purity. This is forcefully expressed by Dr. Wright.

In the chapter on the finances of cities, pursuant to the purpose expressed in his preface, the author explains the methods of raising revenues to meet municipal expenditures, stating in explanatory detail the different sources of income. He shows by statistics from the Federal Census that the per capita cost of government tends to increase with the growth of the population. In the larger cities the per capita cost for all general departmental expenditures is said to be \$21.24, while in the smaller it is but \$11.09. The department which seems to require the most rapid increase in expenditure with the growth of the population is the judiciary and the police. The author concludes that the statistics presented confirm the current belief that the "massing of people together creates artificial conditions which are expensive to overcome."

The chapter on property, life, and health, explains in considerable detail the methods adopted in different cities to protect citizens in their enjoyment of these things. In comparing the efficiency of American methods of fire protection with those of foreign countries, we are reminded of the startling fact that the average fire loss in American cities is about two dollars fifty-five cents per capita of population, while in German cities it is only twenty cents per capita. The author then points out the means adopted to reduce the fire hazard, such as signal systems, fire companies, building regulations and the like.

The chapter on education and instruction is largely descriptive of the different methods adopted by different cities, with a discussion of the educational value of young men's and young women's Christian Associations, libraries, art galleries and museums, and public lectures.

The chapter on municipal undertakings is in fact tho not in form largely statistical. We are referred to specific undertakings by individual cities, and figures are given tending to show the relative cost to the citizens of the service when rendered by private enterprise and by the city. I think it may be fairly stated that the instances given tend to show that municipal undertakings within recent years have been on the whole rather successful. An interesting table of municipal electric lighting plants is included, being compiled from the annual reports of seventeen cities, ranging in population from five hundred to over three hundred thousand.

The last chapter in this little volume is suggestively entitled

"The Effect of the City Upon the Citizen." Here the author departs somewhat from the method that has characterized the other portions of his book and undertakes to express some conclusions to which his studies have led him. We find such striking statements as the following, "The city seems to be, in a large degree, a consumer rather than a producer of initiative and fertility of thought—the city furnishes great opportunities to the adult who comes to it with a live imagination and initiative; the child mind it tends to stifle and dwarf—this freeing of the child is one of the most pressing problems of the modern city." Speaking of the necessity of play grounds and parks, the author says that "people confined to brick walls and pavements must have an occasion of relief afforded by open spaces." The book is well written, its facts are logically grouped, and its conclusions are conservative.

Unfortunately the author has omitted all mention of the work of municipal reference bureaus, like those of Baltimore and Milwaukee, supported by the public, or of municipal research societies in part, at least, supported by the public, which have for their object the furnishing of information and assistance to municipal officers. These agencies for better government deserve attention in a book on the American city, as they tend to supply that lack of expert, scientific knowledge, which has been one of the contributing causes of inefficiency in municipal government.

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OLD TESTAMENT HISTORY: ISMAR J. PERITZ. Abingdon Press, 1916. Second edition. Price, \$1.50.

The fact that Professor Peritz's "Old Testament History" has reached a second impression in one year attests its acceptability. The author combines scholarly knowledge with power to adapt his material to the student's needs. The name of the author is warrant of painstaking and accuracy. A few details as to treatment compel attention.

The student is introduced to the subject in an admirable way. After discussing reasons for the study, Peritz divides the field into three grand divisions: the Formative Period—to the establishing of the Kingdom; the Prophetic Period—the national period under the guidance and influence of the great preachers and reformers; the Priestly Period—when Ecclesiasticism was dominant. At last the lay student has the historic divisions of the Old Testament books:

Law, Prophets, and the "Writings" (Hagiographa). There is history in the books, but it is a historical archipelago: the books are not intended primarily as histories. This idea when once fully understood relieves us of a world of embarrassment as self-appointed apologetes. The correct view is of a series of great prophetic documents whose chief aim is religious instruction. "They were written for a moral and religious purpose, to show how Jehovah had guided and helped the nation, and by the use of the past to warn the people of sin and to teach them the right way." Equally good is the analysis of the historic sources, and their treatment as an orderly attempt to secure for the Old Testament a trustworthy historic basis—so-called discrepancies find light in a most helpful, satisfying way.

The study proper begins with a study of the geography of the land. One by one the cardinal features of that wonderful land are taken up and after thoro discussion are finally blended together in "the general character of Palestine."

The interpretation of the early chapters of Genesis is illuminating, and one sees Hebrew life carried on by the sweep of history. The evolution of the Hebrew legal code is so formulated as to make these portions alive, and they reflect the growing, developing life of the people. The discussion of the Solomonic period is a masterly summary. As we enter the later periods we are helped by chronological tables of the kings, which statements serve as sheet-anchors for the text which in each case follows. The prophets, too, who stand out as flaming evangels, are treated in a manner that reminds one of Cornill in his little classic on the Prophets, and the analyses of their books are just what the student needs to start him in their intelligent reading. A notable instance of these literary digressions is the summary of the book of Job. We can add here only a mention of the fine summary of Judaism, Scribism, Synagogue, parties, ethical standards, and the Messianic hope. The treatment of each period is followed by a group of questions which sum up and afford even the lone reader a means for profitable study. The maps are numerous, tho one could wish that colored maps, and some such orographic map as the colotype map of the Palestine Exploration Fund might have been used to emphasize the geography thruout the volume.

The book is one of the very finest texts before the college public and is well worthy of a place in the curriculum.

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University Notes

The University and the Legislature North Dakota has adopted the budget system of appropriations, and under the plan provided for by the session of 1915 the Budget Commission began its work. This Commission made an examination of the requests of the different institutions in the state and visited each of them before making recommendations. The recommendations for the University as presented by the Board of Regents were practically adopted by the Budget Commission in so far as they related to maintenance items. The Commission raised the request for the Chemistry Building to \$90,000 and for equipment of that building to \$20,000. At the time of adjournment of the legislature both of these items were left in the bill, But under the necessity of reducing the amount of the appropriations, the Governor struck out the amount for equipment and also for the completion of the third story of Macnie Hall. This left the appropriations for the general purposes of the University as follows:

For maintenance -----	\$81,000.
Main unit of Chemistry Building ---	90,000.
General Library -----	6,000.
Grounds maintenance -----	2,000.
General building repairs -----	5,000.
Extension work -----	8,000.
Residence Hall furnishings -----	5,000.
Completion of lighting system -----	2,500.
Engineering equipment -----	7,000.
University Museum -----	1,000.
Summer Session -----	4,000.
Replacing tunnels -----	6,500.
Trusses for Power House roof -----	2,500.
Purchase of Books -----	5,000.

The result of these appropriations is to give the University additional income much needed, and will allow for a few additions to the faculty and some increases in salary.

The University and Nat'l Associations The modern university comes into close contact with many interests and many movements. These relations grow out of the work which it is doing. Thus the different departments and colleges come in touch with work and men in various special fields in the United States. These are or-

ganized into associations national in character, and the university soon finds it necessary to have representation at their meetings. Further than this, the university as one of the socializing factors of the nation comes in contact with various interests all the way from educational questions to questions of national preparedness.

The University of North Dakota is a member of a number of these national associations. Thus there is the National Education Association, the National Association of State Universities, the North Central Association of Colleges and Secondary Schools, the American Council for the Advancement of Medical Education, the Association of American Law Schools, the National Religious Educational Association, the Association of Collegiate Alumnae, the honorary scholastic society of Phi Beta Kappa, and the Society for the Promotion of Engineering Education. Failure to accept the responsibility of such associations reduces the university to a minor position and fails to secure for it the recognition abroad which it has earned. The consequence is that relationships of this kind require a great deal of correspondence and frequent attendance upon meetings for the conduct of the business of the associations. The fact that North Dakota is not so well known thruout the country as it is at home makes the need for such representation all the more paramount. The calls that are made upon the President of the University to attend these meetings, to take part in their programs, to accept a share in the responsibility for the government of these associations, increase with the growth of the University, and it is essential that this responsibility be accepted in view of the greater richness of life which it brings to the University as a consequence of it. The burden and the responsibility of such attendance fall largely upon the president of the institution as its representative and necessitates his absence to a considerable degree during the course of the year. Without doubt, however, the results which come from these relationships are of great value, as can be seen in the increasing appreciation of the University and its admission to national organizations whose membership is extended only to those institutions which maintain high standards.

The North Central Association Meeting The North Central Association of Colleges and Secondary Schools met in St. Louis on March 22, 23, and 24. This Association consists of 1600 colleges and secondary schools in nineteen different states. It prepares the list of secondary schools that are accredited to it every year, and thus

determines the right of graduates to admission to colleges and universities in its territory.

The Association carries on its work under three commissions: the Commission on Higher Education, the Commission on Secondary Schools, and the Commission on Units and Courses of Instruction. President McVey is a member of the Commission on Higher Education as well as Vice-President of the Association. The next meeting will be held in Chicago in March, 1918.

University Men at Educational Gatherings During the winter months, especially during the period of the Christmas holidays, several of the national educational and scientific societies have held their meetings, in which many of the members of the University faculty participated. Among those attending were the following: Dr. H. R. Brush, head of the Department of Romance Languages, appeared on the program of the western section of the Modern Language Association of America, at Chicago. Dr. G. P. Jackson, of the German Department, was also in attendance at the same meeting. Dean H. E. French, of the School of Medicine, met with the Council on education of the American Medical Association and the Association of American Medical Colleges, at Chicago. Dr. J. M. Gillette, head of the Department of Sociology, read a paper before the American Sociological Society in Columbus, Ohio, dealing with the question of the teaching of rural sociology. He also attended some of the sessions of the American Economic Society in the same city, as did also Dr. H. B. Whaling, Director of the Department of Economics. Dean Joseph Kennedy, of the School of Education, was present at the meetings of the Department of Superintendents and of the Association of College Teachers of Education of the National Education Association in Kansas City, and participated in the discussions. Dean V. P. Squires, of the College of Arts, attended the meetings of the National Religious Education Association in Boston, where he presided as chairman of the public school section. Dr. A. H. Taylor, head of the Department of Physics, delivered a lecture on the subject of radio communication before the Chicago Academy of Science, and discuss the same subject in an address at Northwestern University. Dr. E. B. Stephenson, also of the Physics Department, spent the holidays in making a brief visit to several of the universities of the middle West. Dean G. F. Wells, of the College of Law, was present at the meeting of the Association of American Law Schools, in Chicago, and participated in the discussions.

Manitoba Exchange Lectureship The exchange lectureship maintained with the University of Manitoba for several years is still in successful operation. Manitoba's representatives this year were Professor Arthur A. Stoughton of the Department of Architecture and Professor S. M. Clark of the Department of Classical Languages and Literatures.

Professor Stoughton visited the University in the early days of November, speaking in the afternoon of Friday, November 3rd, on "The Mission of Architecture." The University of North Dakota has no department of architecture and Professor Stoughton's address proved highly interesting and instructive. At the regular weekly Convocation on the morning of Saturday, November 4th, Professor Stoughton spoke on "Art in Life." This address was very pleasing and has been secured for publication in this periodical. It will appear in the July number.

Professor Clark came in March, speaking on the afternoon of Friday, March 3rd, on "The Influence of Sea Power in Two Crises of Roman History." The speaker traced in a masterly manner the part played by the Roman Fleet in two celebrated wars, showing conclusively that the fleet was the deciding factor. It was not difficult to read between the lines and make definite applications to the present world-wide war. At Convocation the next morning Dr. Clark spoke on "The Antigone of Sophocles" in which the Greek dramatist's masterpiece was sympathetically portrayed, its intense humanity being clearly brought out.

The representatives of the University of North Dakota at the northern institution were Dr. H. R. Brush of the Department of Romance Languages and Literatures and Dr. H. E. French, Dean of the School of Medicine. Dr. Brush made the visit in the early autumn, speaking at the Convocation gathering on "The Mission of France" and before an evening audience on "The Message of Cervantes." The visit of Dr. French came a little later—in March. He spoke at the regular Convocation on "Three Ingredients of the World's Medicine" and in the evening before a joint meeting of the city Science Club and the University faculty on "The Production of Hydrochloric Acid in the Stomach." This address was repeated the next day before the student body.

This exchange lectureship has lost none of the interest of former years, and as the number of visitors increases with the passage of time, a closer and larger and warmer acquaintance is developing between the two institutions.

The University and Preparedness In view of the conditions of the world war which is so seriously involving the United States and of the necessity of mobilizing the resources of the Country for our national defense, a statement may be made concerning the work being done at the University. Military training has not been given since the Spanish-American war but the matter of re-establishing it is under discussion in University circles. Last June a bill was passed by Congress establishing what is called the Reserve Officers' Training Corps in educational institutions, an essential condition being that all freshmen and sophomores in the institution adopting the system should be required to take training, but the chief purpose being to train reserve officers who should be called on for active service only in time of national peril. The bill provides that the government shall provide arms, ammunition, equipment, and uniforms, but as yet no appropriation has been made to cover these items.

The University Council, at a recent meeting, passed a resolution asking the Board of Regents to adopt the system to go into effect at the beginning of next year's work or as soon thereafter as the Government is able to co-operate.

There are three other lines of preparedness work which are being carried out at the University or by University men. As a sub-committee of the Naval Consulting Board and Directors for the State of North Dakota, a committee consisting of Professor C. H. Crouch, chairman, T. R. Atkinson, formerly State Engineer, President E. F. Ladd of the Agricultural College, Professor J. F. Stevens, and Dean E. J. Babcock made an industrial survey of the state last summer and fall. The survey consisted primarily of taking an inventory of the organization, facilities, and equipment of all the manufacturing concerns in the state such as flour mills, coal mines, brick plants, creameries, bakeries, machine shops, printing establishments, etc. Practically every concern furnished the information requested and this has all been sent in to Washington.

Another line of work is that under the National Research Council. The sub-committee at the University consists of Professor A. H. Taylor, chairman; Dean E. J. Babcock, Professors G. A. Abbott, C. E. King, A. G. Leonard, and J. M. Gillette. Their work consists in reporting to the central committee a census of the local work that is related to the scientific and economic development of the country, and to arrange for co-operation and co-ordination of the local work with that of the other institutions of the country.

The University is also represented in the Intercollegiate Intelligence Bureau, a voluntary organization for the purpose of collect-

ing and classifying information concerning the graduates and undergraduates of each institution who have had special training that would make them available for special work in time of war. Dr. E. B. Stephenson is the local representative.

Founder's Day The observance of Founder's Day at the University has come to be regarded as one of the red-letter events of the University year. It always brings back a goodly number of the alumni; friends gather from near and far, and in many ways the spirit and mission of the institution are made clear to all. The undergraduates see the institution from an added point of view and begin to appreciate its deeper significance. For all old bonds of allegiance are strengthened and new ties formed. While the ends in view this year were the same as in former years the celebration was in one particular feature somewhat different from any that had preceded. This was caused by the exigency of the times—the tragedy of the great world war and its near approach to our own firesides.

The celebration took place, as usual, on February 22nd and consisted of several interesting features, the most striking of which was the morning meeting in the Gymnasium. For this a patriotic program had been arranged. Here were given music by the band, patriotic songs by the glee clubs and audience, and songs by the freshman class, the winners of a Carney Song Contest of the evening before. But the central feature of this program was a series of addresses by four United States citizens of foreign birth on the one topic, "The Privilege of Being an American." The speakers were Reverend H. T. Thorgrimsen, Grand Forks, North Dakota, a native of Iceland; Professor Paolo Conte, Grand Forks, North Dakota, born and raised in Italy; Reverend F. W. W. Pugh, Larimore, North Dakota, an Englishman; and Mr. Richard E. Wenzel, an Attorney from Rugby, North Dakota, born in Berlin, Germany. The addresses were of high grade, intensely interesting, and at times highly dramatic. The spirit of patriotism ran high and many of us, native to the soil, were given new points of view and bases for added appreciation of our birthright.

In the afternoon the annual clash took place between the basketball teams of the University and the State Agricultural College. This game was preceded by one between teams representing the high schools of the two institutions. Both games were won by the University teams thus adding enthusiasm to the day. In the evening two entertainments were provided for visitors and students alike,

an informal dancing party at the Gymnasium and a presentation by the Sock and Buskin Society, in the Auditorium of Woodworth Hall, of three original one-act plays. All in all, the observance of the day was unique, enjoyable, and profitable—one long to be remembered.

Carney Song Contest

The Carney Song Contest is a contest in singing carried on by the four undergraduate classes of the University of North Dakota. Its object is to cultivate the spirit of song in University life, to encourage the writing of songs, and to strengthen college loyalty. The existence of such a Contest is due to the loyalty of an alumnus of the institution—Mr. E. C. Carney of Williston, North Dakota, who graduated with the class of 1904. Early in the year 1911 Mr. Carney wrote to the University saying that he would like to give evidence of his appreciation of the institution by making an annual gift of \$50 for some worthy University activity and asking for suggestions as to the best way to use the amount. The Carney Song Contest, as an annual event, is the outcome. It is held on the evening preceding Founder's Day celebration, and the winning class appears the next day on the Founder's Day program, rendering some of its songs.

The rules and regulations of the contest are simple:

1. Each class at the time of the Contest shall sing "Alma Mater" and four original songs, two of which shall be of general University interest and two that may refer quite specifically to a particular class. The word "original" refers to the words of the songs; not necessarily to the music.
2. Each class shall select from its own number a choregus who shall have charge of the rehearsals and on the evening of the concert shall lead the singing of the class. This leader shall also serve as chairman of the committee named by the class for selecting its songs.
3. To be eligible to compete for the prize a class must have seventy-five per cent of its members present and taking part.
4. The decision shall be rendered by three judges appointed by the President of the University. They shall base their decision upon the spirit and rendering of the songs with special reference to interpretative power and choral effect.
5. To the class securing first place shall be awarded the prize of \$50 which may be used in any way that the class shall by vote decide.

The contest this year was held on the evening of February 21st.

It is regarded as one of the most successful of the series. The Freshman Class won tho the contest was very close—only four grading points separating the winners from the lowest losers. The judges were Mr. A. J. Stevens, Director of the Fargo College Conservatory of Music, Fargo, North Dakota; Miss Lucile Holliday, Director of Music of the State Agricultural High School, Crookston, Minnesota, and Miss Blanche Leigh, Director of Music in the Public Schools of Grand Forks, North Dakota.

The Carney Song Contest is regarded as very valuable for the University. It is clearly accomplishing its purpose. The frequent rehearsals necessary to make a creditable public appearance tend to draw the students together and the writing and frequent singing of University and class songs tend to cultivate a real college spirit and loyalty. The far-reaching effect of the Contest is little realized until one appreciates the body of song that is thus created to be sung by the present student body, cherished by them as alumni, and passed on as a heritage to future students. The University feels very grateful to Mr. Carney for his helpful co-operation.

An Experiment in Grading The question of marks always receives considerable attention at the mid-year time from both students and faculty. The comparative fairness of marks, or their absolute value as an indication of student ability, is sometimes called in question, and it is frequently maintained in student arguments that the best students do not get the best marks.

To see the way students' rankings of themselves would compare with the instructors' ranking of the students the following experiment was carried out by Dr. E. B. Stephenson at the first meeting of a class the second semester. The instructors' grades were all made out but were not known to the students. The class was one section of 14 students in a 4-hour course in Engineering Physics. Each student was requested to rank each member of the class, including himself, in the order of his comparative ability in Physics, and the results are shown in the table. Four of the fourteen students had changed to another section and are not reported. The average of the rankings was arranged in the order of the least sum of ranks. The instructors' rankings were by two men, the work being divided equally into lecture and quiz work under Dr. Taylor and laboratory work under Dr. Stephenson. Dr. Taylor's grades are based on 15 to 20 marks in daily recitations and the final examination. Dr. Stephenson's grades are based on 24 laboratory reports, several written tests, and a final examination. The two

instructors' grades are averaged for an instructors' average and then the students' and instructors' averages were averaged for a final grand average ranking. In case of a tie the man with the largest number of high ranks was given precedence. At the bottom of the table is given each student's and instructor's average deviation in ranks from the grand average.

Student Names	Ranking of Individual Students										Std. Instructors			Grand Ave.	
	A	B	D	E	F	G	H	I	K	N	Ave.	T	S		Ave.
A	2	2	2	3	1	3	2	1	1	1	1	1	1	1	1
B	3	1	1	2	3	2	3	2	5	2	3	4	3	3	2
C	1	6	5	1	5	4	1	3	2	2	3	2	2	2	2
D	6	3	7	8	10	5	5	5	3	5	5	3	6	4	4
E	4	4	3	5	2	1	4	4	4	4	4	7	4	6	5
F	5	7	13	4	8	8	6	6	6	10	6	6	5	5	5
G	7	8	4	11	9	6	11	7	13	8	7	9	11	9	7
H	11	5	14	14	4	11	7	10	11	11	9	5	8	7	8
I	13	11	10	13	7	7	10	9	10	13	12	8	10	8	9
J	8	14	6	6	11	9	8	11	9	7	8	12	12	13	10
K	10	12	8	7	14	10	9	13	7	12	10	12	7	11	11
L	14	9	11	12	13	13	12	8	14	6	13	10	9	10	12
M	9	10	9	10	6	12	14	12	12	9	11	11	13	12	13
N	12	13	12	9	12	14	13	14	8	14	14	14	14	14	14
Average Deviation															
	1.9	1.9	2.9	2.9	2.6	1.4	1.3	.86	2.1	2.0	.86	1.5	1.5	1.0	0.0

A number of interesting points are shown by the data. If the final grand average is taken as the true ranking, the instructors' rankings were exactly correct for 28% of the students, differed by only one rank or less in 79%, and by two ranks or less in 93%. If we assume the 14 students to be spread uniformly along from 68 to 96, the actual range of grades given, then each rank represents 2%, and therefore the instructors ranked 93% of the students within 4% of their true rank as shown by their grand average. The average deviation from the mean in the table is something of an index of the individual's ability to judge his fellows. Thus student I, who has an average deviation of only .86, ranked the first seven men correctly and also ranked himself correctly as ninth. Student N was almost as good a judge of his fellow students as student A. Students E, I, and N ranked themselves correctly, four ranked themselves too high and three too low. The instructors' average deviation is one rank.

The above data, tho much too limited in scope and of too small number of students to be at all conclusive, is interesting as pointing to the probable fact that the consensus of opinion of students and instructors is practically the same, and that grades probably have a real value in indicating the performance of a student in a particular line.

Athletics

The basketball season of 1916-17 has closed with another state championship for the University. This is the second championship team Coach Gill has developed in his three seasons at the University. Altho the schedule was not so hard as that of some seasons, the team went thru the year with only one defeat—the second game with the Agricultural College—and altogether scored more than twice as many points as its opponents. The schedule of games and the scores are as follows:

January	15	Concordia	-----	18	University	53
January	16	Jamestown College	-----	12	"	61
January	23	Jamestown College	-----	7	"	60
February	2	Concordia College	-----	18	"	38
February	17	Fargo College	-----	18	"	30
February	19	South Dakota State College	---	11	"	45
February	22	Agricultural College	-----	24	"	25
March	3	Agricultural College	-----	29	"	24
March	5	Fargo College	-----	15	"	16

The Gym League in Basketball this year consisted of eight teams that played thru a seven-game schedule, each team playing every other one. The championship was won by the Sigma Chi team with a percentage of .857.

The Girls' Class Teams played thru a tournament that was finally won by the Juniors after playing an extra game to decide a tie with the Freshmen. The winning team was awarded sweaters and special letters by the Athletic Board.

In high school circles basketball is probably the leading form of athletics and would seem to be particularly suitable for the long winter season. The state has been divided into four quarters, or districts, and within each district an elimination tournament is played by the various high schools. The four winners of the district tournaments then meet on alternate years at the University and the Agricultural College to decide the state championship. This year the meet was at the University. In the preliminaries Valley City from the southeast district played Kenmare from the northwest and won by a score of 36 to 21, and Michigan from the northeast played Dickinson from the southwest and won by a score of 27 to 16. In the final game, which was frequently tied and closely contested thruout, Michigan won the state championship by 18 to 16. The teams were supported by a large and enthusiastic crowd of rooters, they played speedy but clean ball, and were very enthusiastic about their treatment at the University.

**The Glee Club
Trip**

The Mens' Glee Club has been such a superior organization, comparing favorably with similar choruses, that a more extended trip than usual was planned for this year. From Grand Forks to the Pacific Coast several requests have come for concerts. After negotiations were well under way it was found that in order to make such an extensive trip more time would be required than seemed advisable during the spring period. Tho the coast trip was not abandoned until January a trip thru the state was very quickly arranged. As usual, more requests came than the club was able to grant. Some cities look forward to the coming of the University of North Dakota Men's Glee Club as an annual event. The Club leaves for Devils Lake Wednesday, April 4, and will visit Rugby, Bottineau, Minot, New Rockford, Carrington, Cooperstown, Valley City, and Hillsboro. Twenty-two men have been selected from the membership of forty singers. An abundance of material has made competition keen. A program of great variety has been prepared including a third part called, "Student Life on the Border." No small contribution of these trips is the general interest aroused in higher education.

Summer Session

The forth-coming Summer Session of the University will follow immediately the completion of the regular year's work, beginning on Monday, June 25th, and continuing for six weeks. It will follow very closely the work of former sessions and thus seek to satisfy the more pressing needs of higher education during the summer months. Emphasis will be thrown upon work in chemistry, English, modern foreign languages, education, home economics, political science, and art. In anticipation of the desires of teachers and prospective teachers, the work is planned very largely from the teacher's point of view. There will also be found round-table conference discussions on live educational topics, a course of high grade evening lectures, and other phases particularly interesting to teachers in the state.

One added feature this year promises to be of particular interest. Professor P. W. Dykema of the University of Wisconsin, who has made a national reputation in the matter of Community Music, has been secured for a week. He will be here during the latter part of the Session and give an entire week to the development of this rather new and highly important line of work.

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Art in Life

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I DESIRE to urge upon your attention the claim of esthetics in connection with science and the matter-of-fact things of life. The material and the technical take our attention to such an extent that we are liable to lose ourselves in detail and minutiae and the specific. We forget the large, the ideal. We are in danger of missing the generalized outlook on life by an exclusive study of the particular. The safeguard against this narrowness of learning and the absorption of the mind in a few departments of knowledge is the possession of the spirit of art by which to bring every isolated area of effort, every specialized function, or separate achievement into vital relation with life as a whole. I am not speaking of art in its restricted sense, meaning drawing or painting, nor any particular art, useful or fine. I am not now making a plea for more art teaching, nor larger museum collections, nor better pictures on our walls, desirable as these all are. Rather do I mean the influence of the esthetic principle,—art in its highest and most general sense,—the putting of every physical operation and every mental process on an ideal plane, so that the results may be effected in a fine and beautiful, instead of in a crass and matter-of-fact, way.

Art is the universal solvent,—the integrator,—the touchstone, transmuting all base metal to gold; the prism, disclosing the rainbow hues of truth, revealing at once the unity of life and its variety. It creates a new attitude of mind toward the separate parts of life, by which they lose their fragmentary character and are brought into true and vital relations with each other and to existence as a whole. Thus are created the breadth of culture, with all that this signifies and the solidarity of the elements of life. No life is properly balanced without the ministry of art. No education is comprehensive that does not implant the love of the beautiful. No culture is com-

* An address delivered at the Convocation of the University of North Dakota, November 4th, 1916, in the Exchange Lectureship with the University of Manitoba.

plete which does not make esthetics a controlling factor. This does not mean learning to draw but being led to recognize charm and grace,—being brought into assimilative contact with beauty, and becoming acquainted with its manifestations in sound and form and color and motion, that in its sensuous expression it may enrich our lives with esthetic pleasure, and in its ideal aspect it may admit us to communion with all that is true and lovely and of good report.

Viollet-le-Duc, the French architect and critic, says: "Art is a fountain of instinctive emotion reaching the soul of man by various channels. Thus, the orator, the poet, the musician, the architect, the sculptor or painter, all alike artists, may each in his own language utter the same sentiment, and to a certain extent, arouse the same emotion in the heart of him who hears or sees. These various forms of art appeal to the senses, and the senses, in different ways, arouse the same series of ideas. For example, the appearance of grief, the accent of grief, and the representation or imitation of grief, create the same sentiment, pity. * * * Every one can readily understand the real object of art by referring to his own experience. For there can be no one who, at least once in his life, whether by the words of a poet or the notes of a musician, the aspect of a monument, a statue, or a picture, has not been thrilled by a peculiar emotion, has not been subdued perhaps by a sympathetic sadness, elated by an unexpected sensation of joy or hope, awed by some new sentiment of grandeur, or filled with gratified pride. * * * The sentiment thus aroused by one of the various expressions of art is our artistic instinct."

The habit of the appreciation of the beautiful should be formed at the earliest possible age that it may become a matter of second nature and as much an automatic process as any other, that the whole course of life and the whole man may be suffused with the ideal, for "art" in the sense in which I am using it is well nigh synonymous with the ideal. This esthetic view of life is suggested by Browning's lines:

"How good is man's life here, the mere living, how fit to employ
All the heart and the soul and the senses, forever in joy."

Hereditly should play its part. The preparation of the child for this fullness of life should continue with its unconscious life by the influence of artistic surroundings and by giving his mind a bent toward viewing all things from the ideal standpoint. This is a process dear to Mother Nature, so that the child is easily susceptible to it. It adds enjoyment and increases the suppleness of the mind and the content of life, giving everything in it a new reference. It

has been said that "the supreme purpose of all instruction should be to reveal Beauty to the opening eyes of childhood; to make the world so lovely that everyone will wish to live the Beautiful Life; to teach children to work for the joy of the working, wisely, and for some lofty purpose, to make work and service mean the same thing at all times and in all places; to point out the largeness of life, with all it has meant from the very beginning of time, to give children the benefit of the Past and the Present so that they may form the Future wisely, which is in their hands; in a word to relate art and industry and education in the child's life so that he shall be indeed the captain of his own soul." Thus it is the bounden duty of parents and society to provide a setting for the life of the child in the home with all its appointments, in the school and the channels thru which the mind is fed, in the outward aspect of the community with all the appeals which it makes to his eager senses, that his outlook upon life may be not commonplace but inspiring and fresh and elevated, in a word,— artistic.

The play of the child is largely based on phases of art in which the esthetic elements of rhythm, balance, grace of movement, the dramatic instinct, and song are ever present. Environment is the background to which the sensitive organism of the child responds chameleon-like. Every influence makes its record; every record is an increment of character; forgotten but indelible influences may well up into heroic decisions at turning points of life; and the character ennobled and sweetened in its formative stage by the influence of the ideal will be a continuing victory over untoward circumstances. What of gentle breeding may not be worked into the fibre of character by the surroundings in which unlovely things are excluded and harmony reigns; and in which, therefore, the mind and body, thus kept free from distraction, acquire poise and self control and so develop beautifully. The person so guarded and fortified is best prepared to meet the shock of life.

Joseph Lee, in his *Play in Education*, expresses the thought in saying: "To many people education by rhythm appears unpractical. The demand of business men is often for boys who can spell and add and have no nonsense in them; the less education beyond that of a machine, and the less fool poetry and aspiration the machine has in it, to get into its bearings and interfere with its smooth action, the better. What is the use of rhythm in business affairs? People who feel and talk in this way always have for some reason, the curious obsession, that they are very practical. But are they really so? Were the Greeks, or the Italians of the Renaissance, less successful

than others in living a life that posterity can value and bequeathing permanent acquisitions to mankind? A soul, it would appear, is a not unimportant part in the human mechanism, even in business affairs. And if a soul were, as is sometimes thought, an encumbrance in business, and if it could be dispensed with like the tonsils or the appendix, would it even then be wise to let it atrophy? Does success in business necessarily mean success in life? The efficient man * * * is he who is efficient in saving his own life, who can effectively translate his soul into action. It makes no difference to you how far you go if you leave your heart behind: in that case you may as well turn back and start again. What counts is not how far you travel but how far you carry your ideal."

The best time to gain this artistic habitude is the age at which you are. If the child has been deprived of his natural rights, the youth or the adult should seek earnestly to repair the loss. Now is the accepted time; now is the day of salvation. Let us be converted and become as little children, that with willing feet we may enter the palace of art and gain a new and fresh vision of life, by looking out of its windows on fair landscapes and serene prospects, restful and soulfilling, in which the mind may wander, gathering flowers from seeds sown in all ages by the lofty and inspiring ones of the earth. To most of us who have grown up the idealism of the child thru which rose-tinted glass he sees life in all its manifold significance and the outer world in all its harmony of form and color, seems so remote and unreal and foolish that our tendency is to treat it as an infantile weakness, to be outgrown and discarded with the dolls and toys, at the earliest possible moment in favor of practical pursuits and the acquirement of information. Fairy stories and poetry and romance and self expression are to be replaced by contact with cold facts and their application. It is strange how few of us realize that idealism is one of the most precious possessions of the mature or the youth or the child, not making one less practical but cushioning the buffets and softening the shocks of the rude world and giving another sense by which to lay hold of the material and the spiritual and transform them both into the fabric of a higher life.

As in childhood, so in the childhood of the race has this more profound and truer philosophy held sway. The ancients are our teachers in the artistic conception of life. This is true among many peoples in primitive states of development but it is specially evident in some of the great periods. The Greeks make a religion of the love of the beautiful, and this desire for esthetic perfection and for complete expression of all the faculties is shown in all their records

and monuments, whether of literature, architecture, sculpture, or drama. In the harmonious development and play of all the physical and mental functions we see the effort artistically to present life in its fullness. In the Gothic age, despite the general misery of the times, in which the people were ground down by serfdom and war, we see in one field, at least,—that of architecture—the highest idealism manifested, ably reenforcing the Church in the period since known as the age of faith. Here religion and art go hand in hand. The one inspires, the other creates the material setting and by the patient and devoted efforts of the whole community the cathedral rises as the embodiment of one of the most stupendous artistic conceptions of man. Architecture and the other arts in this period are intimately linked with the highest and noblest aspirations. Man, stunted on the social side, reaches out on the religious and all the force of his being is expended in glorifying God artistically. In the golden age of the Renaissance “every Italian was a perfect judge of art,” and of Florence of that time it was said that “no other community was so permeated with a love of beauty and so endowed with a capacity to realize it.” It was usual for all educated men to write and sing and play, to dance, and fence, and in many other ways to exhibit grace in suppleness of mind and body. The artists, in whom we see these traits of the many merely carried to specialization, seldom limited themselves to one branch of art, but were expert in many, enriching each by their knowledge and command of the others. Read Benvenuto’s *Memoirs* if you would know the versatility of these men or Vasari’s *Lives of the Painters* to learn how all might do painting, sculpture, architecture, decoration, engineering, goldsmithing, bronze founding, gem-cutting, engraving, embroidering of stuffs and tapestries, sonnet writing, and playing on instruments.

If it would be unwarranted to claim that in all the earlier periods of the world all men, high and low, had the artistic attitude toward life, frequently manifested in activity in the fine arts, it is safe to say that generally the childhood of the world and its early maturity were characterized by the predilection for beauty in things and in the expression of thought and emotion. This spontaneous esthetic sense has produced the epic or saga, or drama, the self-expression in the dance and game, the surroundings of life in the form of artistic buildings and the decorative character of common objects of every kind. From the habitations of the cave dweller, the tombs of the Nile, the Assyrian clay cylinders, the excavations of the Syrian mounds, the Cretan palace ruins, the Axtec caves, and the monuments and records of peoples, Asiatic and European, primi-

tive and civilized, we see the artistic quality of all, and we are astonished by the poetic trend of their thought. The museums are full of objects of common use coming to us from these remote times, besides which our best are frequently tawdry and mechanical.

In modern times this seems all to be changed. This sophisticated age, filled with delight in the new knowledge and science, rich with material resources and furnished with all manner of machine-made products, has dispensed with some of the most precious and fundamental things:—sentiment, art, and leisure for real enjoyment of life. These better things are no longer for daily use, but are luxuries which busy people and the poor are not to use or enjoy. The things of art are now matters of archaeology for the dilettante and the artist—not, as in all former periods, for common use. The result is that materialism has deadened feeling, and this artistic treatment of life, for which I am contending, has no recognized standing in the marts of the world. It is considered beneath the notice of the average man, engaged in the new phase of the great war, known as the struggle for existence. He awakes to the existence of art only when he has made his pile and he has time to commission his architect to build him a palace, his decorator to recreate all the periods in it, and his broker in art objects to expend some of his millions in Ascoli copes and royal Spanish tapestries and Tintoretto's and Rembrandt's and gothic carvings, so that he may feel at home in his surroundings after his day's labor at coupon cutting. Is it not the thought of the poor equally with the rich that art is a matter of having rather than of being,—a museum rather than a state of mind or a transfiguration of life? Emerson expresses it in a single sentence,—“Though we travel the world over to find the beautiful, we must carry it with us or we find it not.” How else should we be so indifferent, for instance, to the appearance of our own streets or landscapes, tolerating eyesores and dirt, or to our own home surroundings in regard to decoration and pictures, or to the disharmony in many other departments of public or private life?

It is natural to adopt the concrete imagery of the painters in discussing art in the larger sense and we turn to Browning as the most acute interpreter of art in both senses. His *Fra Lippo Lippi* says,—

“Can't I take breath and try to add life's flash,
And then add soul and heighten them threefold?
Or say there's beauty with no soul at all—
(I never saw it—put the case the same—)

If you get simple beauty and naught else,
 You get about the best thing God invents,—
 That's somewhat. And you'll find the soul you have missed
 Within yourself when you return Him thanks."

and again,

"You be judge.

You speak no Latin more than I, belike—
 However, you're my man, you've seen the world
 —The beauty and the wonder and the power,
 The shapes of things, their colors, lights and shades,
 Changes, surprises,—and God made it all.
 —For what? do you feel thankful, ay or no,
 For this fair town's face, yonder river's line,
 The mountain round it and the sky above,
 Much more the figures of man, woman, child,
 These are the frame to? What's it all about?
 To be passed o'er, despised? dwelt upon,

Wondered at? O, this last, of course, you say.
 But why not do as well as say,—paint these
 Just as they are, careless of what comes of it!
 God's works—paint any one and count it crime
 To let a truth slip. * * *

For, don't you mark, we're made so that we love
 First when we see them painted, things we have passed
 Perhaps a hundred times nor cared to see;
 And so they are better painted,—better to us,
 Which is the same thing. Art was given for that—
 God uses us to help each other so,
 Lending our minds out.

As nature almost uniformly presents aspects of beauty or grandeur in form and color and movement, and sound, with its surging waves, its gracefully swaying masses of trees, its ever-changing skies and varied hues in foliage and flower, its bird notes and thunder peals, so man has implanted in him as one of his most precious functions the esthetic sense, the perception by which he relates himself to nature and to nature's god, which enables him to appreciate as well as to create beauty in his measure, so that his works may have that divine stamp of art. Thus have been developed those arts we call "fine"; architecture, the oldest with its immediate family and handmaidens, sculpture, mural painting, and many minor arts: the

graphic arts, the representation of material forms: literature in its varieties of oratory, poetry, and drama: music, pure or abstract, and in combination with language in song and opera: movement, as in the dance. In all, the characteristic is the same. The utilitarian arts are given a decorative form and higher content. They are dedicated to the enrichment of life. A decorative quality is superadded to the useful properties, and they are thereby raised to the plane of fine arts. They are related closely to each other because they are subjected to the same laws of measure and rhythm and proportion and harmony; in a word, they are given the beauty of form, the definite space and tonal relations, which the mind appreciates and craves and delights in. Thus building becomes architecture, language becomes oratory, description becomes poetry, sound becomes music, walking becomes dancing, clothing becomes costume. Thus we pass over from the world of purely practical affairs to the world of art. The operations or products have not become less practical but they have a different reference. They take on an added dignity from their twofold character in which they supply the lower needs and at the same time minister to the higher, by the transformation of art. In this light we see why all those useful objects which have been given grace and elegance have an interest of the first order. The fabrics in which the process of weaving has been used as the basis of the decorative design, the objects in wood or metal in which the beauty of the material has been given full scope, the utensils or furniture in which skill of hand is manifest, these all make a powerful appeal to the mind sensitively attuned to harmonies of use and beauty. From a chair well designed and made to the sublime Gothic Cathedral, the principle and the effect on the mind are the same.

Passing to the work of pure art, such as the painted landscape or the chiseled figure or the concrete, we reach an even higher level of satisfaction, for which, however, considerable preparation of mind is needed, on account of its abstraction and the many secondary and reminiscent and inferential elements in it. Altho the greater the work of art, the more universal it is and therefore the stronger is the general appeal it makes, yet education is necessary for its fuller enjoyment. It is such artistic culture, both in the commoner processes and in the fine arts, that I am speaking for—a habit of refusing to see commonplace or ugly things and of demanding gracefulness and harmony in surroundings; of studying beauty in all its forms and as it has been embodied in all ages and countries, so that taste may be cultivated, artistic knowledge acquired, and an artistic character formed.

Thus is life opened to all the influences that beat upon it from the past and present and is made sensitive to every artistic thought that has been embodied thru whatever medium— literature, music, architecture, painting, the plastic arts, craftsmanship, or the rhythm of movement. There have been many notable examples of men, like Pericles, Lorenzo de Medici, Napoleon Bonaparte, Gladstone, and Roosevelt,—men of great activity in practical affairs and devoting themselves to public work, who yet have continued to cultivate other sides of their nature and to enjoy other mental occupations. They thus avoided the narrowness that usually goes with specialization by the catholicity of their tastes and the breadth of their sympathy. We think of such men who have struck great blows for world progress, or served their day and generation in continuous hard work, yet guided and steadied by a high idealism. The strain of their principal business was relieved by breathing the atmosphere of the larger spiritual life in communion with literature and art and history, and their daily occupations were interfused by “those thoughts which wander through eternity.” If men with the responsibility of states on their shoulders can also cultivate the arts, how should not the ordinary person keep all his powers of appreciation in free and harmonious exercise?

I am therefore not counselling softness or sentimentality in thus urging the claims of art. There is no incompatibility between the strength of character so necessary in this world of struggle and the permeation of that character by the spirit of art. The latter puts all faculties and works of life on a higher plane—gives them unity and invests them with a noble quality by which they are removed from the commonplace and become ideal. It is the gentleness that makes great. The present war affords an example. The men now in the trenches fighting for democracy and progress are, thru this their high devotion to principle and country, envisaging the ideal, and this great struggle is bringing in an awakening to values other than material, among which, the artistic conception of life will surely be realized. We stand in awe before the world conflict which is raging in Europe and we are absorbed in its details because we almost fear to confront the epochal changes that will come in its train. We review the events which have changed the trend of history and set civilization on new courses, and we discover that we stand, doubtless, at one of the most momentous crises of the world which we must believe will create a new heaven and a new earth and make new men with new motives and reactions and a new outlook. A complete readjustment in all departments must follow. In fact, while

in the last decades we have been passing thru the darkest ages of art, when this idealism has been submerged, there seems a prospect of brightening skies. The hegemony of materialism has perhaps had its day. The preoccupation of the world by science and business and the competition of life, to the exclusion of religion and art and the finer feelings, may be reaching its term. Ralph Adams Cram says: "I believe that all the wonderful new forces, now working hidden, or revealing themselves sporadically, will assemble to a new synthesis that will have issue in a great epoch of civilization as unified as ours is disunited, as centripetal as ours is centrifugal, as spiritually efficient as ours is materially efficient and that then will come, and come naturally and insensibly, the inevitable art that will be glorious and great."

The realization of the unity of life should be our aim. We may develop one or another of its functions and let others dwindle or atrophy. We may enjoy a few of its satisfactions and think we have attained completeness. Only as we conceive of life in its wholeness as the Greeks did and the Japanese do, can we have its proper expression; only in the interplay of all its activities is its full meaning revealed; only as it is illumined by the glow of idealism are its mountains and capes, its rivers and woodlands seen in true perspective. Art affords us a vantage point, set high above the dust of toil and the limitations of knowledge, the chagrin of apparent failure and the inadequacy of effort, from which to view all of these in their ideal relation to the broad sweep of things material and spiritual, by which survey to be assured that in their synthesis only is the meaning of life made plain.

All of life should be pervaded with the subtle quality of art. As intelligent beings, see that ye add to your knowledge wisdom, and to your wisdom, culture, and to your culture, art. There is the whole range of life to be taken account of and treated. Is it to be a comprehensive artistic treatment, or a partial one, limited to a few departments in which we specialize? For the latter sort "universal" or "university" culture is a misnomer. There is the mind to train and furnish with lofty images, drawn from the realms of literature and the fine arts, the heart to fill with the purest sentiments and emotions, the soul to inspire with the most ennobling ideals and purposes, the outward life to render sweet and gracious with curtesy and gentle manners. There is the body to develop into the beauty of the divine image and to clothe in a decorative way. There is the home we live in to be made agreeable outwardly, and the furnishings and appointments to be made appropriate and har-

monious. There are the surroundings of the house to be properly treated and kept in order. There is the city itself, as the larger environment, to be made orderly and its outward aspect attractive. There is the life of the family and community and state to be transfused by a more fraternal spirit, a more elevated morality, and a purer altruism.

"I feel for the common chord again." Religion, Morals, Ideality or Art,—these three are the great energizing principles, the spiritual forces, which transfigure life and make it glorious. On them, as on the warp of the loom, should be woven the marvellous tapestry of life, splendid and strong, figured with the forms that personify great ideas, shot with the golden threads of sentiment and glowing with the rich colors of feeling mellowed by time and experience.

The Nature of Moral Education

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THE view of moral education herein outlined is based on a two-fold assumption; the existence of a moral consciousness, and the possibility of its education. Writers on the history of morals, such as Hobhouse, Wundt, and Westermarck are agreed that among the entire human race, including even the most savage tribes, there is a striking similarity in moral concepts which finds expression in certain antithetic ideas, such as our popular notions of approval and disapproval, right and wrong, and upon which the social fabric is based. These concepts do not consist in a mass of inherited ideas. Actual moral ideas as such have no universal validity, for what one individual, community, or age considers right another may consider grossly wrong. Slavery, for example, has been heartily endorsed by some communities, and is as heartily condemned by others; torture is an intense pleasure and even a religious duty to the more savage races, but is a horror to more enlightened peoples. These antitheses, moreover, are expressed in various ways, corresponding to the peculiar sanctions by which they are gauged. Thus we have such terms as justice and injustice, lawfulness and lawlessness, righteousness and unrighteousness, holiness and sin; and corresponding with these we have such sanctions as the social will or law, and the law of God. But all these ideas manifest an identity of moral endowment, a capacity to form and appreciate certain antithetic concepts.

As to the second assumption—the educability of the individual's moral consciousness—its universality is questioned by many. There is a strong conviction among educators that there are cases of perverse natures, natures that are "originally bad," and that are wholly unresponsive to the call of right. Whether or not this be so, we have a choice of either of two possible theories. The one is the theory enunciated by Rousseau,¹ that the child is good originally, that he is headed toward the right and that education is wholly responsible for his conduct, be it good or bad. The other theory, the one here adopted, holds that the child is originally neither good nor bad, that he is born with certain tendencies to action which in themselves have no moral quality, but which may be developed so as to produce a conduct that may be designated as "right" or

1. Rousseau: *Emile*, Part I.

"wrong." But both these doctrines have implicit in them another doctrine. Whether or not we agree with Rousseau that education is wholly responsible for the child's conduct, we cannot dodge the logic of the argument which insists that, once having admitted that a certain method of education may be able to develop "right" conduct, we thereby imply that a different method of education, or no education at all, may develop a conduct that is "not right." We have, then, as a basis for our discussion two assumptions, each of which implies an antithesis: the existence of a universal moral consciousness with its appreciation of the antithesis of "right" and "wrong"; and the possibility of education which will develop in the individual a conduct which may be designated by either of the same antithetic terms, "right" or "wrong."

All conduct has a two-fold aspect. It may be viewed from the standpoint of the individual, the doer of the act, the self; it may also be considered from the standpoint of the content of the act, as it affects others. The former gives us the psychological, the latter the social aspect of conduct. The distinction is a purely logical one, for there is no conduct that is individual which may not in some remote way be related to society. From the standpoint of psychology, conduct springs from certain inherited tendencies to action, the instincts, and certain forms of unorganized, spontaneous impulses. It is probable that the early instinctive and impulsive acts are not accompanied with a consciousness of activity, or at least with a very diffuse consciousness. As activities increase, however, in number and complexity, there develops a certain awareness of the relation of cause and effect. Certain impulsive movements are attended with certain results and other movements do not bring these results. Moreover, this awareness arises in terms of certain emotional disturbances.² Some activities are attended with satisfaction and others with dissatisfaction. This emotional factor serves the child in a two-fold capacity: it becomes the interpreter of all past activities in terms of certain values which it attaches to each activity, and it also acts as a suggester or prompter of future activities with reference to these values. At each conscious movement the child's experience becomes more complex and differentiated. Each movement assumes a distinctive character, while his growing appreciation of values causes him to react upon his experience in an effort to reinstate those activities which have special value for him. The developing consciousness thus exhibits in elementary form an appreciation of values in terms of emotional disturbances, a judgment with its inherent

2. Dewey: *The Study of Ethics*, p. 15.

processes of perception, memory, and reason, and a certain control of impulsive activities. From the standpoint of the individual, then, the problem of moral education may be tentatively stated as the effort to give this inner life of the individual valuable content, and to develop the will thru the organization of the more or less aimless and unorganized impulses, with reference to a conscious purpose.

In discussing the activity of the child and his differentiation of experience, we have already anticipated the other phase of conduct, the social. Whence is that experience toward which the child reaches? And what is the content of it? The growing awareness of the child slowly recognizes that the experience which his activity brings him is not identical with his experience of his own body, it is essentially not self. Here we have, then, a growing differentiation of experience in terms of socialization. It is evident that the more he becomes aware of the not self or the social, the more he will become aware also of the self. Recognition of the one necessarily involves a recognition of the other. Thru this whole process the child has acquired his experience thru his own activity. Society has acted merely as a sort of matrix in which the germ of the self has developed. This developmental process of the child is in ceaseless activity; it is ever reaching out and organizing its new experiences. From the standpoint of society, then, we may tentatively state the problem of moral education as an effort to provide the proper matrix, or social content, in the midst of which the individual may organize his activities, so that they shall function with reference to certain definite and valuable ends. What, now, is the content of that education which will provide a proper environment, and develop that which is inherent in the individual so that it will become effective in conduct? Since the individual and society are organically related, and mutually dependent, it is immaterial whether we approach this problem from the standpoint of the individual or of society. A discussion of the one will involve a discussion of the other. From the standpoint of the individual the content of moral education will be characterized by the development of three definite elements, wisdom, moral motive, and resolute activity.

WISDOM

Wisdom, as here used, implies the possession of a body of knowledge, coupled with an ability to weigh values. All ideas which influence the individual toward the performance of a "right" act are adjudged "moral"; and all ideas which issue in "wrong" acts are adjudged "immoral."

The use of the terms "right" and "wrong," "moral" and "immoral," immediately demands a consideration of three fundamental questions: Whence are these ideas which we call "moral"? What is the source of that standard of evaluation by which an idea is judged to be "right" or "wrong"? And how may these ideas be developed in the individual?

For the answer to the first question we must turn to society. We have seen that the child's experience of the self is simultaneous with, and coextensive with, his experience of society. It is his experience of society that makes it possible for him to experience his own individuality. His developing consciousness enables him to differentiate ever widening vistas of experience. Society gradually assumes for him the mien of an organized institution which surrounds him with conditions that elicit from him peculiar activities. There are, first of all, the situations of family life; the activities of parents, brothers, and sisters, all of which compromise his own activity. These activities find a mental equivalent in the rise of ideas of authority, duty, responsibility, justice, care, love, sympathy, in short, all ideas that may in any way influence conduct. The school next adds its quota of ideas; the personality of the teacher, the curriculum, methods of study, school government, and the social relations of students. Then there is that wider society, including the community, the church, the state, and the world, each with its own activities, influences, sanctions, responsibilities, and demands upon the individual. In so far as any or all of these ideas influence the conduct of the individual they possess moral or immoral value.

As to the source of the standard by which the values of ideas are judged, it has already been pointed out that the child early develops an "awareness" in terms of certain values that are attached to certain impulses, and the basis for these values lies in certain emotional disturbances, such as satisfaction or dissatisfaction, and that there early develops a tendency to repeat those impulses that meet with approval, and to inhibit those that are disapproved. Here, then, we have the first glimpse of a judgment of values with reference to a definite standard. The standard consists in the awareness of an unrealized idea or "ideal." This ideal is not some hypostatic idea that in some way makes its way into the mind; it is a product of the constructive activity of mind, and manifests itself in the form of a type by which the individual measures his activity.³ In early childhood the ideal is purely individualistic or selfish, tho the values that are sought are of a social nature. Every act or idea that minis-

3. Paulsen: *Ethics*, p. 271.

ters to his own satisfaction is for him a "good." These early ideas and activities, however, cannot be said to be moral, they are essentially unmoral. As the individual develops, and experience values increase in complexity, the ideal also differentiates to include values affecting not only the self, but the group immediately surrounding him—the family, friends, and the school. And with the expansion of ideals there develops also, as an integral part of it, that peculiar imperative, the "oughtness" of action, which sets the seal of right or wrong on conduct. The ideal of personal satisfaction is replaced or supplemented by a higher, a social ideal; and that is accounted "good" which has a tendency to promote this ideal. In the family it may take the form of obedience to parents, or the imitation of brother or sister; in the school it becomes a conformity to the will of the teacher; among the street gamins it takes the form of loyalty to the gang. As experience differentiates still farther, the ideal will embrace correspondingly larger groups including the local community, the State, and all the varied institutions of that complex known as organized society. The restraints and sanctions of family life are supplemented by those of the other institutions. The ideal itself, and the specific activities which an adherence to this ideal demands, will vary with the individual, the community, and the age.

The statesman and the private citizen may have the same ideal,—the service of society; yet their specific activities will differ widely; the ideal of an American is not the ideal of a Russian, and the ideal of the early Roman is not the ideal of the Italian of today. But in each case all conduct is adjudged "right" so far as it is in harmony with the ideal. But if ideals differ with the individual, the community, and the age, and the activities which they inspire are varied, and not infrequently in flat opposition to one another, it follows that we cannot formulate a concrete definition of the "good" which will embrace all the varied ideals of individuals and groups.⁴ The good is a relative term employed to express the relevancy of a particular act of conduct to a particular life situation. It follows also that "right," which represents conduct in conformity with the good, and "wrong," which represents conduct out of harmony with the good, have no absolute value. They are essentially relative terms.

Thus far we have discuss ideals, the good, and the right, with reference to organized society and in terms of strict adherence to its customs, laws, and sanctions. Conduct in conformity to this ideal is marked by an essentially uncritical attitude. Ideals are taken for granted without examining the ground for their demands. But

4. Paulsen: p. 281.

moral education recognizes another and a higher stage of development. The individual is led to pierce the veil of organized society and to discern another standard of conduct which transcends the standard of organized society, and which receives its sanction in what we shall here term "progressive" society.⁵

By progressive society is meant the society which "ought to be" in contradistinction from the society which "is," the possible contrasted with the actual. Conduct in the interest of this ideal may be un-social from the standpoint of organized society, because it disregards the standard of this society; it may be in open violation of the social standard, yet it will not be wrong, for it is enacted in obedience to an ideal which transcends the ideal of organized society; it will be essentially free, because it is rational, and creative of standards to which it yields willing obedience. The ideal of this progressive society is evidently not the ideal of all. It marks the acme of moral insight. The higher the stage of development, and the more differentiated the experience of the individual, the clearer will be its apprehension. Thus the final standard for the judgment of moral ideas is not the individual as an individual, nor yet society as an organized institution, but the demands of that larger life represented by a progressive social order.

As to the third question—the method of developing moral ideas—there is a wide divergence of opinion. There are those who strongly favor the direct instruction of moral ideas in the school. Others as strongly insist that moral ideas should be inculcated indirectly. Still others favor direct instruction, but insist that such instruction be excluded from the public schools. There is an overt attempt in this country to introduce direct moral instruction in the public schools. Formal textbooks have been composed which deal in an interesting way with the cardinal virtues. A unique system of instruction is that known as the Fairchild system. This system proposes illustrated lectures to impress upon the mind of the child acts of honor, friendship, courtesy, industry, the need of choosing a profession, etc. Several foreign nations, among which are Germany, France, and Japan,⁶ make the direct teaching of moral ideas compulsory in their public schools. Dr. Felix Adler recognizes⁷ the intense need of moral instruction; but argues that it should not be given in the form of formal lessons in ethics. It should take the form of intimate communion between master and pupil. The work

5. Wundt: *Ethics*, vol. 3, p. 84.

6. See articles in Vol. II. *Moral Instruction, and Training in Schools*, p. 70; 218; 319 respectively.

7. *International Moral Education Congress*. 1908 p. 13 s.

should, however, be left to voluntary agencies and not to the State, because of a lack of suitable teachers, because State teaching tends to become formal, and because morality cannot be taught without an appeal to some religious or philosophical system as a sanction. Professor Dewey also opposes direct moral instruction, but not out of regard for religious or philosophical scruples. He holds that moral education does not best come that way; that the basis of moral training does not lie in the handing out of certain pieces of information called moral, which the child is supposed to absorb, but that it lies in the child's own activity.⁸ Somewhat related to Professor Dewey's theory is the popular English ideal⁹ which is confined largely to moral training or habit formation thru the ordinary channels of the social life of the school, with little or no systematic instruction in morals.

Whatever may be the merit or demerit of direct moral instruction, this much must be conceded the opponents of this theory: the content of moral instruction, as such, is mere intellectual fact, and has inherent in it no guarantee whatsoever that the possession of the fact will take effect in conduct. The truth of the matter is that no one of the extreme views is entirely correct, and no one is entirely wrong. The very nature of moral ideas demands a two-fold treatment to make them effective in conduct. There are some ideas that will never be developed, or will be developed too late to influence the individual, unless they are taught directly. On the other hand, it would be impossible to keep direct moral consideration always in the forefront. Hence there is necessary also an indirect inculcation of ideas, in terms of the formation of specific habits, or trained tendencies to activity. These habits, however, are to be sharply distinguished from those merely mechanical habits which are the result of blind hit-and-miss activities. The former are based upon intelligence; they are essentially informed. Undoubtedly by far the larger share of that life which we call moral consists in responses to these trained tendencies to activity. These habits consist in a more or less strict adherence to the conventions of society, or to what is popularly known as social morality. But it is evident that the moral life of the individual cannot be lived by habit alone. Habit is mechanical. It functions with reference to a peculiarly fixed life situation. But life itself changes; experience becomes more and more differentiated, and old habits become irrelevant to the new situations. Hence there is a demand for an intelligent reconstruc-

8. Dewey: *Moral Principles in Education*.

9. *Moral Instruction and Training in Schools*, p. 108.

tion of activities, and this implies a ready knowledge of moral ideas. Here then direct moral instruction has its place, a place that will allow of no substitute. The individual should have a positive consciousness of what he is about, that he may have a vital standard by which to judge his conduct. This will involve instruction, not in an infinity of rules, but in a few of the basic principles of conduct. The individual should be taught the meaning of morality, and its inexorable claim to his obedience and reverence. He should be taught that the standards of society are not purely arbitrary, but that underlying them all is a universal natural moral law which carries with it its own rewards and punishments. He will thus be led to understand that the moral law is not an end in itself, but a means to an end, and that the chief business of the individual is not merely a conformity to the law but a healthy enjoyment of the privileges afforded by such conformity. In the light of these facts the doctrines of duty, freedom, and responsibility will acquire new meaning, for they will be seen to be rational. Armed with these principles, the individual will be able to interpret intelligently every new life situation as it occurs.

MOTIVE

The second characteristic of moral conduct is that it be actuated by a proper motive. In the first part of our discussion it was asserted that the early impulses of the child gradually became clothed with emotional values, in terms of ideas of satisfaction or dissatisfaction, and that there early developed an effort to reinstate those impulses which met with satisfaction, and to inhibit those that met with dissatisfaction. The ideas of satisfaction and dissatisfaction both presented themselves as possible ends to be attained, but there was a rejection of one and an acceptance of the other. The acceptance of the one, in this case the idea of satisfaction, forthwith made it the actual end or purpose of action, in contradistinction from a mere possible one.¹⁰ This actual end or purpose of action is what we mean by the "motive" of action. An analysis of the above motive, which is typical of all motives, will show that it contains two elements, an idea and its emotional accompaniment, both of which are dynamic in character. It is a fundamental postulate of psychology that all ideas are dynamic, and that if made the object of attention, they tend to go over into action, and will result in action, unless inhibited by other ideas. Emotion also has a more or less moving effect on conduct, as its very name indicates. Motive, then, being

10. Wundt: *Psychology*. p. 264.

a combination of these two elements, is also dynamic or impulsive in character. Moreover, it is in no sense an external power of force acting upon the individual. Environment may indeed play a part in arousing both the idea and the emotion. It undoubtedly does. But the motive itself is essentially of internal origin. As experience becomes more and more differentiated, ideas with their emotional accompaniments multiply, and each becomes a possible motive. As a result of this growing complexity there will necessarily arise conflicts among the possible motives, and these conflicts in turn will demand that choices be made between the opposing possible motives. The motive chosen in each case thus becomes the impelling force in conduct, the stimulus to act. Its inherent idea is the idea which the individual determines to realize, and the particular motive is chosen in each case because of its superior emotional value.

Now, just as we may speak of ideas as being of an intellectual, esthetic, moral, or religious character, so we may also speak of intellectual, esthetic, moral, or religious emotions. These terms do not represent absolute lines of demarcation between motives, but rather reveal the dominant characteristic in each. That which differentiates the moral emotions from the intellectual and esthetic emotions is its peculiar imperative character—its “oughtness,”—and its appreciation of right or wrong. A moral motive is, thus, an idea clothed with moral emotion. Thru its dynamic character it becomes a stimulus to conduct in harmony with the right. An immoral motive is an idea clothed with immoral emotions, and is a stimulus to conduct which may or may not be in harmony with the right; for it is evident that an act may be moral, tho the motive back of it may be immoral. Wundt.¹¹ draws a distinction between what he terms the “moving reason” and the “impelling feeling” of a motive; the one may be moral while the other is immoral. Similarly Sidgwick¹² distinguishes between the “intention” and the “motive” in conduct. He holds that the intention of an act may be wrong, while the motive is right, and uses as an example the case of a man who commits perjury to save his parent’s life. Here the intention is wrong (committing perjury) while the motive (saving life) is moral. On the other hand, the motive may be wrong and the intention moral. His example here is the case of one person prosecuting another who is really guilty, the prosecutor performing the act out of a spirit of malice. Here the motive (malice) is immoral, while the intention (prosecution) is just and moral. The motive and intent, however, are fre-

11. Wundt: *Ethics*, Vol. III, p. 202.

12. Sidgwick: *Methods in Ethics*, p. 202.

quently so closely interwoven that it is impossible to distinguish them.

It is evident from these facts, therefore, that moral motives have various degrees of moral worth. A motive in which one of its elements—either the intention or its emotional accompaniment—is immoral cannot possess the same worth as the motive in which both elements are moral. Motives may be grouped, therefore, with reference to their relative moral values. Thus, Wundt¹³ has divided them into four groups, naming them respectively, motives of external constraint, motives of internal constraint, motives of permanent satisfaction, and motives of the moral ideal. In evaluating these various groups we must bear in mind the distinction made above between the morality of the intention and the morality of the accompanying emotion, or what Sidgwick calls the "motive." Under motives of external constraint Wundt includes those which stimulate the individual to action because of a threatened punishment or social disadvantage. These are the motives of mere economy. The intention here is moral (conformity to law) but the emotion (mere avoidance of evil consequences), if it is moral at all, yet borders on the immoral.

Under the second group—motives of internal constraint—Wundt includes "those influences which are exerted by the example of others and the practices and habits of our own will, as they are conditioned by education and example." Conduct resulting from these motives is characterized by an attempt to promote the social welfare in every possible way. It is, therefore, essentially positive in comparison with that conduct which is actuated by the motives of external constraint. But here again, the intention, (promotion of social welfare) is moral, it is highly moral, while the emotion accompanying it (mere imitation of others or a desire to emulate others) has little or no moral value.

Under the third group Wundt includes those motives which, if acted upon, will yield more permanent satisfaction than others. But here the motives, while superior to the preceding, are accepted and acted upon without any inquiry as to their validity. From these motives there will emanate a conduct based on the principle of "right for right's sake," and in them the intention and its accompanying emotion first blend in a common morality. While these three groups of motives represent different degrees of moral worths, they yet have this in common that they are more or less immediate and transitory. There is no ultimate purpose in the interest of which all motives and actions may be organically united. This fundamental lack thus gives us a clue as to the nature of the fourth and highest motive, the motive of the moral ideal.

13. Wundt: *Ethics*; Vol. III, p. 67 sq.

In this motive, the intention and its accompanying emotion blend in a single ultimate aim which consists, not in stimulating a servile conformity to the restrictions of a fixed social standard, but in an interest in, and a steady adherence to, a single ideal—the promotion of the welfare of a progressive society. Activity in conformity with the imperatives of this ideal marks the acme of moral conduct. Actuated by this ideal and impressed with the inexorable authority of its claims, the individual is ever ready to obey its dictates, regardless whether his conduct meets with praise or censure. But this brings us to the third aspect of moral conduct, that of prompt and vigorous action.

RESOLUTE ACTIVITY

In resolute activity we have the executive phase of conduct, the will controlling the impulses and functioning in two ways, complementary to each other. There is a bold and dauntless projective activity which we shall here term self-assertion, and which finds a partial equivalent in the Greek idea of courage. Then there is also a firm and no less courageous inhibitive activity which we shall term self-restraint. Self-assertion implies forcefulness, initiative, outgoing activity. It consists in the power to face opposition and overcome it, whether this opposition come in the guise of physical or mental danger, fear, or pain. Self-restraint implies a power to curb those desires and impulses of whatever nature, whose gratification would tend to compromise the attainment of the moral ideal. Moral activity is, thus, not the result of the mere pull and push of a multitude of unorganized impulses. In moral activity the will functions in the organization of impulses with reference to a definite program, a program in terms of a strict adherence to the moral ideal. Resolute activity, whether in the form of self-assertion or self-restraint, will be essentially positive. The mere avoidance of evil savors strongly of a negative morality, if such a morality is possible. Positive morality requires not only that a man shall not harm his fellow man, but that he shall further his welfare; not only that he shall avoid falsehood, but that he shall strive for the truth. The pulse of morality throbs with victory over obstacles, whether these be in the form of tendencies to evil inherent in the individual's nature or snares thrust upon him from without.

If we now gather together the different threads of our argument we shall find that we have reached the following conclusions: The problem of moral education in the early stages of the child's life is the development of the will, in terms of an organization of the

impulses, thru the substitution of a valuable purpose for the more or less aimless pressure of instinct and impulse. This is to be accomplished in the midst of a social atmosphere thru the development of all the mental processes—perception, memory, imagination, reason, and the emotions,—all of which the child manifests in rudimentary form. The conscious purpose which is to be inculcated is at first the result of the accumulated reflection of parents, teachers, or guardians, and is not fully appreciated by the child. The early education of the child will result in the formation of habits. As experience differentiates, and social forms change, habits become irrelevant to life situations, and tend to break down. Thus there is required a continual reconstruction of experience, and this in turn demands an intelligence. As the intelligence develops, the individual perceives that social standards are but partial expressions of a more basic standard, the rational moral law. The ultimate aim of moral education is the organization of all experience, in terms of instincts, impulses, perception, memory, imagination, reason, and the emotions, so that it shall function in the development of a free being, one who is able to grasp new life situations as they appear, who is not guided by any external repression, but by a clear consciousness of an imminent moral law, and who is able to initiate conduct in harmony with this law.

The University in the Service of Society

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IN choosing a subject for this occasion I have selected one which during several years has possessed a strong interest for me. I have chosen to discuss the university in the service of society just because of this interest, and not because I can hope to make any contribution which is destined to become renowned. Indeed, in my own life work, I am committed to the saying of Marcus Aurelius: "As for life it is a battle and a sojourning in a strange land; and the fame that comes afterward is oblivion."

What I shall say emanates from my own peculiar store of knowledge, however restricted, and from my particular point of view, however warped it may be, and is in no sense the result of an extended investigation of what others have published on this topic. In fact, I have not been concerned with whether or not this especial subject has ever been discussed, but I have been far more concerned with making a statement of certain relationships which the university as a social institution sustains to society at large. As a consequence I am compelled to take a speculative risk in dealing with it and to assume all responsibility for those characteristics which eventuate from my own personal equation as well as for the omission from the discussion of some items, the inclusion of which might have given the discussion a superior form and symmetry.

Relative to both the terms, university and society, the idea of the common man is none too clear and he would be greatly bewildered were he called on to explain the functions of the university. The average man thinks of the university in a very vague way. He has a hazy conception that it is located somewhere, that it has grounds, buildings, and some professors, that it is supported by taxes or subscriptions, and that it is a good deal like the nearby high school or normal school. Thus, a visiting legislator, after being shown through our own humble institution, confesses his astonishment at what he found. He had entertained an entirely inadequate conception of the complex functions a university performs.

The hoary tradition that a university is a log, one end of which is bestridden by a great teacher and the other by an absorbent and

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worshipping student, is the proper point of departure for every discussion of university and college. There are many good people who still believe that that represents the function and character of such an institution today. It reminds one of the college professor of language who asserted that a college education should consist entirely of the study of language, for in it is contained thought, logic, and discipline. Such cases are useful to demonstrate that specialization may incapacitate the mind for perceiving the larger world of values and that the traditional conception of college education bears within it a strong tendency toward monopolizing the educational curriculum. But fortunately for education, such a mental attitude represents an intellectual bias from which society is gradually recovering, and such definitions of education may very well serve in our museums of antique theories of training as exhibits of vestigial ideas.

The older type of college and university was an institution whose chief function was to transfer certain more or less carefully selected traditions from one generation to the next. This traditional knowledge was that of a special class which was composed of the youth of the ruling and wealthy castes. Because utility and usefulness were not in question, since the scions of nobility and the sons of the wealthy did not have to look forward to usefulness and service, this traditional information and conventional polish was a quite proper disguise for education. And since there were only three learned professions at that time and two of those were concerned with non-temporal and non-productive matters, humanity was able to stumble along under the incubus of such a system of "higher" education.

With the rise of the modern world, however, with its great variety of important interests and its demand for insight into facts which were seen to affect life profoundly, the need of higher institutions of learning, possessing other functions than those of transferring harmless tradition to the sons of the "respectable" class, arose. After the present agencies for furnishing power and for manufacture and communication were fully ushered in, civilization, on its material side, became highly differentiated and rushed forward like a torrent. With the pressing demand which the new agencies made for a better insight into the materials that nature furnishes for industrial processes, science likewise branched out and threw off multitudes of new sciences, many of which were avenues to some of the industrial callings. The human mind also was dissatisfied with the old philosophy, history, economics, medicine. As a consequence, experimental psychology, history with a greater vision, a more sympathetic

political economy, sociology, comparative politics, bacteriology, hygiene, and sanitation, along with a list of other important new sciences, were developed. The emphasis was thrown on the understanding of present conditions. The new theory of evolution threw great emphasis upon the idea that life is a survival from a struggle with environmental conditions. That individual organism survives which is able to adjust itself to these conditions. A corollary is that the better the conditions are understood, the greater chance the individual concerned has of surviving. The further development of the individual is contingent on a deeper insight into the nature of the conditions which surround it and press upon it. As a consequence we arrive at the inference that an educational system not only cannot afford to ignore or neglect a study of the contemporary conditions of civilization but that its chief business is to make its students acquainted with them. Upon the basis of the adjustment theory of education which arises from evolutionary conceptions, and which regards intelligence as an adjusting function, the conclusion is inevitable that the mind is best trained by an acquaintance with and a consideration of the actual phenomena which are most involved in the great process of articulating individual and societal life with the present environment.

The modern university has been developed in response to such demands. The great modern social world is knocking at its doors and asking aid. There are fifty professions to be trained for today in place of the three of half a century ago. The city stage of civilization has rushed upon us, bringing with it scores of new problems that can only be met and solved by men and women who have been trained for specific tasks. Industrial life manifests itself in multitudes of directions. Expert physicists, chemists, biologists, and engineers are essential to making life in those directions both profitable and safe. Recent social and international development have projected into the arena of public life many tremendous governmental problems. To meet them successfully the highest type of statesmanship is required. Constructive statesmen must have knowledge and vision, and must be masters of the whole field of social science.

The critical nature of modern society makes peculiar demands on the university. That civilization is undergoing a severe test is obvious to thoughtful minds. The most gigantic and intricate problems confront us in America. The regulation and control of the most stupendous system of capital the world has witnessed, the adjustment of a race-conflict ever dynamic and menacing, the peaceful assimilation of millions of backward aliens, the adjustment of

life to the artificial conditions of a developing city civilization, the insurance of employment and a living income to the working men, the staying the flood of degeneracy and human derelicts produced by vice and the strains of maladjustment, the averting of the increasing mortality of men and women in middle life from diseases of the nerves and vital organs, the effective readjustment of the educational system, the guaranteeing of the utmost publicity pertaining to matters affecting the common welfare, the establishment of immunity from war and militarism,—these are a few of the serious problems. Were we not callous from perpetual contact with them, or insensible of their import thru our ignorance, a comprehension of the situation would be almost overwhelming. Evidently there are sufficient apparently insoluble problems and perils to capitalize the imagination of, at least, the mildest agitator.

No rationally minded man can face these demands and assert that the modern world is not placing a premium on that education which is founded upon a calm, diligent, penetrating study of present conditions. If the university is not able to respond to the demands of our world for men who are trained for all the high and important missions of life, it is by that much derelict in its duty. If it does not meet the issue, other institutions will be established which will. But, happily, universities are responding, altho slowly. They are becoming microcosms of the social world. National universities exist to meet the emergencies of great states. Municipal universities are now developing, as a democratic response, to train the young men and women of the immediate municipality who have not the means to go away to school. State universities, which are of recent growth, seek to offer to the young people of the commonwealth access to the great empire of learning and to give to the state an intelligent, loyal leadership.

The complex and critical nature of our social order places difficulties in the way of securing the right adjustment of a university to society at large, and of attaining the utmost freedom in the exposition of universal truth. One of the temptations or tendencies which possess faculties is to guide education in either of two directions: either to perpetuate the traditional form of instruction at the expense of a comprehensive and intelligent apprehension of present conditions and issues; or to over-emphasize the importance of the technical equipment of the student to enter callings and professions before broad and secure foundations have been laid in securing a knowledge of the principles which lie at the basis of our civilization. The one tendency shackles the mind with the narrow bands of the past and

installs a supreme but unilluminated contentment with the established order; the other tendency discounts the world of intellectual and ethical values and promotes the spirit of materialistic commercialism. A university does not fulfill its function unless it bestows upon its students the intellectual power and interest to submit all traditions to the process of criticism in order that the valuable elements may be conserved and the worthless ones discarded. Nor does it do its duty in full except that the intellectual and ethical interests of the student clientele are developed so that all callings and professional equipment are viewed as agencies to promote life in the largest sense.

The second obstacle that stands in the way of the full realization of its duty by the university consists in the disinclination of the larger community to concede the value of the utmost liberty of research and announcement of views in all lines of university endeavor. This is especially pertinent wherever the views are those of men who are called to treat questions which concern the organization of society, the principles of social justice and the ethics of collective life. Today we view with intellectual condescension that ancient social order in which the innovators in the realms of chemistry, physics, and astronomy were made the objects of attack and were penalized for questioning the prevalent ideas. It is to be hoped the age will come when the social scientists may expect as large an immunity from odium when their views run counter to what has been commonly held as natural scientists now enjoy.

In order that the idea of certain of the services which the modern university might perform may be advanced, let us consider that institution in relation to certain fundamental sociological conceptions. And the first of these conceptions is that of conservation.

In recent years we have witnessed a campaign in behalf of the conservation of the natural resources of our nation, which only means that our mines, forests, and water power should not be wasted nor used for purely selfish purposes. The sociological use of the word conservation is not far dissimilar. We are to think of society as constituting a system of structural organizations, each of which has its division of labor to execute. All parts act in relation to every other part. It is a more or less orderly process of cooperative interdependence. This is the social order in which all institutions and interests have their place. However, it should be noted that conservation is distinct from conservatism. The conservative man wants things left as they are. He insists that the social order is good, that any modification would prove injurious, and that the established

system is more or less sacred. On the other hand true conservation places a valuation on things. It constructs a scheme of values which is based on the experience of the past. What has promoted the interest and welfare of the masses of men is deemed valuable and should be conserved. Those processes and agencies which have injured humanity at large are regarded as bad and should be eliminated. Hence the true conservationist is an eclectic. He does not worship the social order as a perfect and sacred scheme of relationships. Recognizing many imperfections, he favors their elimination out of justice to the largest number of human beings.

The service the university has to perform in this connection is that of putting members of society in the position of being able to carry on the process of evaluating social institutions and processes wisely and judiciously. But before students can be taught this, their instructors must learn the art of evaluation. Every course of study and every study in the curriculum should be submitted to the criterion of social efficiency. We have been using purely arbitrary criteria in the past to arrive at the worth of the various subjects. The majority of educators now are able to think only in terms of their subjective tests. Such tests may be good for individual satisfaction but they are almost worthless relative to the objective demands of the age. When schoolmasters have learned to evaluate educational processes in the measure of their contributing power for the age we live in, we will hear less of the mythical discipline and culture arguments and more of those of objective needs. If democracy is to develop as it should, this is an important function. By natural tendency men are conservative. The mass of people are prone to accept things as they are, without question. In their estimation all that comes down from the past is to be conserved just because it is. Habit sets in early in the career of the individual and binds his mind fast to the ideas he has received. Imitation is the easiest method of obtaining information and this means that ideas are taken over from the past generation without critical scrutiny. Consequently the old order of things is continued, notwithstanding its imperfections and barbarisms.

The institution of slavery was conserved and the social order to which it belonged was continued so long as men remained in the passively imitative attitude of mind. Prostitution, the slums, alcoholism in the form of the saloon, and pauperism have been conserved because individuals have not been in the position, intellectually, to estimate them in terms of social worth. That great anachronistic vestige of the barbaric age, war, persists for the same reason, and

apparently intelligent men seek to make it respectable by hedging it about with a few so-called civilized rules. But war, together with the system of militarism on which it is founded, is barbarism thru and thru. To pronounce that a soldier may be killed by stabbing him with a bayonet but not by asphyxiation, because the former method represents "civilized" warfare while the latter does not, is to perpetrate a jest at the expense of civilization.

The university does not need to take up the work of making men conservative. Most of the graduates of universities today are conservatively minded. They have met little or nothing in their curriculum which was fitted to make them intelligent about life values. But the university as the agent of civilization does have a great work in the direction of bestowing on its sons and daughters the power and spirit of evaluating knowledge and conditions.

A second sociological conception is that of social interests. Eminent sociologists now view society as an association of fundamental interests, some of which are cooperating, others conflicting. The great organizations and institutions have grown up about and are the expression of, these interests. The social order is not all pacific within its boundaries, because the interests strive for supremacy. But the social order should evolve toward a larger reconciliation of warring interests and a more extensive cooperation of all associated factors.

In seeking to view the function of the university in relation to this social situation, it is clear that it may perform at least two distinct services. First, it has a specific duty to prepare men to participate actively in these interests. Every great interest is prosecuted and furthered by individuals who are versed in its processes, and each legitimate interest represents a magnificent field of work and endeavor. Hardly any of these interests could be abolished without seriously crippling the mechanism of society and destroying life and property. They will and ought to be continued and the good of the world demands that those who enter their service should have the highest equipment. Since I have already noticed the tendencies which make a demand for trained men in the various technical, scientific, and professional callings, further observation here is superfluous. But it may be stated that the training functions of the university should mirror the life of the larger community and that it should conduct training courses for all of the higher, professionalized interests.

Second, the university has another duty relative to the vast and intricate social interests. We remember that these interests tend

toward conflict and discord. General social welfare is best promoted wherever a just basis of cooperation obtains. The ideal for future social development lies in the direction of effecting a reconciliation among the contending interests. Much of the reconciliation thus far secured during the past has been of a compulsory nature. Agreements and settlements frequently have emerged solely because the strongest interest dominated the situation, not because a just basis of settlement had been reached.

Obviously what is required, in order that a fairer day may dawn, is the genesis of a conciliating attitude and the cultivation of fair minds and the love of justice. In order to equip a man for a profession, it is not sufficient that he be given the technical details and the principles at the basis of his calling. Schools of technology, professional schools of all kinds, and universities have been accomplishing those results very efficiently. But the invaluable work of seeking to bestow upon every candidate for a calling the knowledge and significance of its larger background, its relationship to society, and the just and fair functions it ought to perform for society, have been too generally omitted. As a consequence, many of our trained men begin life either insensible and indifferent to the calls of social justice, or as positively committed to the predatory and exploiting view of life. Setting out to win success at whatever cost, they jeopardize the interests of others, engender antagonisms, and postpone the day of reconciliation. To a large extent, because of this, we have trust against people, capital against labor, sect against sect. Is it not time that the university should demand and establish broader foundations for the professions?

A third sociological view emerges when we conceive society as a progressive process. The collective life of humanity has moved far away from the stage of development that was in vogue with the first men. As we look back at the crude beginnings of cooperative effort, as we survey the many interesting stages of evolution since then, and as we note the bewildering diversity of processes now represented which have in some manner sprung from that ancient past, we are sensible of a most remarkable development in social matters. The human race has had a million years in which to develop collective life and, during the earlier nine-tenths of that great stretch of time, men marked time, for most part, and took only the slightest step in advance but once in a millennium. Yet, the remarkable thing is that the steps were taken and that society has really evolved.

In order to denote the relationship of the university to human

advancement, let us inspect two items of that aspect of the social process which we call progress. These features are the cause and the directibility of progress.

While there may be many aspects of the cause of progress, there is only one great sociological condition which is ultimately able to account for it. That fundamental and indispensable condition is the expansion and development of the intellectual faculties. The human understanding is the key which unlocks the door of all the causal mysteries that surround the subject of social advance. We note as we inspect the ethnological records of that advance that social evolution has been most rapid at those times when the intellect moved forward to new insight and attainments. Such new insight manifested itself in fresh inventions and achievements. Every invention and discovery that afforded the race a larger mastery over nature was especially fruitful in the direction of progress. The great epochs in human improvement have been ushered in by the discovery of the larger forces of nature and of the methods of utilizing them. The discovery of the means of using domesticated animals for food and for motor power, the discovery of methods of utilizing wind power, water power, steam power, and electricity, have constituted the great eras of human advance. But the discovery of certain social contrivances have been necessary conditions and safeguards of social welfare. The building up of a language, of a system of notation, of the state and of other social organizations, were indispensable agencies of communication and cooperation. By means of all these agencies human interests have become diversified, multiplied, intensified, and their satisfaction has been placed on a regular and stable foundation.

Now, after society has developed into its higher stages, the university is the indispensable agency for securing progress. In the beginning of society, improvements and inventions might be stumbled on by the average man. No special process of intellectual training was then needful to make minds keen on the scent of principles. But our collective life is now built on such a colossal and intricate plan, and the fields of knowledge are so vast and profound, that the possibilities of further discovery no longer lie on the surface. They are now potentially possible only to the ablest and best trained intellects. The men who are willing to devote a lifetime to the work of investigating one small section of the field of nature or of society, with little or no thought of material rewards,—such men are now and are to be in future the essential agents of further human progress.

As the institution for the discovery and training of such men, and as the agent for furnishing the conditions, the laboratories, the

equipment, the available time and support without which none but the wealthy could hope to enter the field of research, the university is the prime agency for opening up the avenues to human advancement. The improvement of the conditions of society and the contributions to the advancement in the welfare of the nation, the state, and the municipality, are of a necessity centered in the proper functioning of the university

The directability of social evolution is a consideration which vies in its importance, as a factor in social progress, with that which we have just treated. Towards what goal does the colossal caravansary of social evolution trend? How are we able to direct that intangible, baffling, but ubiquitous condition that we term society? The Austrian sociologist, Gumpłowicz, said that it could not be controlled or directed; that the social forces, like the forces of the solar system, lie outside the reach of human power; that human progress is therefore impossible, and that social misery must increase with time. The lot of the masses of human beings, he claims, must become more intolerable because the development of their capacity to enjoy, without the accompanying ability to command the means to satisfy their expanding wants, is inherent in the social process. Hence the human race is doomed to an existence of increasing and inevitable misery.

It is the glory of the United States that it developed an intellectual giant who has administered a death blow to this theory and has builded a scientific foundation for a theory of progress. A soldier in the Civil War, he was afterward for many years a renowned paleontologist in the service of the United States Geological Survey, finally becoming the father of sociology in America, and one of the world's greatest and most constructive minds in that field. The late Lester F. Ward developed, for the first time, a system of social philosophy in which the principles were firmly laid which demonstrate not only the possibility of progress, but in which was indicated the possibility of social control.

His demonstration consisted in showing that society is a great field in which the phenomena are produced by social forces, just as in nature the natural forces account for natural events. And just as natural scientists have obtained control over certain fields of nature, and can predict in many fields what will occur because they have discovered the nature of the forces at work in the respective fields, so in the field of society a thoro knowledge of the nature of the forces which move society and produce collective events will place in man's hands the ability to direct the stream of social activities. Then social

evolution will no longer be a matter of accident. Progress will, as a consequence, not be spasmodic. Human misery which eventuates because of conditions not now controlled will be eliminated.

What Ward, in a masterly manner, has philosophically demonstrated, the world has been proving in an increasingly practical way ever since society began. The growth of the state reveals a remarkable series of developments in the direction of the control of the sociological conditions of life by means of state agencies. Without possessing a theoretical insight into the nature of society, the peoples of the successive ages have more and more clearly seen that the evils and abuses which arise could be removed only by the strengthening of a central authority representative of the rights and interests of all classes of society by means of which the conflicting and menacing interests could be regulated. But this work of regulation and reconciliation of interests is as yet far from complete, largely because the social forces are not yet thoroly known, charted, and classified. Both practical and scientific workers in the social field are needed who will seek to perfect this knowledge and, by it, make progress more possible.

The universities are as logically and naturally the homes for the prosecution of the scientific aspects of this task as for the development of insight into the processes of physical nature. The field of society is intricate, complicated, baffling. The social forces and conditions cannot be placed in a laboratory or test tube for experimental purposes. The laboratory of the social scientist is the community and the collective life that lies without university walls. The economist, political scientist, historian, and sociologist must study life as it is, and cannot help having opinions according to conditions as they observe them. They may draw wrong conclusions and make mistakes. But men in natural science have often erred. It should be recognized that new fields call for long and patient effort before positive and absolutely demonstrable conclusions may be drawn. Meanwhile, it is the function of universities to promote investigations into community conditions, to counsel moderation in the announcement of results until their certainty is reasonably assured, and to foster deeper insight into things of the collective life. Only by pursuing this course can they serve society to the full measure and perform their service that lies in the plane of directing human progress.

Emerson as a Social Philosopher

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SOcial philosophy is increasingly coming to recognize the debt that it owes to creative literature. The more clearly the laws of society are understood, the more it becomes evident that the great geniuses of literature have grasped in flashes of poetical insight the principles which science is slowly groping to express in practical prose. A study of the classics reveals the fact that the influence they wielded proceeded essentially from a point of view of spiritual detachment thru which the writers were able to feel and express the operation of an ever present moral order. Hence the classics express the potencies which the human mind will unfold when it reaches moral maturity in a clear, scientific understanding of social law. Of all the great names of literature, Emerson has a particular claim upon the attention of the social scientist in that he felt the impress of the modern scientific spirit. It is the purpose of this paper to attempt to set forth the essentials of Emerson's social message, and then to compare his work briefly with the creative thought of earlier historic epochs.

It is not at all difficult to comprehend Emerson if one takes a stand in imagination on the calm and clear mountain tops from which the author surveyed life. For Emerson is pure intellect raised to those heights of character where he sees moral and social law as a domain of the same universal balance and harmony which the scientist discovers in the physical universe. Beholding life in its perfect ebb and flow, its absolute compensations, the seer becomes the poet, the vision of truth becomes the vision of beauty, and all life in its lights and shadows, its laughter and its tragedy, its saintliness and its sins, its death and its resurrection, its whirlwinds of war and births of new systems, its endless play of color and form, becomes one vast allegory by which an Infinite God has revealed himself. Emerson saw life as it is given only to the pure mind to see it, as an eternal harmony, as a glory and a dream, which in the market place of self-seeking fades into the light of common day. The spiritual detachment which is the condition of his vision he suggests in the following lines:

The delicate shells lay on the shore;
 The bubbles of the latest wave
 Fresh pearls to their enamel gave;
 And the bellowing of the savage sea
 Greeted their safe escape to me;
 I wiped away the weeds and foam,
 And fetched my sea-born treasures home;
 But the poor, unsightly, noisome things
 Had left their beauty on the shore
 With the sun, and the sand, and the wild uproar.

Then I said, "I covet truth;
 Beauty is unripe childhood's cheat,—
 I leave it behind with the games of youth."
 As I spoke, beneath my feet
 The ground-pine curled its pretty wreath,
 Running over the club-moss burrs;
 I inhaled the violet's breath;
 Around me stood the oaks and firs;
 Pine cones and acorns lay on the ground;
 Above me soared the eternal sky,
 Full of light and diety;
 Again I saw, again I heard,
 The rolling river, the morning bird;—
 Beauty through my senses stole,
 I yielded myself to the perfect whole.

His point of view, Emerson has explained most clearly, perhaps, in his essay entitled "The Poet." He might well have prefixed to it the text: "What shall it profit a man if he gain the whole world and lose his own soul," since the essay is a sermon on the nature of the soul as poetic insight, which is taken to mean the interpretation of the symbolism of nature and of life. And the form itself is essentially poetry; for Emerson has written his best poetry in his prose;—he is not a master versifier, and when he drops into conventional meter he loses something of cadence and fulness. In the essay he argues nobly the preciousness of insight into the harmonies of life as the ultimate wealth. He points to creative literature as the source of the full interpretation of an age, to the genius that can weave the threads of purpose in the particulars of science into a fabric of spiritual meaning. He renames the Trinity as the Knower, the Doer, and the Sayer, or the love of the True, the Good, and the Beautiful, who are all three one and equal, but it is the Sayer, the poet, who declares the harmony of knowledge and deed, and so becomes the revealer of life's meaning. It is this function, in fact, which Emerson in a scientific age performs.

Turning outward from the subjective position to the Universe that our author beholds, let us attempt to see it thru his eyes. We need not dwell upon his view of physical nature; briefly stated, it sees the world as the mathematics of number and form, algebraic symbolism, and the flowing curves of the calculus, the action and reaction of physics, and the subtle combinations of chemistry projected from their origin in the Universal Mind, and clothed in the magic of reality. It is not, however, in his conception of Nature that Emerson stands preeminent, but in his discovery of the same Universal Mind in the evolution of life, the flow of history, and the laws of society.

It has often been remarked that in his interpretations of biology Emerson anticipated in general terms the Darwinian theory, as is evidenced in the lines:

A subtle chain of countless rings
The next unto the farthest brings.
The eye reads omens where it goes,
And speaks all languages the rose;
And, striving to be man, the worm
Mounts through all the spires of form.

But he has done more than this; he has, in fact, sketched the far more pregnant view of Creative Evolution, which of late Bergson has so ably elaborated, and which has put life and divinity into the mechanism of the Darwinian hypothesis. And not only that, he has also seen and poetically stated the same principle in the complex field of social evolution, picturing how the golden thread of creative energy which runs thru the long ages of cosmic history in the climbing mutations of species, grows on into the expanding world of human consciousness, and now finds its supreme work in the vital activities of the mind. Thus human history is shown to be primarily the record of the evolution of culture and its reaction on man and nature.

The parallelism between the evolution in nature and in mind may be simply illustrated. We are all familiar with the partial evolutionary series which have been discovered by geologists, as for example the connecting links leading up to the horse. Placed in a line these skeletal remains present a gradually advancing succession of steps from an animal the size of a fox up to the present diverging types of horses. Suppose we place beside this line of skeletons a row of successively invented models of any machine, as for example the steam locomotive. Here again the series leads from a small and relatively simple type by successive steps of adaptation and improvement up to the modern giant locomotive. Thus it may be seen that

the thought of man is but the creative thought of nature assuming a new and more intricate mode of expression, in which man, who has become a living soul, is made a partner in creation. We may consider the creative act as a sweep of thought which like a powerful magnet playing upon a mass of filings throws the atoms of protoplasm or metal into form about an idea, which in its fulness is a personality,—the Infinite Mind that the seer recognizes in the symbols of the Universe. Thus mind centers in religion and art, it reacts on the Universe as the social, biological, and physical sciences, and the progress of civilization consists essentially of the clarification of thought thru experience into ever-widening circles of truth,—in the emergence into consciousness of the eternal laws and harmonies.

Emerson continually assumes and illustrates this concept, but a single poetical quotation must suffice:

Earth proudly wears the Parthenon
 As the best gem upon her zone
 And morning opes with haste her lids
 To gaze upon the pyramids.
 O'er England's abbeys bend the sky
 As on its friends with kindred eye;
 For out of Thought's interior sphere
 These wonders rose to upper air,
 And Nature gladly gave them place,
 Adopted them into her race,
 And granted them an equal date
 With Andes and with Ararat.

These temples grew as grows the grass,
 Art might obey but not surpass.
 The passive master lent his hand
 To the vast soul that o'er him planned,
 And the same power that reared the shrine,
 Bestrode the tribes that knelt within.
 Ever the fiery Pentecost
 Girds with one flame the countless host.

We turn next to Emerson's philosophy of society which, as we might guess, includes in a vast synthesis all that man has ever done of good and ill. Tho accepting the highest standards of righteousness as implicitly as he accepts the law of gravitation, Emerson plays the part of the interpreter and not the critic in his view of the past, and on the foundation of the unity of life he builds his social doctrine. He says:

In liberated moments, we know that a new picture of life and duty is already possible; the elements already exist in many

minds around you of a doctrine of life which shall transcend any written record we have. The new statement will comprise the scepticisms as well as the faiths of a society, and out of unbeliefs a creed shall be formed. For scepticisms are not gratuitous or lawless, but are limitations of the affirmative statement, and the new philosophy must take them in and make affirmations outside of them, just as much as it must include the oldest beliefs.

So, as he looks over the records of history, he pictures with intuitive insight the unity of events in their interplay and compensations, and discovers their identity with the impulses of his own soul. Here are a few sentences from his essay on history:

There is one mind common to all individual men. Every man is an inlet to the same and to all of the same. He that is once admitted to the right of reason is made a freeman of the whole estate.

Man is explicable by nothing less than all his history. Without hurry, without rest, the human spirit goes forth from the beginning to embody every faculty, every thought, every emotion which belong to it in appropriate form.

Each new law and political movement has meaning for you. Stand before each of its tablets and say, "Here is one of my coverings. Under this fantastic or odious or graceful mask did my Proteus nature hide itself."

And tho in his exuberance of self-reliance he over-shoots the mark in the following passage, yet we accept his purpose which is to throw us back from the past into the work of the present:

Time dissipates to shining ether the solid angularity of facts. . . . The Garden of Eden, the sun standing still in Gibeon, is poetry thenceforward to all nations. Who cares what the fact was when we have thus made a constellation of it to hang in heaven an immortal sign. London and Paris and New York must go the same way. What is history, said Napoleon, but a fable agreed upon. This life of ours is stuck round with Egypt, Greece, Gaul, England, War, Colonization, Church, Court, and Commerce, as with so many flowers and wild ornaments, grave and gay. I will not make more account of them. I believe in eternity. I can find Greece, Palestine, Italy, Spain, and the Islands,—the genius and creative principle of each and of all eras in my own mind.

Emerson's philosophy of life has rested in these later years under the stigma of individualism, but a careful study will assure anyone that the imputed blame is undeserved, and that Emerson, far from having contributed to that perversion of selfishness which we miscall individualism has instead pointed out clearly the true foundations

of democracy, and indicated the path which our political development must follow. For individualism is a good word; we must repent of our weakness in having lost faith in it; and must come back as every vital age has come back to the recognition that the foundation of all things in social life is the individual soul in harmony with the Universe.

To begin at the point where Emerson seems to our generation to be most in the wrong, let us recall his words: "The less government we have, the better,—the fewer laws, and the less confided power." Taken from its context the sentence is admittedly misleading, for the problems of the present day lead us directly toward state action. But when we go into the details of modern legislative needs we find Emerson vindicated, for the end of scientific legislation would be greatly to simplify the present activities of civil government and its extension in property. Law, in both its professional and political aspects, is naturally the function of society which has the most successfully resisted the impress of modern scientific method, with the result that tho we live in a new industrial and philosophic world, we are building the complex structure of modern life on legal traditions of an outgrown age. When the scientific spirit at last breaks its way thru the thick cobwebs of legalism, it will brush aside a thousand laws representing special interests, petty ambition, and feudal precedent, and will reconstruct on the lines of a few simple and direct principles radiating from the essential nature of society. Emerson is right in his position that institutions resting heavily on compulsion should be objects of suspicion. He saw as we do that when laws grow into a tangle whose meaning the plain mind cannot grasp, when privileges and red tape clutter the stage of action, and when organization overrides initiative, that the real trouble lurking behind the mask of complexity is group or dynastic self-interest. For genuine democracy makes toward simplicity and self-reliance, toward a flexible society where the captain of industry and the ditch digger and the poet each readily finds his place and is rewarded for the doing of his work well.

A quotation or two must suffice in presenting in Emerson's words the problem of the State:

That which all things tend to educe, which freedom, cultivation, intercourse, revolutions, go to form and deliver, is character; that is the end of nature, to reach unto this coronation of her king. To educate the wise man, the State exists, and with the appearance of the wise man, the State expires.

It is clear from this passage and from its context that what he means by the State is not social organization but the organization of physical compulsion. In this concept he is in agreement with present expert thought, as is suggested by the following quotation from a recent work which traces the progress of society thru feudalism and capitalism, and anticipates the future as follows:

This has been the path of suffering and of salvation of humanity, its Golgotha and its resurrection into an eternal kingdom—from war to peace, from the hostile splitting up of the hordes to the peaceful unity of mankind, from brutality to humanity, from the exploiting State of robbery to the Freemen's Citizenship.*

Emerson correctly diagnoses, also, the materialistic thinking and legislating which places property above persons, and which is the disease that breaks out in class and world strife. These are his words:

And so the reliance on property, including the reliance on governments that protect it, is the want of self reliance. Men have looked away from themselves and at things so long that they have come to esteem what they call the soul's progress—namely, the religious, learned, and civil institutions—as guards of property, and they deprecate assaults on these, because they feel them to be assaults on property. They measure their esteem of each other by what each has, not by what each is. . . . But that which a man is, does always by necessity acquire, and what a man acquires is permanent and living property, which does not wait the beck of rulers, or mobs, or revolutions, or fire, or storm, or bankruptcies, but perpetually renews itself wherever the man is put.

Fear for ages have bowed and mowed and gibbered over government and property. That obscene bird is not there for nothing. He indicates great wrongs that must be revised.

That is, as it appears, Emerson would charge our civilization with failure in respect to that species of speculative property holding which is like the buying and selling of church benefices in the middle ages,—a spurious ownership, not related to the real activities of the owner as a master of industry, and which will fall to the ground when the legalism which supports it is dissected away.

But, we ask, from whence is to come the force to regenerate society. Emerson answers this question with historic accuracy and spiritual insight, as the following words show:

We want men and women who shall renovate life and our social state, but we see that most natures are insolvent; cannot satisfy their own wants, have an ambition out of all proportion

*Oppenheimer, "The State," p. 90, Indianapolis, 1914.

to their practical force, and so do learn and beg day and night continually. Our housekeeping is mendicant, our arts, our occupations, our marriages, our religion we have not chosen, but society has chosen for us. We are parlor soldiers. The rugged battles of fate, where strength is born, we shun.

We do not see that virtue is height and that a man or a company of men plastic and permeable to principles, by the law of nature must overpower and ride all cities, nations, kings, rich men, poets, who are not.

And in these words Emerson voices the belief which is the inspiration of social thought today:

We think our civilization is near its meridian, but we are yet only at the cock-crowing and the morning star. In our barbarous society the influence of character is in its infancy. As a political power, as the rightful lord who is to tumble all rulers from their chairs, its presence is hardly yet suspected.

It is in this recognition of moral and social truth as power that Emerson anticipates the age to come. For under the stimulus of this faith the cultural and social sciences are now rapidly developing toward a place which shall be commensurate with the immense developments of the physical sciences. And like the physical sciences, our newer concepts of social forces are cosmopolitan. In Germany, England, France, America, and elsewhere there is emerging a world social science and culture, which tho seemingly submerged at present, can only be hastened by the progress of events, particularly if international federation is achieved. As we come more clearly to see and to express the universal truths which underly our diverse societies, we shall have an international brotherhood that will lead public opinion, discipline our extravagant commercialism and militarism, and make real the world harmony which is the framework of the Universe. "Absolute right is the first governor," says Emerson, "or every government is an impure theocracy." In the world-wide community of science and culture we shall achieve a permanent Kingdom of God.

Let us now attempt the task of placing Emerson in relation to the creative thought of other historic epochs, and to the social movement of his own day. For we must agree with him that the course of history and of thought is a unity. There is one light that lighteth every man that cometh into the world, tho the prisms of the flesh give to it an infinite variety of hues. And wherever in the course of history mind has clarified into genius, it has spoken to mind across the barriers of race and time, for in the realm of the spirit there is neither Jew nor Greek, bond or free, male or female.

Creative thought proceeds from one Mind, but the form that its expression takes is largely dependent upon the environment of historic conditions.

Comparing first the genius of Emerson with the flowering of genius elsewhere, we may easily identify it as of the same spirit as that which spoke thru the Greeks. Thus it is that we find everywhere thruout Emerson's works reference to that glad early world when civilization, as it expanded westward from the oriental despotisms, was opening into a glorious day of victorious freedom. Not only is recognition given to the sensuous genius of Greek life, but also to the moral heights it reached in the dramatists, and especially in Socrates and Plato, who are akin to Emerson in their idealistic outlook. And when we turn the pages of Shakespeare, how quickly we recognize the same genius speaking from that calm center where the mind becomes pure insight. Phrases indicative of viewpoint might be paralleled; as, for example, Emerson's "Every man is a divinity in disguise, a God playing the fool," and Shakespeare's "All the world's a stage, and all the men and women merely players." Put in either form the thought is the same flash of insight piercing the masks of life which moral intuition states as the doctrine of forgiving until seventy times seven. The artistic atmosphere or intellectual flavor is also paralleled, as in the *Essay on Nature* and *As You Like It*. Indeed the central theme of Shakespeare is the same as that of Emerson; namely, a world of moral action and reaction; that is, of law.

But tho there is identity of viewpoint there is a wide divergence in expression. Emerson in an age of science is the white light on the point of flashing into the rainbow colors of the emotions, but always going back immediately into the cold light of the intellect. Shakespeare, of the Renaissance, writes in terms of living human experience and gives us the colors of the emotions in all the varied shades of a Californian garden. Most authors play on two or three emotional colors only; they are like the spectrum of a single element or the flower colors of a single plant, while Shakespeare is the universal mind in all its typical expressions. And when we look into the age that produced him, we see what it was that made his genius possible. Life was then beginning to flow forth from under the glacial weight of feudal tradition into that turbulent stream of English history which is the main creative channel to the nineteenth century; learning, commerce, travel, and a new continent dazzled with their enchanting vistas, and for one thrilling generation it seemed that freedom had been forever won. But the social skies were quickly

overcast, and the creative energy which threw out the rainbow of promise in the Shakespearean drama went underground again in the channels of religious faith as expressed in Milton and Bunyan. The great dramatist wrote his last in the days when the Puritan struggle that culminated with constitutional liberty and the machine age was beginning, and though there is no clear evidence to show that he understood the course of events, yet it is probable that his subtle mind felt the drift of things. For his later work darkens with the social tragedy of sin, as in *Hamlet*; and his last drama breathes the spirit of religious mysticism. In *Prospero* he presents a figure of the guiding personality in history, a representation of that concept of providence which the Puritan pushed to the point of fanaticism. Like the Puritan, also, he seems to have turned to America as to the future. And, to complete the chain of relationship, it is the Puritan impulse emerging from social struggle to freedom and from enforced narrowness to universality that finds expression in Emerson.

We find also in the case of Emerson that the historic setting furnishes us with the chief reason why he could preach individualism with such fervor. He was privileged to live in the days when America, like a careless youth, was beginning to feel its boundless strength and wealth, but had not yet experienced the weight of responsibility that was to be thrown upon it. "America is a poem in our eyes!" he exclaims, "its ample geography dazzles our imagination, and it will not wait long for meters." Yet he expresses an ideal which was not quite founded in reality. He was not analyst enough to see, as Lowell so clearly did, that America had planted in the New World along with the wheat of a fine idealism the tares of Old World evils. And perhaps it is well that he did not see it, for it would have clouded his genius. But it is likely that in his later years, as he watched political and economic developments, he sensed the discordant note, and that this is in part the explanation of the mental abstraction of his last days when he began to lose contact with the world, and seemed to be groping in the depths of his soul for some thread that he had missed. Thus did he pass away, his mental skies clouded, and the beauty he once had known departed. In the poetry of Walt Whitman, on whom the mantle of prophecy fell, we find the same universality and individualism, but with the artistry changing to ruggedness and the gentleness changing to strength as if for a coming struggle.

The present generation, living under the tension that preceded the destructive outburst of war, has found conditions unfavorable for the creation of a genuinely idealistic literature. The balanced

and seeing optimism which is the impetus of the highest literature would sound as insincere today as did Pope's "Whatever is, is right," in the Augustan age. Hence in this age the seeing mind gives us the plays of Ibsen, which express the sincerity and courage of scepticism. And, logically, we are witnessing a renaissance of religious faith, not in an emotional orgy but in such philosophy as that of Eucken, and in the attempted thoughtful return to the laws of society as the love of God and neighbor, which when it attains its strength should somewhat submerge the evolutionary paganism and Mammon worship which have for so long ruled the intellect. Then, as the path of progress becomes clear again, we may expect that the social mind will burst forth into the ecstasy of a great literature.

A consideration of Emerson's attitude toward religion will involve a comparison of his philosophy, in viewpoint and social import, with that of the founder of Christianity. Viewing life as he does from the standpoint of a broad scholarship, Emerson readily understands and identifies religion in all the diverse forms under which it hides. Yet he acknowledges a scale of relative values, and while often referring to Jesus in terms that link him with Socrates, Zoroaster, and Shakespeare, he asserts his primacy. "Jesus," he says, "speaks always from within, and that in a degree that transcends all others." And when we study the life and philosophy of Jesus from the standpoint of their relation to his times and to the course of history, we see that he interprets for us both the point of view of moral insight and of action.

Jesus appears at that crucial point in history when the current of Hebrew thought, which is the moral mid-stream of the ancient world, plunges into the world-wide imperialism of the Roman Empire. Coming from an unspoiled peasantry that lived in hope of the dawning universal kingdom of truth, he first is visible as a perfect flower of intuition, and his earlier sayings, as recorded in the Sermon on the Mount and the parables, present in natural simplicity the same point of view of a moral universe and a law of compensation that we have noted in Emerson, tho tinged more strongly with compassion and hope. Life seems as beautiful and perfect as the flowers of the field and the lilies of the valley. A kindly providence watches even the sparrows. Joy and sorrow balance in beatitudes to the poor and woe to the rich. Eternity compensates what this world cannot touch, as in the parable of Lazarus and Dives. Death is hallowed by the figure of the corn of wheat that falls into the

ground to die that it may bring forth fruit. And upon society rests the glory of a divine future.

But Jesus completes one gap in the philosophy of Emerson that may be suggested by quoting from the latter part of the essay on "Compensation."

There is a deeper fact in the soul than compensation, to wit, its own nature. The soul is not a compensation, but a life. The soul is. Under all this running sea of circumstance, whose waters ebb and flow with perfect balance, lies the original abyss of real being. Existence, or God, is not a relation, or a part, but the Whole. Being is the vast affirmation, excluding negation, self-balanced, and swallowing up all relations, parts and times, within itself.

In these words does Emerson recognize the fact that life is something more than thought; yet, tho his life is one of Puritanical uprightness, he never quite steps out of his books to become a throbbing personality. We are, after all, not greatly benefited by a philosophy that opens our eyes but leaves us icicles. We want one that gives us the truth, but with it the impulse to touch the common life, and to move tho it may be thru suffering in the pathway that makes for the beckoning future. And it is here that Jesus presents himself as the master mind of history; for he stepped out of philosophic calm into the common highways of life. True ever to the sensitive compass of his deepest intuitions he moved forward under the growing weight of his mission until he stood pointing accusingly to the fountain head of evil in the formalism of the priesthood and the selfishness of the rulers. Then the lightning fell, and the lamb on the altar was slain. But the life had effectively preached what philosophy can never say with convincing force. Jesus has illuminated that darkest cavern of fear, the death of shame, and has given to humanity its supreme creative impulse in the revelation of the power and beauty of holiness.

Emerson is, then, the philosopher of America's adolescence; of its growth rather than of its maturity, of its ideals rather than of its deeds. He has exprest an insight into the human soul and social life which makes his work a real contribution to social psychology, but as the spokesman of a nation's consciousness he points to a duty unfulfilled. At last the years have brought the inevitable weight of national maturity, and in the international arena America is to be tested. May its suffering and sacrifice for freedom purge it of its worship of false gods, and lead it eventually to the fulfillment of the task primarily imposed upon it of working out an effective democracy that shall be a beacon light to the nations of the earth.

The Land, the People, and the Schools of South Africa

II*

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sometime Fellow of the Royal Colonial Institute*

THE second half of the history of Education in South Africa is linked with the personality and service of the present Superintendent-General of Education, Dr. Thomas Muir, who was appointed in 1892 to succeed Dr. Langham Dale who retired on a well earned pension. Dr. Muir is a Scotsman and was serving as the Head of the School of Education of Glasgow University when the Government of South Africa appointed him to his present position. Among the honors which have fallen to him for the noble service he has rendered his adopted country and the cause of education, we may name his election to the Royal Society, F.R.S., his admission to the Order of St. Michael and St. George, C.M.G., his appointment to the University of the Cape as the Pro-Chancellor and the various university distinctions which have been bestowed upon him. He wears them all with humility and never allows them to be referred to except as evidences of the progress of education in his particular sphere. It is not too much to say that Dr. Muir is one of the greatest educationalists in the British Empire. He has a perfect genius for his work, a love for young life, and an implacable tenacity of purpose. Of a retiring disposition he yet has the master spirit and the master hand. He has painted out many ugly blots and re-touched many weak spots during his service in South Africa, and every effort he has made has improved the picture and beautified the prospect. His first service was a careful and prolonged examination of the department, then of the local conditions, and finally of the peoples, opportunities, and facilities. As the result of his investigation he outlined the plans of work which reached on beyond the present achievement. Since the year of his appointment all education in South Africa has felt the influence of this man, whose memory will be ever held in highest regard.

The position of Superintendent-General of Education is probably peculiar to South Africa. He is at the head of all the systems

* Readers of the Quarterly Journal will find the first part of Dr. Colles' study of South African conditions in the issue of Jan., 1917, pp. 184-194.

of education in the country that receive any financial help from the State for educational work. He is appointed for life and is subject only to the legislative authority. The Minister of Education is elected by the people with his party, and retains office during the life of his party in Parliament. But the Superintendent-General continues his service while parties come and go. Of course his path is not always one of roses. He has strenuous battles with the government on the one hand who want all the work done without cost, and with the school boards and staffs on the other hand who are always asking for more money for salaries and equipment. We, in this country, have problems in our individual states; what must be the problems that confront one who is at the head of all educational work from the kindergarten to the university in an area as big as more than thirty of our states! with five legislative authorities and a multitude of nationalities from jet black to white!! As will be seen if the Superintendent were subject to the changing political parties and the latest political faddist in mental phenomena, it would be impossible for him to get anywhere. Concentration, co-ordination, and centralization are the keynotes to the efficiency scheme of educational life in South Africa. The average Minister of Education is only too glad to have such an expert at his elbow to keep him in the paths of sure progress and, as a matter of fact, each such Minister is only too willing to do his best in order to promote the political effectiveness of his party. The present Superintendent has developed co-ordinated education, beginning with the kindergarten and finishing with the post-graduate work in the university. To make the system work effectively has been his chief ambition. Dr. Muir has added to the grades, developed the high schools, and linked all the work in one harmonious system. In this he has been influenced by the American method rather than by the British, with the result that it is as easy for a child to proceed from grade to high school and from high school to college there as here.

The Superintendent-General is also responsible for the present system of examinations of which that for the grade schools is especially worthy of note. The long distances to be covered when traveling, the lack of swift means of communication owing to the scarcity of railroads, the need for co-ordinated teaching, the wisdom of personal inspection of buildings and property, and many other matters have made it necessary to adopt a method of inspection which will creditably justify the work of the department and encourage the staff and the scholars of the school. Regular examinations therefore are taken by the District Inspector whose position is permanent

and held upon good behavior till the age for retiring arrives. The fixing of the pension value is ratiocinative, and is regulated by the length of service from the age of sixty-five backwards, the class in which the work has been done and the average salary received.

In accordance with the State requirements an examination (individual) of the scholars in every class from Grade I. to Grade VII. is conducted by the Inspector at the annual examination of every state-aided school. This examination is partly written and partly oral. Most importance in the examination is attached to reading, diction, composition, arithmetic, and general intelligence. Strength in these will compensate for any weakness in the mere technicalities of grammar or the less important details of topographical geography. This individual examination in the grades relieves the local teacher or the principal of the responsibility of promoting or retarding the child, and at the same time acts as a spur to the teacher to raise such enthusiasm among the pupils as will help them to overcome trivial obstacles with a view to gaining the higher grade. It is not an unmixed blessing to have the teacher examined in this practical way with regard to the quality of his work especially in view of the fact that the teacher is engaged with a view to a permanency and not merely for a limited time. Any slackness in the teacher or the methodology is quickly discerned by the competent and wide-awake inspector and at once corrected. It is more satisfactory also to the parent to know that the merits of the child's work have been determined by tests applied in an expert and independent review. There are pitfalls in every service but the inspector is there to help and to advise.

In the Cape Province there is the closest connection between the primary and the secondary school courses—a characteristic feature derived from the Scottish origin of the educational system. High schools are usually larger schools with both primary and secondary departments adequately equipt and giving a five to seven-year course of secondary education beyond the fifth grade. Up to that grade all the pupils follow the same course, but beyond that there are several courses open to the students altho most of the pupils choose the course of secondary education of the ordinary type. The co-ordinated system of education permits the transfer of the pupil from one school to another in any part of the sub-continent without any break in the work, and with the fullest opportunity of continuity. The schools are classified under three heads:

Third Class Schools work as a rule up to the fifth grade.

Second Class Schools are organized to give instruction up to the eighth grade and to provide also for at least two extra subjects. In the small cities the two extra subjects chosen are usually Latin and mathematics, these of course preparing the pupil for continuation in the high school.

First Class Schools must be prepared to teach up to the university matriculation standard, and if the educational department is satisfied as to the staff, building, and equipment then the School may be graded as a high school.

In order to visualize the school life of the Sunny Southern Land we have adopted the historical-empirical method and the description of secondary education also follows that plan. Before leaving the former section, however, it will be well to state that the classification of schools is the work of three inspectors who sit as a committee to consider all questions relating to the grading of schools and whose findings are duly reported to the Superintendent-General of Education. In 1912 there were, in the Cape Province alone, 1,391 Third Class Schools, the greater number being rural schools, 98 Second Class Schools, and 94 First Class Schools of which 45 were graded as high schools.

SECONDARY EDUCATION

In the year 1899 a detailed four-year high school course was fitted into the elementary course, permitting the student after completing the work in the fifth grade to pursue a course of studies outlined mainly for the purpose of preparing him to matriculate in the University during the last year in school. In 1912 a further year was added to the course, and now the total course from the kindergarten to the completion of the high school requires twelve years. The usual course taken in the high school includes:—English, Dutch, Latin, history, geography, mathematics, science, drawing, woodwork or (in case of girls) needlework. Science is compulsory and the teaching of it must be both observational and experimental, as well as theoretical. Almost all the high schools for girls take botany for their science subject while a certain number of the boys' schools take chemistry or physics or both. Woodwork or manual training for the boys and needlework for the girls are compulsory. It was not until 1904 that domestic science with cookery was included in the school course, but since their introduction they have grown in favor every year. Literature and history are allowed as alternatives for mathematics and Latin, but the practical courses receive the largest measure of support.

A great amount of freedom is allowed in the choice of languages. In most of the girls' schools French is the favorite language. High Dutch is extensively taught thruout the whole of the country and German is a favorite subject in the German settlements, and owing to its similarity to the Dutch is greatly encouraged. In the high schools and normal institutions where Kafir is the family language a great deal of liberty is allowed in the use of English, Dutch, and Kafir. It follows, then, that most of the children of South Africa are familiar with more than one language, and use more than one in their daily life. The language and literature of these different languages are faithfully taught and with marked educational success. In 1910 a Commercial Course was placed in the schools and this course includes bookkeeping, commercial correspondence, shorthand, and typewriting.

Art and music also have their place in the curriculum and the educational department has done much to encourage this departmental work. Music teachers in the state-aided schools are placed on the same footing as the regular staff. If the teacher is adequately trained and certificated the department of education will contribute to the salary of the music teacher as to the salaries of others. The requirements of the music teacher are the equivalent of the Bachelor of Music degree, and most of the teachers are trained in the conservatories and academies of Europe. Competent examination is given by professors of music from European schools who visit South Africa at the invitation of the education department. It rarely happens that the same professor visits more than once. Vocal and instrumental music are taught in the schools, and in some cases the pupils decide to specialize in music, and are usually sufficiently well enough prepared to enter upon the four-year course for the degree immediately upon leaving high school.

On the 1st of October, 1913, an ordinance was passed and proclaimed as law which placed religious instruction in high schools upon a new basis. Schools are now opened daily with the Lord's Prayer and with the reading of a portion of Scripture. Religious instruction according to a prescribed syllabus of Scripture lessons is given daily in all classes up to and including the fourth grade for a period of not less than a quarter and not more than half an hour; and above the fourth, for a period not exceeding half an hour upon two days of every week during school hours and as far as possible at the commencement of the school day. The rights of parents and guardians who have conscientious objections to such instruction are carefully guarded, as are also the conscientious objections of any of the teachers. Where the majority of the parents request in writing

that a prescribed catechism shall be taught it is the duty of the school board to provide special facilities for such instruction by obtaining adequate and qualified instructors from among the local clergy.

A good deal of emphasis is laid upon the subject of mathematics. Out of a statutory week of 25 hours of high-school work $7\frac{1}{2}$ hours must be given to mathematics. This course includes algebra, arithmetic, geometry, and elementary trigonometry. The course is planned on modern lines, and the educational department recommends no specific text-books, but suggests that proofs of theorems should be based as much as possible on first principles. Where the student is taking the final examination at the high school preparatory to entering the University the papers set for the examination are of a rather difficult character even for the pass examination, as a considerable number of the questions consist of fairly stiff riders and problems.

The final examination in the high-school course is conducted under the auspices of the University. This examination falls into two principal departments, the first for those students who are completing their school life at this time and the second for those who desire credit for entrance to the University. The successful students in the former receive what is called the School Higher Certificate or the School Leaving Certificate, and in the latter receive the Matriculation Certificate. Both these certificates are issued by the University, both are of equal educational worth, both are highly prized by the recipients. After many years of experimentation the University Council has banished competitive examinations and the lists of successful candidates for the certificates are published in the Educational Gazette in alphabetical order. The courses of study aim at a well-balanced education, and the examiners are mainly college professors who are not in personal touch with the pupils. Altho there are defects in the system, yet on the whole such method of examination provides for a scholarly, impartial, and independent result. Sometimes the papers set have been too high for the average student, but the plan is to make the examination a real test of ability and training and to keep the standard as high as possible.

There are no co-educational high schools in South Africa, altho co-education is permitted in the various colleges of the University. The total number of students in the high-school classes for 1899 was 1,447. This number was increased in 1913 to a total of 5,696 with a further addition in the First Class Schools of 900. While the final examination is conducted under the auspices of the University, high school inspectors are employed by the education department to supervise all the work in the schools, to classify and advance the pupils and, in co-operation with those directly in charge of the

schools, to plan all the work, give careful supervision to the equipment, and to keep the department informed regarding both teachers and scholars.

The physical side of life is not neglected and, as might be expected in a land where the sun shines almost in perpetuity, outdoor games for all the year are encouraged for both boys and girls. The boys' schools usually have a regular instructor engaged for physical exercises and drill, the latter being semi-military in character. The games of cricket for the summer and football for the winter are greatly enlivened by challenge matches and championship contests. The girls' schools also are provided with trained physical instructors, and their outdoor sports are usually hockey for the winter and tennis for the summer. Work in the gymnasium is compulsory for both boys and girls with calisthenics, Swedish drill, boxing, swimming, and other physical exercises. This work is taken each year during the high-school course.

The whole system of education, spiritual, moral, mental, and physical is organized with a view to making the boys strong in themselves and willing defenders of the weak, and to making the girls capable and graceful companions of the coming men. The boy is expected to grow into a man who will shoulder family responsibilities and take his place in the nation as the head of a family. The girl is expected to become the fitting and gracious companion of such a man. The South African is a reserved and sometimes an unapproachable biped, but there is some good stuff in him!

DEPARTMENTAL ORGANIZATION

All public schools are under the central authority of the education department of the Union Government (corresponding to our Federal Government) and the Superintendent-General of Education presides over all thru the central office. The work of this office has been differentiated. There is a branch for recording educational statistics and reports, a second for the examination and certification of teachers, a third for school equipment and teaching apparatus with applications for special grants, a fourth for school sites, plans and buildings, a fifth for membership finance and general working of school Boards, and a sixth for the organization and control of railway schools. This last branch is one of the special features of school administration in South Africa. Railroads are owned and controlled and worked by the government and are put at the disposal of the education department for carrying children to central places for instruction. The cities are usually 150 miles apart, and the villages about 50 miles apart, so that the railway renders vital

service to the nation in thus providing for the children of the railroad service and also for others who are living in isolated places. No charge is made of course for bringing the children on the railroad to the appointed school, and it is of interest to note that all students in government-aided school, whether public or denominational, are permitted to travel on the railroad at all times at specially low rates. To facilitate this branch of the work an educational survey was made in 1893 with the object of showing how the educational wants of any neglected division of the country could be best ascertained. After five years' work the survey was completed, the resulting twenty reports with illustrative maps being duly published for the benefit of the divisions concerned.

The office library of works on education was formed in 1895 and has become an extensive and valuable part of the department. Where ordinary agencies fail assistance is given in the preparation and publication of text-books. The first to receive departmental aid was Dr. Marloth's Botany. One of the series received marked approval in Europe, and Germany spoke of *The Advanced South African Atlas* as a model work. The *Education Gazette* was started in 1901 to give teachers and school managers early information on matters of departmental interest. The *Gazette* has grown steadily in size and value and is now recognized as an educational guide of considerable importance. A building-loan scheme was put in operation in 1894 and simultaneously with its application has proceeded the nationalization of school property.

COMPULSORY EDUCATION

When the school boards were inaugurated in 1905 they were granted the power after the first year of work to pass a resolution making school attendance compulsory for all European children between the ages of 7 and 14. For three years nothing was done in this regard except in one school area. However, in 1909 the matter was taken up more energetically both by the school boards and the department with the result that in that year out of a total of 129 school boards 52 had adopted the principle of compulsory attendance. There is no doubt that very soon compulsory attendance will be universal in South Africa. Before 1892 it was permissible for blacks and whites to attend the same school and even the same classes. In 1909 a different system was ordered and separation between blacks and whites definitely decided. To accomplish this without injustice to either section of the people a new class of school called the Third Class Denominational School (Church A. 3) was established, and this put an end to a system that had caused very considerable annoy-

ance both to the people and the educational authorities. Under the old voluntary system of school committees where each member of the committee became a personal guarantor for teachers' salaries and general maintenance many abuses had been rife, but the new school boards elected by the people and backed by rateable levies and departmental grants are under the scrutiny of the people and the department. Under the old system the principal of a second-class public school once reported to the department, "My salary is----- subject to the following arrangement with the managers: should the school fees be insufficient to make up the moiety of my salary, I will pay for five scholars!!!" Another teacher reported, "A teacher has to buy his corn, sheep, etc., from one of the managers; he receives a poor article and in addition is frequently overcharged to the extent of 15 to 20 per cent."

POSITION OF TEACHERS

The importance of having properly trained teachers has been steadily kept in view. A plan has been made and already partly carried out to have a series of training schools and colleges to prepare those who are desirous of entering the profession. High-school teachers must be graduates of some reputable university or college and possess the necessary teacher's certificate. The inducements in the Cape for young men and young women of ability to enter the teaching profession are much greater than in the years preceding the regime of Dr. Muir. No teacher in a public school can now be dismissed without the sanction of the education department. Teachers' salaries have been materially increased and in some cases more than doubled. Vacation courses have been found of great service in preparation for the profession, and year by year the supply of teachers adequately prepared has steadily grown until the supply has become equal to the demand. The following statement of salaries paid to heads of different classes of schools represents the growth of importance of the profession: (The terms principal, head-master and superintendent are synonymous.)

	1892	1909
Principal of AI Boys School - - -	\$2,000	\$3,000
AI Girls School - - -	1,000	1,800
AII School - - -	1,000	2,250
AIII School - - -	600	1,500

Dr. Muir well says, "Indeed at the present day the teaching profession in Cape Colony is in a better position, both as regards remuneration and social status, than it is in most English-speaking countries."

The Good Service Allowance which carries pension rights is open to all classes of teachers and is fixed on a most liberal basis of computation.

TRAINING INSTITUTIONS

Seven colleges and schools provide for the training of the European teacher. These are: 1. The Normal College, Capetown; 2. The Training College, Capetown; 3. Training College, Wellington; 4. Training College, Grahamstown; 5. Training Department, Victoria College, Stellenbosch; 6. Training School, Robertson, and 7. Training School, Paarl.

For the training of the Colored and Native teachers the various missionary societies in the country have provided institutions of a high standard, all of which are recognized by the department and receive grants for the support of the work. Many of the missionary instructors in these institutions have attained a very high educational position, and it is commonly said in South Africa that the Colored and Native peoples are better served educationally than the whites. Most of the missionaries are men and women of sincere devotion and their influence is both moral and intellectual. Two additional subjects are taken in these missionary schools, one a practical course in hygiene and the other the study of the native or home language.

Institutions at the following places represent the Dutch Reformed, the Presbyterian, Methodist, Congregationalist, and the Episcopalian churches: Bensonvale, Blythwood, Buntingville, Clarkebury, Emgwali, Engcobo, Healdtown, Lovedale, St. Matthew's, Shawbury, Umtata, Zonnebloem, and Genedenal. In addition to these there are training departments in connection with the girls high schools at Stellenbosch, Graaf-Reinet, Cradock, Oudtshoorn, and Kimberley, and smaller but still considerable departments at Worcester, King William's Town, Beaufort West, and Uitenhage. Other schools have classes of pupil-teachers, and these classes vary from one to twenty in number.

The same examinations are given in the Colored and Native schools as in the European, and the same demands are made in respect to residence and experience. There are no Jim Crow laws in education. Three different certificates are given for teachers who take up the usual work of the profession. The First Class Certificate is granted to a graduate from a reputable college or university after evidence that the applicant has special fitness for the work. The Second Class Certificate is granted to those who have passed the matriculation examination and have at least one year's professional work in college or training school. The Third Class Certificate is

granted to the applicant who has passed the seventh grade and has the additional work of three years in a normal or training school. Special certificates are given in a variety of subjects including art, music, manual training, domestic science, physical instruction, and science. When a teacher is appointed to a school he becomes a part of the huge educational machinery of the country, and he may move from one part of the country to another without interrupting his service or hindering his promotion. His certificate determines the class of school in which he may teach, but he is encouraged to gain a higher certificate if he possess only a lower, and to rise in his profession from the position of a master to that of a principal.

INSPECTORS

The majority of the inspectors have been promoted from the headship of a high school, except in the case of the special inspectors as those in art, music, etc. These men and women are the eyes of the education department. Their regular reports on the schools in their district tell of the doings of the board, the service of the various staffs, the condition of the buildings and equipment and the progress made in the classes and by the pupils. This force of inspectors consists of well-trained and experienced officials who are familiar with the work in the schools and are heartily in sympathy with the teaching staff. The appointment carries with it many privileges, and in some cases inspectors are allowed to act as examiners to the University. The salaries with allowances sometimes reach the sum of \$5,000 per annum, and in all cases are in advance of the salaries allowed to the principals. One class of inspectors is in charge of all grade schools, a second class of the high schools, and a third class of all the special courses. A comparative table gives the schools, their classes and progress:

	1892	1909
High Schools - - - - -		41
First Class Schools - - - - -	56	50
Second Class Schools - - - - -	76	101
Third Class Schools - - - - -	337	841
Church A 3. Schools - - - - -		35
District Boarding Schools - - - - -	12	4
Private Farm Schools ("Little Red Schoolhouse")	270	844
Poor Schools - - - - -	42	275
Evening Schools - - - - -		19
Mission Schools - - - - -	478	693
Aborigines Schools - - - - -	273	795
Totals - - - - -	1,544	3,698

FINANCIAL SUPPORT

All the educational institutions of the country receive dual support. The denominational schools receive help from their respective missionary societies, and grants from the State for the educational work. The public schools levy taxes to the amount of one-half the required sum for the year's work and the State provides the other half from the general funds. The advantage of this system is that the government thru the education department keeps a firm hand upon all the school work and yet encourages and stimulates local interest. The proportion paid by the State is now on the increase and in fact in 1912 the proportion was something like two to one. When new teachers are to be engaged, or improvements are to be made in the equipment the local board must apply to the department. An inspector is sent to the field to meet the board and to gather all necessary information. His report is sent to the department and if passed the necessary allowance is made in the next budget to be presented to the legislature. A strict accounting must be given of every penny received and spent and where irregularities are discovered penalties may be enforced.

THE UNIVERSITY

There is only one institution in the whole of South Africa with power to confer university degrees. Before the University of the Cape of Good Hope was incorporated by special act of Parliament in 1873, the work of examination was entrusted to a Board of Public Examiners. In the year 1879 a Royal Charter was granted by Queen Victoria declaring that the degrees to be conferred by the University should be entitled to the same rank, precedence and consideration as the degrees of any University of the United Kingdom of Great Britain and Ireland. Five colleges of university rank are affiliated with the University in Cape Colony, one in the Free State, the famous School of Mines in the Transvaal, and other schools in other provinces. All examinations are conducted under the supervision of the University Council and all diplomas and certificates are issued by the University. The work for the various degrees may be taken in the affiliated colleges and the students of these colleges are classed as internal students of the University. The syllabuses of the University examinations are drawn up by the University Council the President of which is the Pro-Chancellor, Dr. Muir. The present King of Great Britain accepted the position of Chancellor of the University from which he holds the degree of LL.D. The oldest University College in the country is the South African College

situated in Cape Town. It is more than eighty years old and from it most of South Africa's prominent men have graduated. The Normal Colleges are not classed as University Colleges but under a recent order an arrangement has been made by which a student in the Normal may take work in conjunction with the University course and thus secure his teacher's diploma and the university degree. The College in Cape Town has been recognized by the Union Government as a Training College for the Union Government Teachers First Class Professional certificate. The T1 Certificate as it is called is required by all high-school and university teachers and professors. To help needy and deserving students various scholarships have been founded in the different colleges by city corporations, private donors, and the general public. The blue-ribbon scholarship is a travelling scholarship granted to the student who attains to the first place in the B. A. final examination providing he is willing to accept it. The scholarship is worth \$1,500 per annum for three years and enables the holder to enter some university in Europe or America for graduate work. He must report progress to the University from time to time, and at the end of three years surrender the scholarship to the next candidate. At the present time the University confers the degrees of Doctor of Literature, Doctor of Science, and Doctor of Laws, Master of Arts and Master of Science, Bachelor of Divinity, Bachelor of Arts in Literature or Science, Bachelor of Science in Agriculture, Engineering, Mining and Pure Science, Bachelor of Laws, and grants Certificates in Law, Land-Surveying, Mining, and Music. In the educational report to the legislature for the year 1911, the following statement appears: "To many people it will come as a surprise to learn that the Cape has a larger proportion of its population pursuing a college course, i.e., a course beyond matriculation than even the most advanced parts of the United States. Further, our Cape students who go abroad do well and make themselves respected. The average Cape student abroad appears therefore to be better than the average student to be found there." Statistics are given in support of this statement from the records of universities in Scotland, England, Holland, Germany, and America.

The Rhodes Scholarships are the product of South Africa and the gift of that famous British South African to the world. South African money coupled with Oxford scholarship made the gift possible. Rhodes was a great Empire-builder during his life time and as the years go by he will be re-discovered as continuing in the educational world the counterpart of the great work he did in the physical world. The South African Rhodes Scholarships are offered upon peculiar conditions, differing from those holding in any other

country. The four scholarships given annually are restricted to pupils in only four of the South African schools, and it frequently happens that the scholarships are therefore awarded to students who have taken only a second or even a third class in the University examination. This lowers the average of the Cape as compared with other nations. One striking advance in University work is found in the development of the School of Mines and the College of Agriculture. Fifteen years ago nearly all the mining engineers in South Africa came from the United States, but now nearly all the men on the mines are graduates of the South African University. Farmers' sons now take the courses in the Agricultural College, the entrance examination for which is the same as for all the other colleges, and when the work is complete they may graduate with a degree which is the equal of the B. A. Where any missionary society or church has an institution doing work in higher education, as for the B. D. degree, grants are given by the department as to the other colleges. The government has no interest as such in denominational work, but it has an interest in the education of its people, and will pay for educational work well done. In order that the standard of all work may be maintained the government refuses to license anyone to confer degrees or to grant certificates, corporate or individual. That is the prerogative of the State acting thru the Education Department, the University Council, and the Senate.

It will be said, of course, that the comparatively small population of South Africa makes possible what larger peoples could not attempt. The answer to that is that usually the smaller peoples are far more individualistic and pugnacious in standing for their parochial rights unmindful of the vast possibilities of growth, contact, and the divine fellowship of nations. Yet we have here an experimentation upon a liberal scale of a method of education which bids fair to take its place speedily with the most cultured and advanced, and with such vitality and momentum as to suggest that it will eclipse the older systems and take a rank apart by itself to which the older systems may need later to conform. For it must be remembered that South Africa is a new land in the modern sense of the word. It is not many years since it came into permanent contact with the outside forces. With our present-day facilities for travel the travel-loving Africander, and he does love to travel, has brought the life of nations into the life of his own land and so the Africander is finding a place among the peoples of the Old and the New Worlds. The world then has become an open door to this son of the sun, and having the means at his disposal he marches

thru the world with an open mind to enrich himself and his State with the new knowledge springing up everywhere. Germany, Holland, Britain, and America in particular, have opened their doors to him and he has not been slow to avail himself of the best he can find in these lands. Having made and appropriated the discovery he returns to his native soil to reconsider his system of education, to reconstruct here and there, to banish some things, to stretch others and in short to find a fitting place in his unified system for every good new thing the world has given him. South Africa is in a sense a *nation at school* and putting into her own school system all the latest devices, helps, advantages, courses, and enthusiasms it will stand. Sometimes the system is strained almost to the breaking point, but the natural geniality of the people and a firm determination to tolerate only the best, gives the system the necessary and sufficient elasticity and adaptability.

“FREE”

VERA KELSEY,

Instructor in English, University of North Dakota

Characters

John Mann—*a brutal, greedy farmer*

Mary Mann—*the wife whose spirit he has broken*

Ruth Mann—*the daughter who refused to share the same fate*

Tim—*the fate*

SCENE I

THE SCENE is laid about the kitchen door at the side of a ramshackle farm house. The yard is littered with parts of old wagons and machinery. Beside the door stands a bench, upon and about which are several milk pails. A muddy, swirling river runs by the front of the house; parallel with it is the driveway to the barns. A narrow path from the back door also leads to the barns.

It is late afternoon of a windy, autumn day. The sun, sinking beyond the vast fields of stubble and freshly plowed ground, gleams thru the dust clouds like an angry and inflamed eye.

A moment after the curtain rises, Ruth Mann comes heavily up the path. She is blown and dirty, ungainly, and roughly dressed. Her hands and feet are large and awkward as a man's. A face appears at the kitchen window. Then Mary Mann, timid and colorless, hurries out with kettle of hot water and begins to scald milk pails.

MARY

“Plowin’ done?”

RUTH

“No.”

Silence

MARY

Looks at her anxiously

“But Dad said—”

RUTH

Dully

“Yes—I know.”

MARY

“You—you ain’t sick, Ruth?”

RUTH

"No, I ain't sick, Ma." (*Looks up*) "Just thinkin', that's all."
 (*Silent a moment*) "Ma, what's the difference between us and animals?"

MARY

"Why—why Ruth—"

RUTH

"There ain't no difference. Look at our horses—we work and eat an' sleep same's they do. They get more care, that's all. An', Ma, when we get so's we can't work, don't you ever think but what we won't be turned out like old Jennie—to die."

MARY

"You mustn't think such things, Ruth."

RUTH

"How can I help it? It's true, ain't it? That's the reason I came in early. I got to thinkin' as I followed the horses up one furrow and down the next that we're just like them. An' I decided I was goin' to be different."

(*Her eyes grow starry. She leans forward, gazing up eagerly at Mary.*)

"Do you know what's tonight?"

MARY

"No-o."

RUTH

Rises in her intentness

"It's the night when the full moon comes swinging up over them trees, turnin' everythin' to gold—the stubble and the river—(*Softly*)—an' when it comes up so gentle like, it just calls somethin' in me—"

MARY

With a frightened cry

"Ruth!—Oh, my girl!"

RUTH

Looks at her for a moment puzzled; then she pats Mary's shoulder awkwardly.

"I'm all right, Ma. Don't be scared. There don't seem to be nobody to understand, that's all. I just thought, maybe—"

(*Breaks off hopelessly*)

"Anybody bin here?"

MARY

"Tim—haulin' sand."

(Mary looks up at Ruth, whose face has become set, and tries to speak in a conversational tone)

"Seems if he was goin' to have a fine house. No mud floor in his cellar, he says, but hard sand. An' he's goin' to have a real cistern, too, with a pump."

Ruth remains silent

MARY

"Can't you think about him a little, Ruth? Pa wants—"

RUTH

Turning in a flash

"That's it! That's it! Pa wants it. He'd mate me like he does his cattle, to help himself. Then the two farms 'ud be joined and he c'ud tell Tim how to raise his hogs—as if that wasn't the only thing Tim knows now. But do you want it, Ma, reely? Tim's just like Dad. Do you want me to live a life like yours?"

Mary is silent; she turns her face from Ruth

RUTH

"Think of your life, Ma. I—I've watched you bein' crushed day after day until you ain't got no more spirit than—than Shep here. He's learned to go for the cows and keep out of sight when he ain't no use. That's like you are. That's like what I'd be!—Animals, that's what we are. An' now you'd marry me to Tim. Marry.—"

(She makes a gesture of despair—her voice rises)

"—to fetch an' carry when he wants somethin'—to keep out of his way when he don't."

Mary puts her hand on Ruth's arm to quiet her. Ruth brushes it off

RUTH

"To raise his hogs like children, and his children like hogs!"

(She laughs shrilly, picks up the milk pails and starts down the path; turns back—)

"But I ain't goin' to be no hog-raiser! I—I'm goin' to be FREE!"
(Exit)

Mary stands gazing after Ruth, her expression and attitude gradually becoming more hopeless.

John Mann enters from front road. Mary jumps, startled at the sound of his heavy footsteps behind her.

JOHN

Looking down path

"That Ruth?"

MARY

"Yes."

JOHN

"What's she laughin' at?"

MARY

"Nothin'—just jokin'."

JOHN

"Plowin' done?"

MARY

"Not—quite."

JOHN

"Not quite—and jokin'. I'll learn her it ain't no joke."

MARY

Breaking in hurriedly

"Tim was here today."

JOHN

"What for?"

MARY

"Haulin' sand. He says you'd ought to put a fence in along the road there in front—the bank's dangerous. It's most a straight fall to the river now."

JOHN

Laughs

"Guess I know when to put up a fence. Say anythin' else?"

MARY

"Yes. He's comin' over tonight; says you ast him."

JOHN

"Saw him in town last night. He says Ruth won't look at him. I'm goin' to settle the whole thing tonight."

MARY

Timidly

"But, Dad, Ruth don't like him!"

JOHN

Looking at her in amazement

"What's that got to do with it? Think I'm goin' to support her all her life?"

MARY

"She does the work of two men."

JOHN

"Say, what's got into you? You act as if you didn't think it was lucky that some man wants her at all. Follerin' the moon the way she does the whole country thinks she's—"

MARY

Shrinking away from him

"Don't, Dad, don't!"

JOHN

Deliberately

"—crazy! And whose fault is it? Yours, an' you know it. You encourage her—make her think she's abused. But there'll be no moon gazin' nor moon follerin' when she's married to Tim. An' mind you don't tell him she come in early tonight. She'll marry Tim, and that's the end on it."

Enters kitchen, slamming door

Mary sinks down on step. Hopelessness, failure, are written in every line of her shrinking form. Shep slinks around the corner of the house and puts his head on her hand. She starts to push him away but draws him back. Motionless, she sits staring at cringing dog.

SCENE II

The same setting as Scene I, but some time later. The first glow of the moon is appearing over the trees at the right. The wind is rising, and increases thruout the scene. Ruth's emotion seems to rise and fall with it.

Ruth comes slowly out of kitchen door, shuts it, and leans against it, closing her eyes. Her weary form and face show the result of physical and mental struggle. When she opens her eyes, the first glint of moon is appearing.

RUTH

"I can't go tonight, moon. He'll be watchin'. He says I got to marry, and the man is comin' to see about it.—Oh, it ain't fair—it ain't fair!—An' we were goin' to the city, weren't we—to see pretty ladies and dresses and homes."

(She looks down at her own dress and sees her roughened hands. She holds them out in front of her and looks at them, then up at the moon.)

"Look at them—look at them, red and big as a man's. Maybe it's a good thing I can't go with you—you'd be ashamed of me. But you know it ain't my fault—you know I ain't had a chance. I ain't had clothes nor school to make me look decent or talk decent. I ain't had nothin', moon."

(She sinks down on step and is silent. At times her hands work nervously.)

"An' now they're goin' to marry me—an' to Tim! I cu'd stand everythin' else but that. I'm willin' to work, I've done it all my life, but—I can't do this—I can't! I can't! He ain't a man. He's a hog-raiser. An' that's what I'd be—that's what I'd be."

(She buries her head in her lap; her hands clench; her body writhes in mental agony. Suddenly she looks up; hope flashes across her face.)

"Take me with you, moon. Give me my chance. I know now that the other times were only foolin', you didn't really take me. I just followed. I always was brung back and people said as I was crazy. They didn't understand, that's all. I was just lookin' for my chance. But take me with you, really—out of it all!"

(Carried away by the idea, she slips from the step to her knees, her arms stretched out to the moon.)

"Take me away. Oh, take me away and give me my chance!"

She remains with arms outstretched, gazing eagerly as if awaiting some sign. At length her arms drop, but her eyes never leave the moon. Gradually hope leaves her face. She sinks lower and lower, then falls face downward upon the ground.

The moon swings clear of the trees, throwing a broad shaft of light from the door to the river. At the same moment the wind becomes absolutely still.

Slowly Ruth sits up. Her face, at first devoid of all expression, becomes radiant. Slowly she rises; wonderingly her eyes trace the broad moon path to the river. She turns to the moon as to a friend and smiling, follows the path.

As she reaches the road Tim arrives at the same spot, but draws back at sight of Ruth with her weird, fixed smile. Fascinated, he watches her cross the road and stand upon the edge of the bank

TIM

Advancing a step

"Ruth!"

Suddenly comes a shrill, taunting scream of wind, then a shriek of maniac laughter. Ruth steps forward. Tim stands dazed, look-

ing at the spot where she stood. He turns toward the house. Then his dull face shows comprehension; he dashes for the kitchen door and pulls it open.

TIM

"Ruth! Ruth! The river!"

John and Mary appear in doorway. John follows Tim to the river bank. Mary sinks down on the step in much the same attitude as at the close of Scene I. Gradually she stands erect. Hopelessness is reflected no longer in face or bearing. Her shoulders go back; her eyes shine in the moonlight.

MARY

"She's Free!"

Book Reviews

ECONOMICS OF BUSINESS: FRANK L. McVEY, President of the University of North Dakota. No. 2 in the Series on Modern Business, Joseph French Johnson, Editor. Alexander Hamilton Institute, New York, 1917. XVI+346 pp. Price, \$1.75.

One of the most distressing things that we who are interested in business training have to encounter is the impatience of the average business man or student in business courses with what they call "theory." The result of this attitude on their part is reflected all too clearly in some of the unsound economics preached by editors and commercial associations in connection with our present effort to get the nation on a war basis. Any economist, then, who can get the business man's point of view and set forth the fundamental principles underlying economic activity in such a way as to hold his attention and show him the relation between these underlying principles and his own interests is well in the way to become a national benefactor. And it seems to me that Dr. McVey has come much nearer to accomplishing this than any one else who has yet attempted the task.

In this little volume, Dr. McVey covers substantially the same field that is covered by any of the modern writers on general economics, and embodies in his discussions, it seems to me, the sanest of modern theory. But his exposition of fundamentals, in addition to being thoroly sound, has certain other merits of great significance in a work of this type. Not the least of these is that in introducing the reader to the rather formidable terminology carefully built up by professional economists, seemingly to prevent the layman's breaking in, his definitions are clear-cut, stript of all unnecessary verbiage, and couched in terms which mean something to the intelligent reader who has had no formal training in economics. Also, in enunciating the fundamental principles, the author's emphasis and application is very strongly on the side of the practical and the concrete. No proposition advanced is allowed to remain in the reader's mind as hazy and abstruse theory, but each one is nailed down, so to speak, by setting forth its relation to present-day conditions.

I cannot too highly commend the aptness of the illustrations, drawn from present-day conditions. It must surely increase the reader's confidence in his author to realize that he is not attempting to expound some out-worn doctrine which has no present application,

but is writing with a clear view of the economic organization of society as it now exists. This merit is perhaps most conspicuously present in the chapters on Money; Credit; and Money, Credit, and Prices; and again in the chapter on International Trade and Foreign Exchange, and the one on Commercial Policy. These five chapters, Numbered VIII to XII, inclusive, might well be read with a regard to present conditions, not only by every business man, but by every other intelligent citizen. The author not only brings the working of certain tendencies absolutely down to date, but also points out how they are likely to operate during the next few years—always a risky thing to do, but worth while even if it does go wrong.

This work, then, is not only sound economics, but has the point of view and the emphasis that will make it valuable and give it an appeal to the student of business, who has little time for abstract theory of any kind. The discussions are brief, and while they will not make of the reader a profound economist, they are calculated to get a hearing, and introduce the "hard-headed" business man to a body of fundamental principles, a knowledge of which will in the long run cause his "hard-headedness" to be much more effective.

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SOCIAL ENVIRONMENT: GEORGE R. DAVIES, Assistant Professor of History and Sociology, University of North Dakota. National Social Science Series, Frank L. McVey, Editor. A. C. McClurg and Company, Chicago, 1917. VIII+150 pp. Price, 50c.

The author's thesis is to show the limitations of the biological interpretation of the principles of evolution as applied to human society. Society is "primarily a spiritual rather than a biological reality." Of course, this is not a new conception. It is indeed the working aim of the leading sociologists of the present time. However, the author has made a contribution of merit to the literature treating this central problem of social evolution. His diction is forceful and his general argument is convincing.

After making a clear statement of the biological point of view, the development of the theory of evolution is traced thru English thought and social practise. The industrial revolution, the doctrine of *laissez faire*, and the theory of Malthus preceded and reinforced the theory of evolution enunciated by Darwin, and the theories of

Darwin, "though apparently remote from practical considerations, swing back to reinforce commercialism."

England emphasized the economic aspect of the survival of the fittest, while Germany went a step farther in emphasizing the political aspect. In England the doctrines of *laissez faire*, competition, the sacredness of contracts, and the rights of property were limited to the struggles of individuals, or at least to competing groups within the nation, while Germany in her thought and practise has carried these doctrines out to their logical conclusion in the struggles of nations.

Over against these theories and forces of the materialistic survival of the fittest are set the forces of idealism. While Adam Smith and Ricardo, Malthus and Herbert Spencer applied the biological interpretation of evolution to social affairs an idealistic reaction developed in English literature as seen in the writings of Carlyle, Wordsworth, Matthew Arnold, and Tennyson. Eventually the "net of social environment binds the natural egoism to the service of the family, the nation, and the world, setting at last to the strongest a limit to his selfishness, so that a Saul becomes a Paul, a robber baron becomes a people's king, and a financial adventurer becomes the founder of a new economic order. And as yet the titanic forces of world socialization, clashing in their conflicting currents, have only begun their work."

The author uses the statistical method of the eugenists to show that favorable social conditions produce successful men listed in "Who's Who in America" and in "Who's Who in Science," as well as heredity. He shows a direct correlation between the habitations of noted men and the more densely populated centers of the United States. He attempts to answer the criticisms of the eugenists that the existence of noted men in the popular centers is due to the migration of strong men to places offering greater social opportunities. The author points out that on the whole, if there is any migration, the movement of noted men in contrast with the usual drift of population is away from rather than toward the densely populated centers. His argument against the eugenists criticism seems to be unnecessary, for if it is true that noted men are attracted to the densely populated centers such a fact is in favor of the contention that a certain density of population is important in developing strong men, for altho the initial impulse to migrate to the densely populated centers may be due to superior heredity, it could also be argued that the favorable interaction with society is necessary to develop the potentially strong man into the actual. If, on the other hand, the poten-

tially strong man migrates on the whole more away from than to the densely populated centers, as the author suggests, it would seem that the sparsely settled portions of the country may not at least be inimical to certain stages of the development of the strong man. But the weakest part of the author's statistical argument consists in his reliance upon "Who's Who in America" as the basis of his study. The author's own contention that the materialistic standards of the time do not correspond to the true standards of idealism, would seem to require that the successful man should be re-defined. If this were done, "Who's Who in America" would undoubtedly need much revision.

Altho I cannot subscribe to the author's statistical argument, I do find myself in complete agreement with his point of view and with his general exposition of the problem. "Social Environment" is a volume well worth the careful perusal of students of the social sciences.

H. G. LULL

Department of Education,
Kansas State Normal School

A HISTORY OF THE FAMILY AS A SOCIAL AND EDUCATIONAL INSTITUTION: WILLISTINE GOODSSELL. XIV+588 pp. The Macmillan Company, 1915. Price, \$2.00.

This is one of a series of volumes being published by the Macmillans and edited by Paul Monroe under the title of "Text-Book Series." The name of the series reveals their general purpose and the object of this particular number. The study of the family has become important in universities and there has been no really comprehensive, yet somewhat brief text covering that institution in its genetic and current problematical aspects. Consequently a volume promising to embrace these features is highly welcome.

Dr. Goodsell's work treats the origin of the family quite briefly, its forms among present primitive peoples, the Hebrew, Greek, and Roman types of the patriarchal family, the influence of early Christianity on marriage and family custom in the Roman Empire, the family during the Middle Ages and the Renaissance, the 17th and 18th century English family, that of the American colonies, the Industrial Revolution and its effect on the family, the family during the 19th century in England and America chiefly, the present situation, and current theories of reform. Twelve of the fourteen chapters are devoted to the historical phases of the domestic institution,

altho the consideration of the influence of the Industrial Revolution introduces the student to the rise of some of the current problems. In the estimation of the reviewer, the volume would have been more valuable as a text that is intended not only to bring the student face to face with the interesting and grave situations now confronting the modern marital institution but by means of a comprehensive consideration of facts and principles points out the avenues to constructive reform, had it dispensed with some of the historic material, notwithstanding its interesting presentation, in favor of a larger current study.

Aside from this criticism of proportions, there is little that is objectionable in the volume and much that is commendable. The genetic and historical portions are well worked out and furnish an excellent survey of the rise and development of the family. The hundred pages devoted to current marital conditions and to their improvement are well balanced studies. The author shows that he is familiar with tendencies and theories. He is alert in discovering real evils and constructive in pointing out their remedies. He discards the proposed cures of radical socialists and feminists, as well as the traditional ones of theological and bio-sociological conservatives, and espouses those of the progressive bio-sociological students. Constructive reform can be successful ultimately only as it is based on educative processes. Enlightened opinion in turn may successfully operate thru legal regulations. To reverse the order does not bring a large measure of relief and may result in positive injury.

In the hands of capable instructors who make extensive use of current collateral reading, this text will do much toward making young men and women intelligent about the home and its problems and to promote a healthier social state.

JOHN M. GILLETTE

Department of Sociology,
University of North Dakota

ANCIENT TIMES: A HISTORY OF THE EARLY WORLD: JAMES HENRY BREASTED. XX+742 pp., 8 Colored Plates, 37 Maps. Ginn & Co., Boston, 1916. Price, \$1.60.

Ancient history has come to its own. The former discipline that comprised the traditional epitome of Greece and Rome with a smatter of Semitic and Egyptian peoples has been passed to the Museum. In those palmy days the Philistines, inferring from Goliath (1), were a heavy, brutal folk, the Hittites were a lost

empire, the Nile-dweller was a stranger to humor, Crete was merely a rock in the ocean, and over the heart of Asia rested the deathly quiet of the ages.

Nous avons tout cela changes! Now we have Meyer, Myres, Rogers, Sayce, Jastrow, Hogarth, Evans, Koldewey, Justi, Breasted, Reisner, and time would fail to enumerate them all! Then there are "Funds," Academies, and Gesellschafts galore. In his *Men of the Early Stone Age* Osborne has blazed a trail from France to Java and, standing on his shoulders, Grant has given us *The Passing of the Great Race*. If the schoolmaster of the generation past were to open the text of today, he would surely break his bread in humility. Dynasties synchronize, kings drop a millenium in a day, and nations long forgotten step out into the round. If one would escape ennui, let such an one study Ancient history.

In his *Ancient Times* Breasted has summed up for class use the progress of antiquity in the light of recent discoveries, the present volume representing an enlargement of his work in Robinson's "*Outlines of European History*. The preface gives the reader his cue: "The bulk of the space has been devoted to the life of man in all its manifestations—society, industry, commerce, religion, art, literature. These things are so presented as to make it clear how one age grows out of another, and how each civilization profits by that which has preceded it."

Egypt and the Orient receive their fair share of the discussion, 220 of a total of 715 pages. Himself a veteran explorer and decipherer of inscriptions, Breasted has made full use of the marvelous revelations of excavations and discoveries of the last twenty-five years. There is a new spirit in our modern work, crude as it may be. Thus, as it were to check up data, the thrifty Danes have taken pains to verify the hewing out with stone implements of a log-house—"The entire work of getting out the timber and building a house was done by one mechanic with stone tools in eighty-one days." At Wangen the stumps of the piles whereon once rested a lake village have actually been counted and their number was 50,000. The earth has been combed for the slightest evidence. Thus Dechelette (a sacrifice to the world war) has preserved a vertebra of a late stone age man with a flint arrowhead sticking thru it. From Egypt have come bronze or copper beads, so small as to render threading them almost a microscopic process. From Babylonia we have bead-like cylinders whose inscriptions call for microscopic reading. Marvelous were their works! A tombstone from the late Stone Age, 65 feet high and 300 tons in weight; an obelisk from the time of Hatshepsu

of 1000 tons weight; stones averaging two and one-half tons quarried, transported miles overland and down the Nile, then boosted and piled 500 feet up in the air; temples whose precincts would dwarf a cathedral and whose columns would carry a full company of soldiers on their capitals. There are legal codes four thousand years old, still stepping-stones in the history of law; a sanitary code that would bring our North Dakota towns to attention; arts the like of which modern man has not dreamed.

But the book! Profusely illustrated, each cut and diagram is accompanied with a description that makes the drawing an integral part of the text. There are numerous plates made of the monuments, that serve better than any other method, to give a student a correct impression of this class of sources. Elegant colored plates, moreover, reveal the beauty of the art of Semite, Egyptian, and Greek—sometimes well-nigh as incredible as the tints of a sunset. A complete set of maps and sequence maps enable the student to synchronize events and to trace political progress thruout its varied changes. A multitude of photographs of objects of daily manufacture further illuminate the story, and a clear, forceful style points the story and drives it home. It may be added that the text is so paragraphed, the paragraphs and side-titles so numbered, and the subject-matter so thoroly indexed as to put the material at the hand of teacher and student.

The book closes with the age of Constantine, a final chapter bridging over into the next period—"The Triumph of the Barbarians and the End of the Ancient World."

A better text for the class-room or the independent reader is not in the market and the present text is worthy of a place in every library.

W. N. STEARNS

Department of Religious Education,
Fargo College

THE HOLY SCRIPTURES ACCORDING TO THE MASORETIC TEXT: A
New Translation—with the aid of previous versions.

The long expected Jewish translation of the Old Testament has arrived. 1136 pages in large, clear type, with preface giving history of the enterprise. The work set on foot in 1892 was continued under the general direction of Doctor Marcus Jastrow until 1901. In 1903 the book of Psalms was published. The death of Doctor Jastrow was followed by the appointment of a new committee under

the chairmanship of Rabbi Schechter. This committee of seven—equally representative of the three great Jewish Seminaries of the country, likewise of the Jewish Publication Society of America and the Central Conference of American Rabbis—with Professor Margolis as Editor-in-Chief and Secretary to carry the laboring oar—brought their labors to a close in the final vote of the last meeting of the Board, October-November, 1915.

“The present translation is the first for which a group of men representative of Jewish learning among English-speaking Jews assume joint responsibility, all previous efforts in the English language having been the work of individual translators. It has a character of its own. It aims to combine the spirit of Jewish tradition with the results of biblical scholarship, ancient, medieval, and modern. It gives to the Jewish world a translation of the Scriptures done by men imbued with the Jewish consciousness, while the non-Jewish world, it is hoped, will welcome a translation that presents many passages from the Jewish traditional point of view.”

The English reader is reminded, as he opens the volume, of the Jewish classification of the books—the correct one, by the way. Thus the list of Prophets begins with Joshua and concludes with the Twelve—the Minor Prophets. The terms “Earlier” and “Later” Prophets as well as “Major” and “Minor” have been well-nigh forgotten by some of us. The “Writings” (*Hagiographa*) include the balance of the books from Psalms to Chronicles and Ezra-Nehemiah.

Further, the version is superior to the English in the poetical rendition of such books as Hosea, Joel, Amos, Micah, Nahum, Habakkuk, Zephaniah, Malachi, and the greater part of Isaiah. But the field song in Genesis 8:22 still appears in prose form.

Departures from familiar phraseology abound:

“He guideth me in straight paths for His name’s sake.”

For the Lord regardeth the way of the righteous;

But the way of the wicked shall perish.”

“Happy is the man that hath not walked in the counsel of the wicked,

“Nor stood in the way of sinners,

Nor sat in the seat of the scornful.”

“Why are the nations in an uproar?

And why do the peoples mutter in vain?”

“But wild-cats shall lie there;

And their houses shall be full of ferrets.”

Often the reader would expect a more radical departure, as in:

"For it is precept by precept, precept by precept,
Line by line, line by line;"

"But as for me, I know that my Redeemer liveth."

Ofttimes improvement is apparent:

"My breath is abhorred of my wife,

And I am loathsome to the children of my tribe."

"That wherein he trusteth shall be plucked out of his tent;"

"Shall mortal man be just before God?" (R. V. "Shall mortal man be more just than God?")

"The sluggard is wiser in his own eyes

Than seven men that give wise answer."

"A wise son maketh a glad father;

But a foolish son is the grief of his mother."

"Thou turnest man to contrition;

And sayest: Return, ye children of men."

The work is based on the texts of Baer and Grinsburg.

Time and use must be allowed before the scholars can give us the final word, but we can safely pronounce the present work as worthy a place among the great English versions, the work of a devoted scholarship in the interests of a race, a worthy successor, let us hope, to the Septuagint.

W. N. STEARNS

Department of Religious Education,
Fargo College

REST DAYS: A STUDY IN EARLY LAW AND MORALITY: HUTTON WEBSTER. XIV+325 pp. The Macmillans, New York, 1916. Price, \$3.00.

This erudite volume is the outcome of the expansion of a monograph on the same subject which appeared in the University Studies of the University of Nebraska in 1911. The author tells us in the preface that during the five years since then he has found no weighty reasons for modifying the earlier results.

The underlying assumption of *Rest Days* is that "the great institutions of modern civilization have their roots in the beliefs and customs, and often in the superstitions, of savage and barbarian society." (p. vii). It was the author's task to collect ethnological data to establish this proposition relative to a restricted sphere, namely that of rest days. That he has done this thoroly and scholarly,

the exhaustive array of facts and the citation to a great array of authorities evinces.

In the Introduction, Professor Webster treats of the nature of tabus, their connection with abstinence and quiescence, and their origin amongst very primitive peoples. The tabu is the tap-root of sabbatarian regulations and such regulations, therefore, are the product of superstition or fear of preternatural agencies, rather than of reason. Tabus are communal and individual, the former being the outgrowth or readaptation of the latter. Tabus calling for abstinence and rest arises out of beliefs that persons and things are "considered dangerous, mysterious, abnormal, uncanny, awful,—because they are felt to be potent for weal or woe in the life of man." Classifying phenomena, the primitive mind arrives at the conception of pollution and sanctity. Corpses and murderers are unclean; chiefs and kings, being superior, are sacrosanct or holy. Penalties for infringing tabu regulations are rigidly enforced.

The idea of tabu enters into and is discust in the course of the succeeding chapters:—I, Tabued days at critical periods; II, Tabued days after death and on related occasions; III, Holy days; IV, Market days; V, Lunar superstitions, and festivals; VII, The Babylonian "evil days" and the shabbattum; VIII, the Hebrew sabbath; IX, Unlucky days; Conclusion.

Especially interesting chapters are those dealing with "lunar superstitions and festivals," and "the Hebrew Sabbath," because the explanation of their origin accounts for so many phenomena of our Western civilization. The moon was probably the first celestial object to attract marked attention and this notice was universal. It was early believed to exercise a grave and magic influence on human affairs, on vegetation and crops, and on terrestrial matters generally. Conesquently ,observances and rest periods of various kinds grew up in connection with its appearances, changes and phases. Also, its phases came to be the mesure of, first, the month—from full moon to full moon—and, later, of the week and the year.

Dr. Webster rejects the various theories seeking to account for the institution of the Hebrew sabbath by borrowing from Egypt or Babylonia. Rather, the sabbath arose as a full moon observance, the "festival of the new moon" of the Jews. Later, the term sabbath came to be applied to every seventh day, a similar change being noted among many other peoples. It is held that the Hebrews and Babylonians derived their somewhat similar new-moon and full-moon from a common semitic antiquity.

Full bibliographical citations appear in connection with the text

in the footnotes. A complete index makes the volume available as a reference work. Dr. Webster apparently has proved his thesis, and in doing so has demonstrated that, like other great social institutions, rest days were not created or given outright, but evolved out of still more primitive institutions. In doing so he has put the world of scholarship deeply in debt to him, not only for the thoroughness of execution but also for the purity and excellence of diction.

JOHN M. GILLETTE

Department of Sociology,
University of North Dakota

AN INTRODUCTION TO SOCIAL PSYCHOLOGY: CHARLES A. ELLWOOD, Professor of Sociology in the University of Missouri. D. Appleton and Company, New York, 1917. XVI+344 pages. Price, \$2.00 net.

In this very useful work Dr. Ellwood has succeeded in organizing into convenient form for class room use a wide range of data bearing on social psychology. He recognizes society as humanity viewed from the standpoint of its reciprocal relations. He does not, however, limit his discussions, as some authors have done, to the plane of mental interaction, but extends it to include a consideration of the biological substratum of instincts, and the adjustments to the physical environment. The work is thus in practical effect a sociology, with the center of attention the mental interactions.

A part of the book worthy of special comment is the discussion of the subject of social change. This subject is taken up under the two headings of normal conditions and abnormal conditions. The discussion of change under abnormal conditions is a lucid account of the causes and typical course of social advance thru revolutionary action. It is shown that the aristocracy, or administrative class, is in a position to check the perpetual readjustment process in society which is the necessary condition of progress. When an aristocracy is especially obstructive the forces of progress will be likely to burst out destructively and establish a new equilibrium. On the other hand if the aristocracy yields, readjustment may be secured without the waste and danger of civil war. Normal progress, therefore, involves a continuous process of readjustment, in which the responsibility rests mainly upon the administrative aristocracy.

It is doubtless unavoidable that in a more or less conventional summary of a wide range of knowledge many profound problems should be passed over lightly, or settled merely by phrases. An example of this tendency appears in such statements as that certain

instinctive activities emerged because of survival value, and that the present intellectual capacity of man emerged as a result of intergroup struggle. Issue might be taken on the same ground, with the conception of social evolution as merely developed animal association, the former growing out of the latter gradually without any mysterious leaps. What greater mystery could there be than the appearance of self-consciousness as the medium in which the achievements of society are developed and transmitted? Doubtless self-consciousness grew out of the instinctive life, which has its rationality also, but the profound change thru which the pre-human became human by the clarification of consciousness into the beginnings of intellect, seems to deserve more elaboration than is given to it.

The book will undoubtedly find its way into many college classes, and will be welcomed to a place beside Dr. Elwood's other excellent works.

G. R. DAVIES

Department of Sociology,
University of North Dakota

THE AMERICAN COUNTRY GIRL: MARTHA FOOTE CROW. VII+
367 pp. Frederick A. Stokes Co., New York, 1915.

A book of this nature is difficult to review because it is not a systematically scientific treatise and because it possesses a certain intangible worth that evades descriptive formulation. In saying this, there is no desire to impeach the value of the work, for indeed it seems to be a most instructive and wholesome volume. It contains much useful information for the country girl and those interested in her, is permeated with good sense and advice, and is written in a fresh, charming style.

Altho the volume is not divided into parts formally, the first portion is devoted to a portrayal of conditions under which rural girls and young women live. The material for the chapters which this section includes was obtained by means of a questionnaire sent to farmer girls all over the nation and by an extensive correspondence with them. Excerpts from letters detailing daily programs of their work on the farm, their pastimes, recreation, social advantages and disadvantages, and reflecting their opinions about their lot, constitute the larger portion of the contents and gives the reader a very vivid and realistic impression.

The remaining twenty chapters concern themselves with various phases and problems of country home-keeping, setting forth the ideals and virtues which should obtain and giving much pertinent, up-to-

date information about how to obtain necessary personal and material equipment. The authoress believes in the application of the efficiency system to the management of the household, to the treatment of foods and to the care of health. She also believes in the cultivation of the cultural and recreational features of life. The development of pageantry as a community resource is recommended. She takes pains to show how all these objects may be realized in and connection with the farm home.

Because of its concreteness, vividness, wholesomeness, and usually sound judgment, Miss Crow's work deserves a wide use by farm girls and by their parents. It would prove an excellent guide to and foundation for the year's work of a farm woman's study club.

JOHN M. GILLETTE

Department of Sociology,
University of North Dakota

THE PSYCHOLOGY OF CITIZENSHIP: ARLAND D. WEEKS, Professor of Education in the North Dakota Agricultural College. A. C. McClurg & Company, Chicago, 1917. 152 pp. Price, 50c.

This book is one of the National Social Science Series, edited by President Frank L. McVey, and is based upon a series of articles by Professor Weeks in the *American Journal of Sociology*. It is an excellent study in social psychology and will undoubtedly attract as much attention as the articles from which it has grown. The attractiveness of the text matter is owing to the fact that it is not written from the usual academic angle. The tone of the book reminds one of the expressive statement Professor Weeks made in one of the articles referred to: "It was never easier for a simpleton to live."

Specifically, Professor Weeks show that civil society makes little demand upon intelligence as against the supreme demand it should make. The definite cause is a round of forces consisting of a social inertia that prompts a fitting type of social suggestion that in turn accelerates the aforesaid inertia that prompted it. This circle of events tends to decerebrate the mass of citizens. The writer offers an excellent remedy: The entire publicity of civic transactions, and the more frequent submission of "issues" to the electorates instead of "candidates." This would prompt greater conscious citizenship and civic intelligence.

JOHN W. TODD

Department of Psychology,
University of North Dakota

University Notes

The University and the War Like other universities and colleges, the University of North Dakota has been affected in its work, student body and faculty by the war situation. The call for men to enlist in the Reserve Officers' Training Corps and the needs for increased labor on the farms of the state resulted in one-third of the men of the student body withdrawing from the University. Four members of the faculty have entered the service of the government in various capacities. Professor A. Hoyt Taylor of the Physics department is now Superintendent of Radio Communication at the United States Naval Station at Great Lakes, Illinois. Messrs. Stephenson, Park, and Shriver are with the Training Corps at Fort Snelling and St. Louis. The Governor has appointed on the State Council of Defense Dean E. J. Babcock and Professor J. M. Gillette. Professor E. F. Chandler has been appointed Director of Boys' Work in this state in so far as it is associated with the State Council of Defense. The President of the University is a member of the Advisory Commission on Education and Engineering of the National Council for Defense.

The University has also established other relationships and is rendering service in many directions thru its organization and the members of its faculty.

In cooperation with the Intercollegiate Intelligence Bureau, the University Bureau of Public Information has been working with the Alumni and providing that Bureau with information regarding alumni who would be available for service in the forces of the United States. There have been sent out from the President's office several publications relating to the war, one in particular address to the school superintendents of the state on some matters of special importance to them at this particular time.

Among the women Red Cross work has been organized by members of the local Red Cross Association in Grand Forks. This work has been undertaken enthusiastically and promises good results during the coming year.

The University has shown its loyalty to the government in the subscriptions that have been made to the Liberty Loan. The amount subscribed by members of the faculty reached the sum of \$8400.

The management of the University Commons is endeavoring to meet the advance in prices due to the war situation by planting a considerable acreage to potatoes and vegetables for the supply for the coming winter. The University has also offered the use of land

and prepared it for members of the faculty who care to put in gardens.

Late in March the University called for volunteers for training in military tactics and about 160 men answered the call. They were placed under the direction of Professor F. L. Thompson of the department of Physical Education, who was assisted by a group of students who had had experience in the National Guard and in military schools. The squads progressed rapidly during the remainder of the semester until the work was broken up by the withdrawal of the men to the training camps.

While a good many of the student body have accepted service in the armed force of the United States, and will continue to do so from time to time, the outlook for the coming year indicates that the registration will not be much smaller than for the present year. Probably the increase in student attendance which has taken place each year will not be kept up, but under the circumstances this is as would be expected. It is hoped that the University will be able to maintain all its departments and its organization without deterioration. It is the view of the University that this should be done at all costs, since the demand for men and women who are educated and trained will be greater than ever, not only during the war, but after.

The Students and the War

The young men of the University in common with those of other higher institutions of learning have felt the call of the Great War, and many of them have left to engage in actual military service or to take up other tasks made necessary by the unusual conditions. The University authorities have tried to meet the situation in a really patriotic spirit. While realizing that the calls from without were pressing and worthy, they have still felt that in most cases the best course for young collegians to adopt is to continue their regular work, thus equipping themselves as thoroughly as possible for the great tasks which are certain to confront our country after the war is over. Young men have accordingly been urged to finish their year's program if possible, and a great majority have done so. Regular university work has therefore not been interrupted to anything like the extent that it has been at some other institutions.

At the same time it has also been recognized that some of the young men have special duties to their country which should be heeded. The work of the Reserve Officers' Training Corps has called particularly for young men with intellectual training and power of leadership. To this call three of the younger members of the faculty and many students have responded. Similar calls have

come from the radio service, the air service, and the Paymasters' and Quartermasters' departments. Others of our young men were already enrolled in the militia or the naval reserve. Calls from these were, of course, preemptory.

Again, here in North Dakota, another duty hardly less imperative than that of actual military service has been repeatedly emphasized. This is the duty of increasing the food supply. The world is threatened with a famine. Even here in America the need is evident. Many of our young men have therefore felt that it was essential that they should get back to the farm to increase the acreage and thus to help in America's great task of feeding our allies. The University has recognized that this is indeed a truly patriotic work, and accordingly the Administrative Committee, to whom the matter was entrusted, have excused something like one hundred young men for this purpose. About fifty were excused for actual military service. The details in regard to the granting of the excuses are thus summed up by the Committee:

1. Students who have enrolled in actual military service have been granted credit as follows:
 - (a) Each instructor has been asked to assign a mark for the work done and to indicate the amount of work which can be credited in hours.
 - (b) All students who receive a mark of 78% or above are to be given a standing of 78% for the number of hours indicated.
 - (c) Students receiving less than 78% are to be given credit only for the grade reported.
 - (d) In case a student is in good standing in all his subjects the Committee will assign a sufficient amount of "war credit" at 78% (to count on free elective work) to bring up the total credit earned to the total number of hours for which the student is enrolled.
2. Each petitioner desiring to be excused to take up agricultural work (with a few exceptions because of special circumstances) has appeared in person before the Committee and stated his plans and purposes.
3. Each petitioner has been required:
 - (a) To present a letter from his father or other responsible person indicating that there is a real call for his services and definite work for him to do.
 - (b) To send to the Registrar, on or before June 10, an affidavit containing a full statement of his activities to that date.

(c) To send to the Registrar, between September 15 and 30, a second affidavit with a statement of his activities from June 10 to date. (In the case of Seniors, however, this second affidavit is not required.)

(d) To furnish the names of two responsible witnesses who can, if necessary, testify as to the work done.

4. If all the above named conditions are satisfactorily complied with, the Committee has agreed to give credits to all students in accordance with the same plan as outlined above for those engaging in actual military service, but, except in the case of Seniors, such credit is not definitely assigned until next October and then only in case all the requirements named are fully met.

Athletics

The athletic activities of the University of North Dakota for the current season have been necessarily somewhat restricted due to the withdrawal of men for war service. In baseball all games with other institutions were cancelled, and only the campus league games were played, the winner being the Sigma Chi team. In track athletics a team was sent to Northfield, Minnesota, where it competed with teams from Carlton, South Dakota State, and St. Olaf Colleges. The meet was won by Carlton College, with North Dakota second. The High School Conference track meet, held as usual at the University, was this year particularly successful. Twenty-six schools competed, sending in all one hundred and fifty contestants. First place was won by Pembina High School, with Langdon a close second, and St. Thomas third. As to the athletic program for next year, it has been decided to carry out the football schedule and the other usual activities so far as the circumstances of a decreased enrollment will permit.

Much of the attention ordinarily given to athletics was this year given to military training. A company of one hundred and sixty men was organized for drill and work was regularly continued until Registration Day, June 5. On this occasion the University participated in a civic demonstration, the military training company, accompanied by the student body and faculty, marching in the parade. Tho the numbers had been considerably decreased at this time by withdrawals for war service, about seven hundred members of the University participated. One of the addresses of the day was delivered by President McVey. The total number of students who have left on account of the war is one hundred and seventy-six, including twenty-four from the Model High School. Of this number fifty-two have entered the United States service, the larger num-

ber going to the officers' training camp at Fort Snelling, Minn., and one hundred and twenty-four have left for work on the farms.

Commencement As noted elsewhere, owing to general conditions, the commencement exercises were somewhat shortened this year, Class Day, Alumni Day, and the Commencement dinner being omitted. Notwithstanding the omissions, however, the commencement season was very successful and very interesting.

The Baccalaureate Sermon was given by the Very Reverend John P. Tyler, Bishop of North Dakota, on Sunday afternoon to a large gathering. A good old-fashioned sermon, it was, given with vigor and conviction. Commencement proper followed on Monday. A much-needed and very-welcome shower prevented the usual parade, but, aside from that, all went as usual. The Commencement Address was given by Dr. Irving Fisher of Yale University who spoke most earnestly from a great fund of information and out of most vitally interesting experiences on "Public Health in War Times." A real message it was and made a deep impression on the large audience.

After the address came the conferring of degrees, the making of announcements, and the general partings of the year. As indicating the continued growth of the University the numbers receiving degrees and certificates is suggestive:

Graduate Department

Master of Arts -----	8	
Master of Science -----	3	11

College of Arts

Bachelor of Arts -----	66	
Bachelor of Science -----	3	69

School of Education

Bachelor of Arts and Diploma in Teaching -----	37	
Teacher's Certificate (two years of college work) -----	63	100

College of Engineering -----		7
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College of Law -----		18
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School of Medicine

Bachelor of Arts and Certificate in Medicine (two years in Medicine) -----		13	218
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The Sock and Buskin Society

The year has been devoted entirely to the staging and acting by members of the Sock and Buskin Society of a series of original one-act plays written in the regular English courses offered by the University on *The Technique of the Drama*. Of the twenty-eight plays written, eleven have been

staged. Some of the titles will be suggestive of the native quality of the materials. *Back on the Old Farm* is a play of North Dakota farm life, portraying the futility of false education in the actual problems of the country. *Me and Bill*, a play of the Sheep Country, centers in the tragic loneliness of the life of a sheep-herder of the great plains. *Wanted, a Farmer*, a farce, was suggested by the visit of an excursion party of North Dakota bachelor-farmers to the Chicago Live Stock Show last winter. *Lonely Hearts* is an Easter play of the prairie pioneers, and *Sold* is a tragedy of farm life based on the author's observations of the bartering in marriage in a colony of Russian-Germans in Morton County, North Dakota. These are sufficient to suggest the originality of the work, and to indicate the beginnings of a vital drama coming out of our own land.

The Society has also established an effective laboratory for stage-craft. An alcove of the attic of Woodworth Hall has been converted into a workshop for making stage devices and for scene-painting—the scenes, settings, costumes, and make-up, all the work of student-amateurs. An adjustable stage has been constructed in Woodworth Auditorium, with a complete set of scenery and an adequate lighting system. The tour of the state this year, by our University amateur players with three original plays, served not only in giving the people of the smaller towns wholesome dramatic performances but, more than this, it has demonstrated to them that their own life is adequate material for literature—that it can be effectively formed into genuinely native drama. Mention should be made in this connection of the encouragement given to original dramatic composition by the prizes offered this year for the first time, by Dr. J. G. Arneberg of Grand Forks, a former student of the University.

During this year the work of prominent alumni has extended the ideals of the Society in communal work well beyond the borders of the campus, the most unique contribution being that of Miss Mattie Crabtree, who graduated from the University last year. Under her inspiring leadership the Sock and Buskin Society plan of co-operative authorship has been further developed in the historical *Pageant of Dickey County* "written in collaboration by twenty members of the community" and staged at Ellendale, June 1, 1917, by the people, representing all parts of the county.

Academy of Science

The 1917 meeting of the North Dakota Academy of Science was held at the University during the first week of May. An unusually full and suggestive program had been arranged and very interesting sessions were held. The pro-

gram is here given as arranged, in full, as typical of the annual programs of the Academy:

- President's Address - - - A. Hoyt Taylor (University)
1. Population Condition in Small Towns of the United States
- - - - - John M. Gillette (University)
 2. A Statistical Study of the Errors in Amateur Photography
- - - - - E. B. Stephenson (University)
 3. The Relation of Temperature to Corn Production in
North Dakota - R. C. Doneghue (Agr'l College)
 4. The Effect of Maure Upon the Composition of Corn
- J. W. Ince and R. F. Beard (Agr'l College)
 5. On the Relation of a Fungus to the Flowering Plant
Thismia - - - Norma E. Pfeiffer (University)
 6. Plant Associations of Owego and Shenford Townships,
Ransom County, North Dakota
- - - - - Reynold Shunk (University)
 7. Parasitic Anaphylaxis
- L. Van Es and A. F. Schalk (Agr'l College)
 8. (a) Calculation of the Percentage of Intermediate Ions
and Other Constituents in Solutions of Higher Type
Salts. (b) The Relationshi pof Solubility Curves
of Higher Type Salts to Their Theoretical Limiting
Curves - - - W. T. Pearce (Agr'l College)
 9. Neutralization Curves of the Phosphoric Acids, determined
with the Hydrogen Electrode G. A. Abbott (University)
 10. The Production of Hydrochloric Acid in the Stomach
- - - H. E. French and H. Engh (University)
 11. The Effect of Water on Digestion in the Stomach
- - - - - C. E. King (University)
 12. The Staleness of Bread - W. L. Stockham (Agr'l College)
 13. Informal Discussion. How may Scientists of North
Dakota best contribute to the National Welfare in the
Present Emergency?
 14. Observations on the Hibernation of the Ground Squirrel
(*Citellus Tridecemlineatus*) G. E. Johnson (University)
 16. The Geological Map of North Dakota
- - - - - A. G. Leonard, (University)
 17. (a) Flood Control in the Red River Valley (b) The
Pierre Shale Escarpment Myth of the Coteaus
- - - - - Herbert A. Hard (Agr'l College)
 18. The Gasoline Situation - William J. Leenhouts (University)
 19. The Characteristics of the Antler Tornado (Photographs
by W. H. Wegner) - Howard E. Simpson (University)

Fellowship and Scholarship

The arrangements for fellowships and scholarships adopted some years ago by the governing body of the University of North Dakota are still in operation. The plan provides as follows: 1. Three general fellowships yielding \$300.00 each and available in any of the colleges of the University. 2. One industrial fellowship in the School of Mines, yielding \$400.00, and 3. Three general scholarships yielding \$150.00 each and available in any of the colleges of the University.

This year there were many applicants from graduates of our own and other institutions. From the number the following were recommended by the University Council and appointed by the Board of Regents:

Luella Jemima Hall, B. A. (University of North Dakota, 1917) Fellow in History.

Beatrice Olson, B. A. (University of North Dakota, 1909) Fellow in English.

Lloyd Bertram Tendick, B. A. (University of North Dakota, 1917) Fellow in German.

H. Everett Bowden, B. S. Beloit College, 1917) Industrial Fellow in the School of Mines.

Earl K. Hillbrand, B. A. (Kansas Wesleyan University, 1917) Scholar in Education.

Joy Ridgeway, B. S. (Grinnell College, 1915) Scholar in Biology.

Alfred T. Torrison, B. A. (University of North Dakota, 1917) Scholar in History.

The National City Bank Fellowship

The University of North Dakota has recently received gratifying recognition, both in its work and in the personnel of its student body, by the appointment of Messrs. Ivor C. Musgjerd and Arthur F. Shaft, members of the class of 1917, to two of the business fellowships of the National City Bank of New York, probably the most important financial institution of the United States. The establishment of these forty fellowships about a year ago was an important and most commendable step on the part of a great commercial institution, putting it in line with the far-reaching business diplomacy which England, France, and Germany have so conspicuously displayed in recent years. The National City Bank has opened branch banks in several cities of Latin America and also in Petrograd. In this expansion it found itself confronted with the lack of men trained to deal with the new responsibilities. These fellowships were established to meet

this lack; it is a broadminded policy and the universities may well respond to this added opportunity to contribute to national progress.

The plan of appointment and service is as follows: young men who have completed at least the work of the sophomore year, including certain recommended courses in the social sciences and foreign languages,—German, French, Spanish, Portuguese or Russian are specified—and required courses in Bookkeeping and the Elements of Accounting, receive appointments to put in three months at the Bank during the summer between the sophomore and junior years. While there they have an opportunity to familiarize themselves with some phases of banking, they attend regular courses of lectures on commercial subjects, and continue their language training thru native instructors and by association in boarding clubs with young men who speak the particular language of the country to which they may be sent. The same program prevails for the following summer vacation, and during the senior year, or at its conclusion, they spend a period of six months for which it is expected that the universities will grant appropriate credit toward the bachelor's degree. In the case of graduates the work is consecutive. Appointees to fellowships thus spend a total of one year at the Bank and are rotated thru its various departments, receiving instruction in language and in other special branches. On completing their course they may receive permanent appointment in the bank or allied institutions in such lines as they seem best fitted to follow, provided their record merits such invitation. The fellowships carry a stipend of \$600 together with a maximum travelling allowance of \$150.

The appointments are made on the basis of recommendation by the cooperating university, coupled with a full statement of the record of the applicant and appropriate letters of recommendation. Due weight is given to previous actual business experience. No appointment is made without a personal interview with a representative of the Bank, and personality has a large part to do with the selection. The National City Bank merits great commendation for its liberal and farsighted policy, and Messrs. Musgjerd and Shaft deserve congratulations on the opportunity thus presented to them. Both are mature men of character and thoro training who have had previous business experience. Both have made their way thru the University largely by their own efforts and may therefore be expected to make a creditable showing for themselves and the institutions which they represent.

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Jan 17 1917

(Doc. Dept.)

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of the
University of North Dakota



JANUARY, 1917
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Entered as second-class matter September 16, 1910, at the Post Office
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Announcement

THE Quarterly Journal is a periodical maintained by the University of North Dakota. Its primary function is to represent the varied activities of the several colleges and departments of the University, tho contributions from other sources are welcomed when they are the fruitage of scientific research, literary investigation, or other form of constructive thought. Correspondence is solicited.

All communications should be address,

THE QUARTERLY JOURNAL,
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Editor's Bulletin Board

THE October number of the Quarterly Journal will be one of the regular political and social science issues. It will discuss, however, but one great subject—the present World War—tho treating it from several points of view. While the various sub-topics have not yet been definitely arranged nor the writers secured, the following is a tentative list:

1. Historical Background
2. Economic Phases
3. Canada's Part
4. Woman's Work
5. The Red Cross Movement
6. Contributions of the Universities
7. Public Health
8. Educational Problems
9. Applications of Science
10. After the Close

Each topic will be handled by one thoroly conversant with it, andl discust from a strictly impartial point of view. An exceedingly valuable number is assured.

The Quarterly Journal

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- IX. LABORATORIES AND STATIONS are maintained at University, Devils Lake, Bismarck, Minot, Hebron, and Fargo, North Dakota.

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