Part One

WESLEY MITCHELL AND THE NATIONAL BUREAU

Wesley Mitchell and the National Bureau*

When Wesley Mitchell died in the early hours of Friday, October 29, he was at work on his favorite subject—business cycles. A year earlier he had suffered a heart attack, but after a few weeks was again working at full efficiency on a manuscript he liked to think of as a progress report on What Happens during Business Cycles. A second attack in late August left little hope for recovery, though the end did not come promptly. With courageous tenacity he stayed at his desk, completing the penultimate chapter of the first volume of his report. He managed also to put his papers in order, to render an account of the precise state of his scientific enterprises, and to draft a letter to a friend who had expressed a practical interest in the National Bureau's future. That much accomplished, he finally yielded to the insistent plea of his physician to put his manuscript aside. Idleness of even a limited sort can spell only hardship to an energetic man accustomed to good health over a lifetime, but it was no part of Wesley Mitchell's character to complain. As his physical strength gave way, the exquisite gentleness and courtesy that always marked his dealings with others continued to govern. These traits ran deep in Mitchell's character, and they flowed on unchanged until the end. So too did the steady play of his keen and eager mind. Work, especially of an analytical type, was a permanent part of the man. It could not be suppressed by family solicitude or medical exhortation. It went on relentlessly, triumphing over a fading consciousness, and ceased only with life.

While Wesley Mitchell's incredible will to work was testing his impaired constitution, Herbert Hoover—a friend since California days—wrote him: "I hear that you are laid up. This is not in the

* Revision of an address presented at the Annual Meeting of the Board of Directors of the National Bureau, February 28, 1949.

national interest." His illness was indeed against the interest of the nation, and his death brings grievous desolation. Few men of our times contributed as much or as quietly to the still small voice of reason in adjusting men's conflicts. None added more to the 'reasoned history of man' to which all social science aspires. None added as much to knowledge of the boisterous money economy in which we move and dwell. The prospects of economics are not as bright today as they were a year ago when we last met.

The need for the research being done by the National Bureau has, of course, not diminished. The loss of our ablest investigator and counselor, however, has made the task much harder. It is not to honor Wesley Mitchell—his works alone can do that—but to gain perspective on our responsibilities and opportunities that I invite you to join in an hour of remembrance.

I

Let us go back thirty years. The precise date is December 27, 1918, the place—Richmond, Virginia. With the war at an end the entire nation has been rejoicing and squabbling. A return to 'normalcy' can already be felt in this ancient city as elsewhere. Here the American Statistical Association is holding its 80th Annual Meeting. Its membership has grown rapidly in number and self-confidence during the year. Young men are conspicuous in the assembled throng. Many know at first hand the vital part that statistics played, and the still greater part it could have played, in the economic mobilization for war. Among this group is Wesley Clair Mitchell, a Columbia professor who became Chief of the Price Section of the War Industries Board after being pressed into emergency work.

Wesley Mitchell, not yet forty-five, is President of the Association, and is now addressing his colleagues on the subject "Statistics and Government". He minces no words on the incapacity of the established statistical agencies to cope with the problems of war, or on the hurried improvisations of the new statistical units set up by the war boards. The economists who flocked to Washington "worked with passionate intensity. They were appalled by no obstacles. Where they could not get definite data, they did not hesitate to estimate." Nevertheless, there was great confusion and

waste. No one was able "to put before the responsible authorities promptly the data they needed concerning men and commodities, ships and factories". Not until the Armistice was signed were we "in a fair way to develop for the first time a systematic organization of federal statistics". But the war boards were being rapidly demobilized, and the considerable gains in extending and organizing federal statistics were in jeopardy.

For some fifteen minutes Mitchell has been speaking in this vein. He is about to turn to tasks of the future. Let us join the audience at this point and follow his precise words:

> In physical science and in industrial technique . . . we have emancipated ourselves . . . from the savage dependence upon catastrophes for progress. . . . In science and in industry we are radicals —radicals relying on a tested method. But in matters of social organization we retain a large part of the conservatism characteristic of the savage mind. . . .
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> The 'social reformer' we have always with us, it is true. Or rather most of us are 'social reformers' of some kind. . . . Yet the story of the past in matters of social organization is not a story that we should like to have continued for a thousand and one years. Reform by agitation or class struggle is a jerky way of moving forward, uncomfortable and wasteful of energy. Are we not intelligent enough to devise a steadier and a more certain method of progress?
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> Most certainly, we could not keep social organization what it is even if we wanted to. We are not emerging from the hazards of war into a safe world. On the contrary, the world is a very dangerous place for a society framed as ours is, and I for one am glad of it. . . .
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> Taking us all together as one people in a group of mighty peoples, our first and foremost concern is to develop some way of carrying on the infinitely complicated processes of modern industry and interchange day by day, despite all tedium and fatigue, and yet to keep ourselves interested in our work and contented with the division of the product. . . . What is lacking to achieve that end . . . is not so much good will as it is knowledge—above all, knowledge of human behavior.
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> Our best hope for the future lies in the extension to social organization of the methods that we already employ in our most progressive fields of effort. In science and in industry . . . we do not wait for catastrophes to force new ways upon us. . . . We rely, and with success, upon quantitative analysis to point the way; and we advance because we are constantly improving and applying such analysis.

While I think that the development of social science offers more hope for solving our social problems than any other line of endeavor, I do not claim that these sciences in their present state are very serviceable. They are immature, speculative, filled with controversies. . . . Nor have we any certain assurance that they will ever grow into robust manhood, no matter what care we lavish upon them. . . . Those of us who are concerned with the social sciences . . . are engaged in an uncertain enterprise; perhaps we shall win no great treasures for mankind. But certainly it is our task to work out this lead with all the intelligence and the energy we possess until its richness or sterility be demonstrated.[1]

This, in essence, was Mitchell's scientific creed. He chose the proper time and place to proclaim his faith in a quantitative social science. Statistics had gained new prestige during the war. Many economists who had never before worked with observational records learned to do so in their Washington posts, and they were not likely to lose the habit upon returning to their academic jobs. In the new era of peace there would be time for fundamental quantitative studies of economic organization, in contrast to the rushed memoranda of war days. The American Statistical Association linked together in some degree the different branches of the study of man. As its President, Mitchell could address himself to social scientists at large. He was known to the members of the Association as an authority on index numbers. Many knew him also through his work on money and banking, and as the author of the massive treatise *Business Cycles* which, by its skilful blending of economic theory with statistical and historical fact, was a symbol of what the new social science might become. Now, as Mitchell spoke of the role that statistics might play in building a useful social science, the lustre of his office added force to his considerable personal authority.

But only a few who heard Mitchell's address could know that he was stirred by a vision of a new scientific adventure, in which he might soon take an intimate part. You are familiar with the story of the founding of the National Bureau, told by Dr. Stone at our Annual Meeting in 1945. Early in 1917 Mitchell joined Malcolm

[1] Mitchell, "Statistics and Government", *The Backward Art of Spending Money*, pp. 45, 47, 48-51. Originally appeared in *Quarterly Publications of the American Statistical Association*, March 1919.

Rorty, Edwin Gay, and N. I. Stone—who happily is again with us today—in a committee that was being organized "to meet a growing demand for a scientific determination of the distribution of national income".[2] The committee expected its second project to be Business Cycles. But the war intervened, and all plans were temporarily put aside. Now the war was over. And Mitchell spoke freely the thoughts he had long cherished, as his mind's eye glimpsed the organization that might soon concern itself with factual studies of national income, business cycles, and related matters.

One year later the National Bureau of Economic Research became this organization, and Wesley Mitchell its Director of Research. To Mitchell the National Bureau was the fulfillment of a dream that had its dim beginnings in his youth. I must now take another leap backward and mark a few steps in his moral and intellectual development before he assumed direction of the Bureau.

II

Wesley Mitchell once related that his family claimed to be descended from an Experience Mitchell, said to have come over on the Mayflower, adding dryly that he could not vouch for the justice of the claim. However that may be, it is incontestable that Mitchell's forebears hailed from New England. His father, John Wesley Mitchell, was born on a farm in Avon, Maine, December 30, 1837. In time he became a physician, saw service in the Civil War as an army surgeon, leaving with the rank of Brevet Colonel. From a wound received during the war he suffered throughout his life. He married Lucy Medora McClellan, the daughter of a Middle Western farmer, whose ancestors can be traced to Massachusetts. Wesley Clair was their second child, born on August 5, 1874 in Rushville, Illinois. Soon the number of children grew to seven. They were devoted to one another, and loved and admired their parents.

Young Clair matured rapidly. The family's means were scant, and his father repeatedly ill. Clair had the opportunity to learn at first hand about economic struggle, and its moral concomitants in

[2] National Bureau, *Twenty-fifth Annual Report,* p. 8.

sturdy folk. In a letter to Lucy Sprague, shortly before their marriage, he wrote of his parents:

Such strength of character as they possess I've never found elsewhere. But they could not help resting a part of family responsibilities on me, as the eldest son, far too early. I had to think about money matters, to learn the hard side of life, when most children are free from care. No doubt this fact strengthened my bent for reading and the world of imagination which reading helps to enlarge.[3]

Clair found another refuge in spinning logical exercises and relating them to facts. Often he engaged in theological discussions with his grand aunt, who "was the best of Baptists, and knew exactly how the Lord had planned the world". Mitchell liked to tell of his "impish delight in dressing up logical difficulties" for her. Unable to dispose of them, she "always slipped back into the logical scheme, and blinked the facts in which" he "came to take a proprietary interest".[4]

Despite the straitened circumstances of his family, Clair managed to go off to Chicago, where he studied under the remarkable faculty assembled by President Harper at the new university. In the summers he worked on the family farm, and in the winters he knew how to live on next to nothing. To a boy of his "experience and temperament college was a shining opportunity, not a dull duty".[5] Years later he drew a lively sketch of his college days:

I began studying philosophy and economics about the same time. The similarity of the two disciplines struck me at once. I found no difficulty in grasping the differences between the great philosophical systems as they were presented by our text-books and our teachers. Economic theory was easier still. Indeed, I thought the successive systems of economics were rather crude affairs compared with the subtleties of the metaphysicians. Having run the gamut from Plato to T. H. Green (as undergraduates do) I felt the gamut from Quesnay to Marshall was a minor theme. The technical part of the

[3] Letter to Lucy Sprague, October 18, 1911.

[4] Letter to John Maurice Clark, August 9, 1928. See Clark, *Preface to Social Economics*, p. 410. Originally printed in *Methods in Social Science*, edited by Stuart Rice.

[5] See note 3.

theory was easy. Give me premises and I could spin speculations by the yard. Also I knew that my 'deductions' were futile. . . .

Meanwhile I was finding something really interesting in philosophy and in economics. John Dewey was giving courses under all sorts of titles and every one of them dealt with the same problem—how we think. . . . And, if one wanted to try his own hand at constructive theorizing, Dewey's notion pointed the way. It is a misconception to suppose that consumers guide their course by ratiocination —they don't think except under stress. There is no way of deducing from certain principles what they will do, just because their behavior is not itself rational. One has to find out what they do. That is a matter of observation, which the economic theorists had taken all too lightly. Economic theory became a fascinating subject—the orthodox types particularly—when one began to take the mental operations of the theorists as the problem. . . .

Of course Veblen fitted perfectly into this set of notions. What drew me to him was his artistic side. . . . There was a man who really could play with ideas! If one wanted to indulge in the game of spinning theories who could match his skill and humor? But if anything were needed to convince me that the standard procedure of orthodox economics could meet no scientific tests, it was that Veblen got nothing more certain by his dazzling performances with another set of premises. . . .

William Hill set me a course paper on 'Wool Growing and the Tariff'. I read a lot of the tariff speeches and got a new sidelight on the uses to which economic theory is adapted, and the ease with which it is brushed aside on occasion. Also I wanted to find out what really had happened to wool growers as a result of protection. The obvious thing to do was to collect and analyze the statistical data. . . . That was my first 'investigation'. . . .[6]

By the time he graduated from college, Mitchell knew he should devote himself to economic research. Laughlin and Dewey busied themselves on his account, and helped him find the material path to the doctorate, which he attained in 1899 *summa cum laude*. Mitchell embraced a university career eagerly. He began teaching at the University of Chicago in the autumn of 1900. In January 1903 he followed Adolph Miller, one of his former teachers, to the

[6] See Clark, *op. cit.*, pp. 411-2. Mitchell warned Clark that he might be rationalizing. In his diary he noted August 8, 1928: "Wrote more about myself to Maurice Clark, getting more doubtful about validity of what I was saying." Mitchell consented to the publication of the letter with considerable reluctance.

University of California. Mitchell liked teaching and always attended conscientiously to his classes, but he was the investigator first and teacher second. He valued the career of a university professor primarily because it enabled him to engage in creative investigation. From a year spent with the Census Office, he had learned that he could not be happy except as his own master. For a while he was an editorial writer for the *Chicago Tribune*, but newspaper work involved too many compromises with his sense of craftsmanship. He had a sample of executive work at Red Cross Headquarters in San Francisco after the earthquake, and as the superintendent of field work for the Immigration Commission while it was being organized. But he did not deem any of these tasks as significant as those he had found for himself. In one of his rare moments of self-examination, he wrote Lucy Sprague:

> I have deliberately chosen the life in which certain kinds of things were likely to happen. . . . My character has determined my life much more than my life has moulded my character.[7]

III

The eighteen-nineties were an exciting period for a young man entering the study of economics. Agrarian discontent was widespread, and labor disputes ominous. Tariffs, trusts, railroads, and the income tax were much discussed, but the fate of the nation's monetary system dominated every other issue. The price of silver was declining, and the proponents of 'easy money' campaigned actively for its 'free and unlimited' coinage. Their cause was measurably advanced by an Act of 1890 requiring sharply increased purchases of silver by the Treasury. The Senate's passage of a free-coinage measure in 1892 intensified the anxiety of reputable circles. Fear for the safety of the gold standard and the established economic order spread. Foreign capitalists sought safety by dumping securities on the New York market, and withdrawing their balances in gold. Domestic hoarders added to the drain on bank reserves and on the Treasury's gold stocks. In May 1893 an old-fashioned panic broke loose, banks suspended or limited payments, and a severe de-

[7] See note 3.

pression of economic activity developed. Grave uncertainty about the nation's money continued until Bryan's decisive defeat at the polls in 1896 practically closed the issue for a generation.[8]

These stirring events imparted a monetary slant to Wesley Mitchell's economic thinking, which deepened with the years. In the realistic atmosphere of Chicago's economics department, the subject of money was steadily and vigorously threshed out. To Professor J. Laurence Laughlin it was a plain duty to enlist the interest of students in the unsolved problem of the monetary standard. An apostle of 'sound money', he fought heresy with unfailing energy. But he was as honest as he was orthodox, and did more to stimulate students to think for themselves than his more original colleagues.[9] Laughlin warmly encouraged able youth. In March 1896 the *Journal of Political Economy,* of which he was editor, featured an article on "The Quantity Theory of the Value of Money". The author was Wesley C. Mitchell, a senior at college.

This essay played a role in the polemical literature of its day, and makes interesting reading still, despite its youthful crudities. Some of the traits that made Mitchell a strong constructive force in economics—a concern with basic issues, analytical skill, lucidity, and predilection for statistical testing—are already in evidence. In taking up the relation between the quantity of money and the level of prices, Mitchell went straight to the scientific issue underlying the shifting currency debates of the day. He displayed skill both in breaking the problem down into simple elements and clothing his reasoning in a clear and orderly prose. Most revealing of all is his emphasis on the complexity of the forces at work and the need for empirical testing. Let me quote a passage:

> Deductive reasoning . . . is proverbially likely to lead the inquirer astray, unless its results are checked and corrected by inductive investigation. Such a theoretical examination as the above might well

[8] See the dramatic sketch of this period, drawn years later by Wesley Mitchell in his *Business Cycles* (1913), pp. 48-62.

[9] In his letter of August 9, 1928 to Clark, cited above, Mitchell referred only incidentally to Laughlin. A year later, on the occasion of the dedication of the Social Science Research Building at the University of Chicago, Mitchell made good the omission. See his paper "Research in the Social Sciences", reprinted in *The Backward Art of Spending Money;* and especially his article, "J. Laurence Laughlin", *Journal of Political Economy,* December 1941.

be complemented by applying the test of fact to the theory. If it were found to offer a satisfactory explanation of the price phenomena of actual life, a strong presumption would be created against the criticisms suggested. If, on the other hand, the theory failed to account for observed facts, the case against it would be more complete.[10]

And having given his first public sermon on methodology, Mitchell proceeded to practice what he had preached. This college youth took it as a matter of course that a "workman who wanted to become a scientific worker" had a responsibility to check his speculative reasoning.[11]

During the next several years Mitchell contributed regularly to the *Journal of Political Economy.* Several of his articles dealt with the greenback issues of the Civil War—the subject of his doctoral dissertation. If Laughlin expected from Mitchell a learned monograph on the folly of paper issues, he was doomed to partial disappointment. "To stand apart and distribute praise or blame from an academic retreat some forty years later" struck Mitchell as "a failure to understand the real problem". He quickly saw significance in "the long chain of events which constrained the federal government to develop a policy which no one had planned". He got interested in the economic consequences of the greenbacks and, not being content with a qualitative analysis, "had to invent ways of measuring their effects".[12] The result was the substantial volume, *History of the Greenbacks,* which has served as a standard authority on the Civil War inflation since its publication in 1903.[13]

In this work Mitchell analyzed the fiscal embarrassments of the federal government that led to the greenbacks, but he put the main emphasis on their broad consequences—the confusion in the monetary circulation, the premium on gold, the rise of commodity prices at wholesale and retail, and the intricate and painful readjustments of the earnings of the people. He did not explicitly raise any important questions about the theory of value and distribution, but his quantitative and historical approach forced to the surface vari-

[10] *Journal of Political Economy,* March 1896, pp. 157-8.

[11] See Clark, *op. cit.,* p. 413. [12] See note 3.

[13] Its full title is *A History of the Greenbacks, with Special Reference to the Economic Consequences of Their Issue: 1862-65.*

ous features of economic organization which had not received much attention in the theoretical literature. The usual explanations of the value of money stressed the quantity in circulation; yet Mitchell noticed that the premium on gold shifted regularly with the fortunes of the Northern armies. This fact among others led him to attribute the variations in the premium to the "varying estimates which the community was all the time making" of the government's ability to redeem its notes.[14] His studies indicated that during the Civil War the recipients of profits gained at the expense of the rest of the community, especially of persons who lent capital at interest. But why did the high rate of profit not lift the rate of interest? Here Mitchell found a place for uncertainty—that is, the inability to foresee changes in the price level. Again, Mitchell observed that the revolution in prices left some commodities behind, that wages lagged behind prices, and that the lag was not the same in all industries. These facts led him to examine the obstacles to "readjustment in the scale of money payments"[15]—contracts, convention, and the push and pull of the bargaining process. At a time when most economic theorists were busy reformulating the essentials of Ricardo's theory of competitive price or Cournot's theory of monopoly price, Mitchell was beginning to hammer out a new problem in price theory—the relations that bound prices together in a system of responses through time.

This problem came to his attention in the course of work with factual records. Mitchell's prodigious industry was revealed for the first time in his *History,* as was his superb skill in organizing a great mass of factual material and extracting from it significant generalizations. He made extensive new calculations, set out the statistical records in full, explained their derivation, and noted their shortcomings. An experimental mind was obviously at work, carefully checking one piece of evidence against another, yet stopping short of pedantry. So gracefully did Mitchell move back and forth between theoretical reasoning and factual documentation that the need for whatever statistical detail he presented was hardly ever left in doubt. These traits became more prominent still in Mitchell's later work.

[14] *Ibid.,* p. 199.

[15] *Ibid.,* p. 139.

Let me illustrate some of these generalities by showing how Mitchell handled the problem of the price level. Having taken on the task of measuring the effects of the paper issues, the need to ascertain variations in the price level was obvious. For that purpose Mitchell could have used Falkner's index of wholesale prices. He decided against this convenient procedure, first, because Falkner's index was annual and did not permit close comparison with the highly oscillatory price of gold, second, because Falkner's price quotations referred to different dates of the year—which may distort the actual variations in the value of money in a period of rapid change. In view of these difficulties, Mitchell embarked upon the laborious job of constructing a new index of wholesale prices by quarters. He refined it by adjusting the effective weight of certain commodities such as cotton, and supplemented arithmetic means of price relatives with medians. Then he checked the results by constructing another index from independent observations, viz., records of prices paid for numerous commodities by various federal agencies. But to trace the course of events, indexes of retail prices and of the cost of living were also needed. Since measures of this type did not exist, Mitchell proceeded to devise them. The indexes were computed on different plans, and compared with one another and the wholesale price index. When Mitchell needed some specific classification, he did not hesitate to make it. For example, he believed that the rise in the cost of living was the main factor in driving wages upward. This hypothesis he tested by constructing separate indexes of retail prices in the East and West, and comparing their movements with those of corresponding indexes of wages.

The extensive experience with statistical records which Mitchell gained in writing the *History of the Greenbacks* led him to more discriminating views on the quantity theory of the value of money than he had expressed in his early essay. He now observed that statistical attempts to deal with the quantity theory "must always be inconclusive so long as there are no accurate data regarding the volume of exchanges to be performed by the use of money and the rapidity of circulation". Since even the quantity of money during the Civil War was shrouded in obscurity, "a rigorous comparison between the quantity and the gold value of the currency or between quantity and prices" was "out of the question". Mitchell neverthe-

less remained critical of the quantity theory, and advanced the hypothesis that "the quantity of the greenbacks influenced their specie value rather by affecting the credit of the government than by altering the volume of the circulating medium".[16] In an article published shortly after the *History of the Greenbacks,* Mitchell took a more constructive approach to the quantity theory, pointing out that the participants in the continuing debate failed to define basic concepts precisely or to measure the importance of variations in the money supply relatively to other factors. Repeating the self-criticism already made in the *History,* he noted also that his youthful essay on the subject was by no means blameless.[17] Forthrightness was one of Mitchell's outstanding traits, and is no less responsible than his scientific craftsmanship for the moral authority he later exercised over his colleagues at the National Bureau and, for that matter, over the entire profession of economics.

IV

The California decade was decisive for Mitchell's personal and scientific life. Here he made new friends. Here he met with a poetry circle, giving and finding literary joys. Here he discovered Lucy Sprague, the gifted Dean of Women who in 1912 became his wife. Here he experienced beautiful sunsets, long camping trips, and the joy of mountain climbing. Here he glimpsed the vision of an expanding money economy, and expressed its fundamental rhythm in his unforgettable *Business Cycles.* Here also he learned to get on with the two conflicting sides of his nature, each becoming more insistent: one driving him furiously to hypotheses of ever wider scope, the other holding him down to the facts needed to support or refute the generalizations.

Mitchell was a lonely man in these years of intellectual struggle, despite tennis and billiards, dining out and dancing parties. The last few years at California he withdrew more and more into him-

[16] *Ibid.,* pp. 207-8.

[17] "The Real Issues in the Quantity Theory Controversy", *Journal of Political Economy,* June 1904, p. 405; and *History of the Greenbacks,* p. 208.

self, and worked hard even by his own standards. To Lucy Sprague he wrote before their marriage:

> Outwardly I live in the accredited academic fashion, and doubtless I have insensibly acquired through long association pedantic modes of expression. But spiritually I acknowledge no kinship with these passive folk. My world is the world of thought; but the world of thought has a realm of action and I live there. It is a place where one has to depend upon himself—his own initiative, his own sustaining faith. My danger in this realm is not from lack of vigor, but from lack of caution.[18]

While working on the monetary upheaval of the Civil War, Mitchell gave much of his leisure to the history of economic institutions and ideas. These studies led him into ethnology and psychology, which soon consumed an increasing part of his energies. At California he had the opportunity to teach whatever subjects he liked and to experiment as he would. Mitchell flourished in this atmosphere of freedom. Promptly he settled on a course in primitive culture, exploring the "origin and early development of fundamental economic customs and institutions". This course in Economic Origins he supplemented with several on current organization—Principles of Economics, Money, Banking, and Problems of Labor. The experiment brought out in sharp relief the peculiar sway of pecuniary forces in modern society. Soon Mitchell was at work on a course in the Theory and History of Banking, trying to forge links between man's remote past and the current scheme of pecuniary institutions. At the same time he busied himself with technicalities of international finance, which he felt he needed to round out his knowledge of money. In the academic year 1905-06 he gave for the first time a course on the relation between the money economy and business fluctuations. Thus, his offering that year included Economic Origins, the Theory and History of Banking, and Economic Crises and Depressions in the fall semester; and Money, International Exchanges, and Problems of Labor in the spring. Two years later he began reaping the harvest of this extraordinary preparation for constructive work in economic theory. The courses on Economic Origins, Labor, and International Ex-

[18] See note 3.

changes had served their purpose, and he supplanted them with the History of Economic Thought and Economic Psychology.

Mitchell has described succinctly this period of storm and stress:

> When I came to California I still had the proofs of the *History of the Greenbacks* to read and the plan of a continuation from the close of the war to the resumption of specie payments to execute. While I was working on the latter, the ferment of philosophy and ethnology was gradually widening my notions of what economics ought to be. I held to my old tasks long enough to complete the statistical apparatus for the second volume on the greenbacks and to publish it as *Gold, Prices, and Wages under the Greenback Standard.* But I wanted to be at something larger in its scope and more penetrating in its interest than this detailed work with a passing episode in monetary history. My rather vague notions gradually crystallized into the idea that the important matter to understand about money is the money economy—that is, the cultural significance of the highly organized group of pecuniary institutions, how they have developed since the middle ages, how they have gained a quasi-independence, and how they have reacted upon the activity and the minds of their makers.[19]

Gold, Prices, and Wages was published in 1908. It satisfied Mitchell even less than the *History.* To a mind bent on large generalizations but willing to accept only what is rooted in experience, it was natural to think of *Gold, Prices, and Wages* as the "statistical apparatus of a book still to be written", just as it was natural to regard the *History* as a mere fragment.[20] The *History* was a monograph of a "fragmentary character" because it stopped short of the downward revolution in prices that followed the Civil War; also because it failed to compare the Civil War inflation with similar episodes across the centuries in this country and abroad. *Gold, Prices, and Wages* was the "statistical apparatus of a book still to be written" because it remedied only in part the first of these deficiencies of the *History.* But Mitchell's contemporaries shared neither his imperial conceptions nor his misgivings. The formidable companion piece of the *History* was quickly recognized as a great work of scholarship, and remains an authoritative source on the period from 1862 to 1878.

[19] See note 3.

[20] See the prefaces to both volumes.

In this volume[21] Mitchell carried forward, extended, and refined the laborious measurements first presented in the *History*. His statistical experiments set a new standard in economics for analyzing mass observations over time, and his charts and tables set a new standard for presenting results. Unwilling to allow averages of price changes to bury the variety of movements they summed up, he hit upon the device of deciles—a technique that has since been widely used.[22] The style, lucid always, became more dignified, and itself a symbol of elegant organization of an enormous range of materials. But *Gold, Prices, and Wages* was a good deal more than a technical *tour de force*. Economic analysis lives through its pages, and the final chapter is devoted to nothing else. The causal links between the premium on gold and the level of wholesale prices, which were left uncomfortably vague in the *History,* are here developed with masterly care. Another theoretical contribution is the generalization of lagged response—wholesale prices behind gold, retail prices behind wholesale, the cost of living behind retail prices, wages behind the cost of living—and the attempt to bring the system of responses under a unified explanation.

The statistical materials for the greenback period gave Mitchell a lively impression of the magnitude and diversity of economic fluctuations. During 1862-78 the country experienced two price revolutions, a major boom, a crisis, a great depression, and sundry minor fluctuations. These movements stood out in time series, clamoring for attention. At the close of the book Mitchell noted that his tables "suggest more problems than they solve". Let me quote from his concluding section on the "economic significance of the price-revolutions of the greenback period":

> Writers upon money usually state that it performs three functions, serving as a common denominator of value, a medium of exchange, and a standard of deferred payments. To enumerate the functions of money in this fashion, however, is very far from suggesting the

[21] The preparation of the statistical material was aided by a grant from the Carnegie Institution.

[22] See Mitchell's earlier paper on this subject, "Methods of Presenting Statistics of Wages", *Publications of the American Statistical Association,* Dec. 1905.

importance of the role which money plays in economic life. To understand this role attention must be fixed upon the complex mechanism of prices, rather than upon money itself. . . . Men who make use of the system of prices in their economic activity are constrained to obey its logic and to adapt themselves as best they may to its technical exigencies. . . .

Perhaps the clearest conception of the price-revolutions is gained by regarding them as changes made by the business community in its effort to adapt itself to the monetary conditions created by an inconvertible paper currency. . . . An economic theorist, accustomed to imagine immediate and accurately gauged changes of prices occurring in a frictionless hypothetical market under the stimulus of some 'disturbing factor', might perhaps regard this lagging of one class of prices behind another as an important deviation from the 'natural' course of events. But a student of prices in less highly organized business communities, or an economic historian familiar with earlier price-revolutions, would be much more impressed by the rapidity and system with which prices of different classes of goods were changed, than by the lack of completeness in the adjustment.[23]

The 'economic theorist' and 'economic historian' of this quotation are, of course, none other than Wesley Mitchell himself. He had arrived at the conception of an interdependent system of prices, as had Walras and Marshall before him; and now, pondering the results of his statistical inquiries, he was feeling his way to the theory that this interdependent system, shot through as it was with lagged responses, generated business cycles instead of equilibrium.

V

Monetary theory before 1914 was concerned mainly, if not exclusively, with the causes of variations in the value of money. This problem attracted Mitchell at the start of his scientific career, but before a dozen years elapsed he broke through to a new conception of monetary theory. From the quantity theory of money he passed first to the analysis of a particular monetary inflation, next to the evolution of the price system and its impact on human be-

[23] *Gold, Prices, and Wages under the Greenback Standard,* pp. 279, 281-3.

havior, later to the "recurring readjustments of prices"[24] which led him into business cycles.

In December 1905, while working out a syllabus for a course on Money, Mitchell spanned in one vision the unexplored realm between the quantity theory of money and business cycles. To quote from a letter of that date:

I am trying to work out an account of the variations in the general price level by a rather novel method. The traditional method of attack is to apply the theory of value to the special case of money prices, and the traditional result is either a reaffirmation of the quantity theory, or a denial of its adequacy. In neither case does one learn *how* changes in the price level are brought about. . . . Another method of attack is to apply the microscope to the case of particular articles. . . . I am trying to steer a crooked course between these two methods, by dealing with conditions of demand and supply abstractly considered, but with the business man's apprehension of these conditions as price factors; and on the other hand to take the business man's point of view also in considering not a single article but all the articles that he buys and sells. The result is that I am involved in an analysis of an exceedingly complex set of business considerations. . . . I have begun with the influence of consumers on the level of retail prices and then taken up the retailer's position as a price maker. This morning I came to a tentative close with the retailer and now face the wholesaler. After him will come the manufacturer, the wage earner, the dealer in raw materials, the farmer, the speculator, the investor, the promoter and the gold miner.

When I have worked out the peculiarities in the positions of each of these gentry in turn with reference to the making of prices, then I shall have to give an account of the way in which important changes in the economic situation—like marked alterations in the harvests, increases in the gold supply, changes in the standard, credit difficulties, changes in productive processes, etc.—affect prices, and how the price disturbances are propagated from one group to another. Finally, I may become very ambitious and attempt to interpret the movement of prices, wages, interest, etc., since 1890 by way of illustrating the interactions of the various factors. Of course I am not fond enough to fancy that I shall get more than a skeleton of all this drawn up before next semester, but I am very anxious to have such a skeleton in order to know what to do next. If I succeed I may be able to evolve some flesh during the next few years with which to drape the bones.[25]

[24] See Clark, *op. cit.*, p. 414.

[25] Letter to a friend, December 20, 1905.

When Mitchell wrote these lines he was still at work on the second volume of the greenbacks. The task for which he soon set aside this investigation was a theoretical treatise on money—a study in which he at first saw no place for statistics.

Mitchell's interest at this time centered on the evolution of the price system, its current institutions and their interactions. Ethnological studies had shown him that money was far more than the mere "contrivance for sparing time and labor"[26] the classical economists had supposed it to be. The fact most suggestive of its part in economic development was that society has gradually evolved an economic organization based on the making and spending of money incomes. Between men's activities as producers of goods and their activities as consumers, a vast network of financial machinery and prices has intervened. "Monetary and banking systems, practices regarding mercantile credits, the pecuniary organization of business enterprises, the financial policies of governments, the interadjustments of the system of prices, the machinery of security markets, all are features of the money economy which man has made only to fall under their power."[27] The interrelations of prices, not industrial capacity or men's desire for useful commodities, determine what is now produced, how much is produced, and the shares of the final product accruing to participants in the productive process. Since money is the key to the understanding of economic life, it must be the root of economic science. Mitchell turned to this grand theme, and started writing a "Theory of the Money Economy".

The manuscript of *Gold, Prices, and Wages* was completed toward the end of June 1907. Several weeks earlier Mitchell had begun drafting the first chapter of the "Theory of the Money Economy". He stayed with this manuscript until March 1908, when he shifted to work he had agreed to do for the Immigration Commission. From the end of April through the summer he was fully occupied with this activity. The following academic year he lectured at Harvard on money and business cycles. Although his

[26] The phrase is J. S. Mill's. For the context, see his *Principles of Political Economy* (Ashley ed.), p. 488.

[27] Mitchell, "The Rationality of Economic Activity", *Journal of Political Economy*, March 1910, p. 209.

academic duties left little time for the "Theory of the Money Economy", he managed to go through a considerable amount of historical literature and to look into statistical records, especially such as bore on the crisis of 1907. Meanwhile he had become uneasy about his manuscript, and began modifying plans in a fateful direction. In his own words:

> I was working away from any solid foundation—having a good time, but sliding gayly over abysses I had not explored. One of the most formidable was the recurring readjustments of prices, which economists treated apart from their general theories of value, under the caption 'Crises'. I had to look into the problem.[28]

When Mitchell returned to California in the autumn of 1908, he brought with him a firm resolve to work out promptly "the subject of 'Business Cycles' as a *Vorarbeit* of the 'Money Economy' ".[29]

He lost no time getting started. On September 3 he began sketching an outline. On September 15 he hired an assistant, at his own expense, to prepare tables of interest rates—a subject he had omitted in *Gold, Prices, and Wages,* and to which he had paid only slight attention in the *History.* In December he was ready to turn to security prices, another subject he had neglected in earlier studies. Mitchell was working from a definite plan, starting with the subjects he knew least well, and determined to carry out a comprehensive study of the "recurring readjustments of prices" which seemed to drive and shape the industrial activities of the money economy. He worked at a feverish pace, undeterred by the vast magnitude of his enterprise, seeking to embrace every significant aspect of economic activity, to reach back statistically to 1890, and to cover the four countries in which the money economy had reached its fullest expression—the United States, Great Britain, Germany, and France. Not finding the statistics he needed on commodity prices, wages, stock prices, bond prices, bond yields, or the money supply, he made extensive calculations, pioneering boldly in each field. Much of the clerical work he did himself, and he supervised and checked all of it.

[28] Clark, *op. cit.*, p. 414.

[29] See note 3.

How vast was the range of factual information he tapped, and of the theoretical and monographic literature he embraced, a casual inspection of his *Business Cycles* will indicate. The work prospered. In April 1911 Mitchell wrote exultantly: "The various difficulties of explanation seem to dissolve of themselves as I approach."[30] There were occasional setbacks: "Now that I've come to the point of discussing crises themselves I am temporarily at a loss. Everything happens all at once, and to arrange an orderly exposition is more difficult than I had supposed."[31] But the setback was momentary; within a fortnight the chapter on "Crises" was drafted. Mitchell was pleased as he stopped to look back: "My own impression is that the chapters are rather good—particularly the crucial one on the breeding of crises."[32] Months of recasting and revision followed. Finally, on October 15, 1912 he sent the last of the manuscript off to the printer. Except for the proofs, *Business Cycles,* a 600 page quarto, was completed. In the amazingly short time of three years, Mitchell had worked out and written one of the masterpieces in the world's economic literature. And this burst of creative activity carried with it other outstanding achievements. Besides attending to his duties at the university during this period,[33] Mitchell managed to compose the famous articles on "The Rationality of Economic Activity" and "The Backward Art of Spending Money", to write a half dozen technical papers growing out of the work on business cycles, to review the voluminous publications of the National Monetary Commission,[34] to woo and win Lucy Sprague, and to spend several months in Europe with his bride.

Business Cycles is a beautifully organized and closely reasoned treatise. More than that, it is a landmark in the development of economics. No other work between Marshall's *Principles* and Keynes' *General Theory* has had as big an influence on the economic thought of the Western World. The simplest way to make clear the novelty and scientific force of Mitchell's work is to com-

[30] Letter to a friend, April 3, 1911.

[31] Letter to a friend, April 17, 1911.

[32] Letter to a friend, May 2, 1911.

[33] During the academic year 1910-11 Mitchell was on leave, at two-thirds salary.

[34] In the *Quarterly Journal of Economics,* May 1911, pp. 563-93.

pare his approach to business cycles with that of earlier investigators.

The traditional method of accounting for business cycles was to start from simple assumptions, based on common sense, concerning the state of business in equilibrium or in 'late' prosperity or depression; then call attention to some new factor arising from within or outside the business situation; finally, show how the adaptations of the business community to the new factor generated a cyclical movement. Since imaginative thinkers had no difficulty in assigning a critical role to one factor after another, plausible theories of business cycles multiplied abundantly. Occasionally a theorist would use statistical data, but as a rule their function, when called upon at all, was merely to support or illustrate a particular stage of an argument. Mitchell broke with this tradition. Instead of starting theoretical analysis with assumptions concerning the state of business in late depression, such as might be suggested by common sense, he started with assumptions derived from systematic observations of experience. Again, instead of passing from these assumptions, reinforced by others about the arts and human motives, to supposedly tight inferences concerning the condition of business in the next stage of the cycle and stopping there, Mitchell checked his reasoning by consulting systematic observations of experience. This plan of working had two revolutionary consequences. First, business cycle theory became, or at least approached, a tested explanation of experience instead of an exercise in logic. Second, in the process of observing economic life in its many ramifications, the theory of business cycles broadened into a theory of how our economic organization works.

Mitchell began with a review of current theories of business cycles, then paused to outline his method of investigation:

> One seeking to understand the recurrent ebb and flow of economic activity characteristic of the present day finds these numerous explanations both suggestive and perplexing. All are plausible, but which is valid? None necessarily excludes all the others, but which is the most important? . . .
>
> There is slight hope of getting answers to these questions by a logical process of proving and criticizing the theories. For whatever merits of ingenuity and consistency they may possess, these theories have slight value except as they give keener insight into the phe-

nomena of business cycles. It is by study of the facts which they purport to interpret that the theories must be tested.

But the perspective of the investigation would be distorted if we set out to test each theory in turn. . . . For the point of interest is not the validity of any writer's views, but clear comprehension of the facts. To observe, analyze, and systematize the phenomena of prosperity, crisis, and depression is the chief task.[35]

Before passing to this task, Mitchell developed his theoretical orientation in a chapter on the organization of the money economy, so that the statistical facts could be seen as "details of a larger system". The "system" rests on the proposition that the ebb and flow of activity depends on the prospects of profits, except in times of crisis when a quest for solvency supplants profits as the main driving force of business enterprise. Mitchell used current theories of business cycles as suggestions concerning the processes that were worth examining, and his sketch of the money economy as the analytical framework into which the statistical chapters of Part II were fitted. Every one of these chapters "bears upon the crucial problem of business profits, either by dealing with factors which determine profits, like prices and the volume of trade; or by dealing with necessary conditions for the successful quest of profits, like the currency, banking, and investment; or by offering direct gauges of business success and failure, like the statistics of profits themselves and of bankruptcies". And just as Mitchell's theoretical sketch of the "controlling factors" in a money economy provided a framework for the statistical analysis in Part II, so also it provided a framework for the theoretical analysis of "The Rhythm of Business Activity" in Part III.[36]

Mitchell's theory is cast in a mould of evolutionary concepts. Business cycles are not merely fluctuations in aggregate activity, but fluctuations that are widely diffused through the economy. They are therefore a product of culture, and arise only when economic activities have become largely organized on the basis of making and spending money incomes. Again, business cycles

[35] *Business Cycles,* pp. 19-20. Part III of this volume was reprinted in 1941 by the original publisher, the University of California Press, under the title *Business Cycles and Their Causes.*

[36] *Business Cycles,* pp. 20, 91, 92.

are not minor or accidental disruptions of equilibrium, but fluctuations systematically generated by economic organization itself. As prosperity cumulates, costs in many lines of activity encroach upon selling prices, money markets become strained, and numerous investment projects are set aside until costs of financing seem more favorable; these accumulating stresses within the system of business enterprise lead to a recession of activity, which spreads over the economy and for a time gathers force; but the realignment of costs and prices, reduction of inventories, improvement of bank reserves, and other developments of depression gradually pave the way for a renewed expansion of activity. In this theoretical scheme "the recurring readjustments of prices", which first attracted Mitchell's curiosity, play a crucial role, but so too do a host of interrelated industrial and financial changes. Each phase of the business cycle evolves into its successor, while economic organization itself gradually undergoes cumulative changes. Hence, Mitchell believed, "it is probable that the economists of each generation will see reason to recast the theory of business cycles which they learned in their youth".[37]

"The case for the present theory", Mitchell concluded, "and also the case against it, is to be found . . . in an independent effort to use it in interpreting the ceaseless ebb and flow of economic activity." During the thirty-six years that have elapsed since the publication of Mitchell's classic, knowledge of business fluctuations has been appreciably extended. Yet I know of no theoretical work that, taken as a whole, has met as well as Mitchell's old book "the practical test of accounting for actual business experience".[38] No one else has succeeded in tracing with comparable skill or knowledge the interlacing and readjustment of economic activities in the course of a business cycle, or developed as fully or as faithfully the typical process by which one stage of the business cycle gradually evolves into the next. I venture the prophecy that if Mitchell's homely work of 1913 were translated into the picturesque vocabulary of 'propensities', 'multipliers', 'acceleration coefficients' and the like, it would create a sensation in the theoretical world, especially if the translator were mindful enough

[37] *Ibid.*, p. 583.

[38] *Ibid.*, p. 570.

to shift passages here and there from the indicative to the conditional mood. However that may be, it is worth noting and remembering that much of the special vocabulary of today's theorizing centers around economic fluctuations, and that this was already Mitchell's central theoretical problem before World War I.

VI

Indeed, the basic design of Mitchell's economic thinking was laid down before he reached his thirty-fifth year. He had found his problem in the workings of the money economy—its evolution, present status, and impact on men's minds and activities. To this problem he brought theoretical insight, historical knowledge, and the profound generalization that "during the long centuries that men have been gaining their mastery over the use of money, pecuniary concepts have been gaining a subtler mastery over man".[39] Had Mitchell pursued his ideas on the money economy in the speculative manner fashionable among economic theorists, he might have added a brilliant treatise to the active inventory of economic theory and stopped there. Instead, he sought to develop a theory that would enable men to come to grips scientifically with social problems, and therefore worked out first the "most technical phase" of the money economy—that is, the phenomena of business cycles. He thought of *Business Cycles* as part of "the necessary pioneer work toward the construction of useful economic theory".[40]

Mitchell put the finishing touches on the manuscript of *Business Cycles* in London during October 1912. Upon his return in December he took up residence in New York, wishing to observe the nerve center of the money economy at close range. He joined the Columbia faculty in 1913, and soon achieved outstanding success as a teacher. Between the completion of *Business Cycles* and the inception of his researches at the National Bureau, Mitchell largely devoted his time to empirical studies of prices

[39] Mitchell, "The Rationality of Economic Activity", *Journal of Political Economy*, March 1910, p. 208.

[40] See note 3.

and critical and historical studies of economic theory. During this period he wrote a masterly paper on Wieser's *Social Economics,* then unknown to English-speaking readers, and the famous essays "The Role of Money in Economic Theory" and "Bentham's Felicific Calculus".[41] The latter was originally intended as a chapter of a book on Types of Economic Theory which Mitchell began writing in 1916. Upon entering government service early in 1918, he had to lay this manuscript aside. He returned to it briefly after the war and looked forward to completing it when he retired from the National Bureau. Then his arduous labors on business cycles would be at an end and his mental muscles still nimble enough for the lighter task of literary scholarship! He was not privileged to realize this dream, nor are we to share its fruit. Some notion of the intellectual flavor of Mitchell's manuscript—its social vision, theoretical power, and literary distinction—may be gained from the essays[42] collected in 1937 by Professor Joseph Dorfman under the title *The Backward Art of Spending Money.* But this volume gives hardly an inkling of the historical range of Mitchell's uncompleted manuscript, or of his brilliant analysis of the social conditions out of which classical political economy and its offshoots developed.

In 1914 Royal Meeker invited Mitchell to write an introduction to a bulletin by the Bureau of Labor Statistics on index numbers of wholesale prices. Mitchell responded with "The Making and Using of Index Numbers"[43]—a monograph in which he extended his earlier experiments in measurement, and discussed at length the practical problems involved in constructing and using index numbers. This study has had an enormous influence on statistical understanding and practice, both in this country and

[41] All three are reprinted in *The Backward Art of Spending Money.*

[42] Besides the one on Bentham, the paper on "Postulates and Preconceptions of Ricardian Economics", published in 1929, was adapted from his manuscript, which was the foundation also of some of his Lectures at Columbia on Types of Economic Theory. A mimeographed edition of the lectures, taken down stenographically by a student on his own responsibility, has circulated fairly widely.

[43] *Index Numbers of Wholesale Prices in the United States and Foreign Countries,* Bulletin of the U. S. Bureau of Labor Statistics, Whole No. 173, July 1915.

elsewhere. As late as 1938 the Bureau of Labor Statistics reissued the monograph to meet the "continuing demand, particularly in colleges and universities".[44] After completing the work on indexes of wholesale prices, Mitchell turned to a companion piece on stock prices, in which he analyzed methods in relation to uses, and carried out many experiments beyond those reported in *Business Cycles.* The results were published in the *Journal of Political Economy* for July 1916, under the title "A Critique of Index Numbers of the Prices of Stocks". Mitchell's six articles on security prices, published between 1910 and 1916 in the *Journal,* became the foundation for much of the later research and practice in this field.

Another of Mitchell's achievements just before the National Bureau got under way was the preparation of the *History of Prices during the War* under the auspices of the War Industries Board. Mitchell edited the publication and wrote two of its fifty-seven bulletins—*International Price Comparisons* and the *Summary.* This scholarly venture was due largely to Mitchell's initiative and organizing skill—traits that later proved invaluable to the National Bureau. After the Armistice, when the dominant mood in Washington was to demobilize promptly, Mitchell did as much as anyone to preserve the statistical work accomplished and to continue the new work started during the war. Three days after the Armistice was signed, he boldly requested authority not only to retain his staff in the Price Section, but to add a dozen men, so that the knowledge newly gained about price movements could be made available to economists and business men. Edwin Gay liked the idea and won Bernard Baruch over. The project itself was completed in a few months. Despite its hurried execution, the *History of Prices* proved to be a valuable reference source. One scientific novelty of Mitchell's *Summary* is a production index constructed so as to be precisely comparable with a price index. As far as I know, no one had ever carried out this obvious step before. Indeed, Mitchell was the first investigator to attack systematically the technical problems of weighting and industry grouping in the construction of a production index. It seems that there was hardly a thing to which he ever turned, large or small, on

[44] Bulletin No. 656 of the Bureau of Labor Statistics, p. iii.

which he did not leave some imprint of his originality and enterprise.

VII

At heart Wesley Mitchell was a reformer. Ever since taking up residence in New York he had participated in social causes—settlement work, woman suffrage, better schooling, adult education. For a while he taught carpentry to a class of youngsters. A year before the war's end he preached a lay sermon in All Souls Church, White Plains, on The Worlds We Make. In 1918 he joined James Harvey Robinson, Charles A. Beard, and Alvin Johnson in organizing the New School for Social Research "to take its position on the firing line" of new ideas. These activities were dear to Mitchell, yet he had no great faith in the improvisations of reformers. The reliable path to social reform, he felt, was through scientific investigation of social processes.

While still working on *Business Cycles* and unknown to fame, he wrote Lucy Sprague:[45]

> Ethnological studies have given me a peculiarly strong impression of the practical value of theoretical knowledge in human affairs. But to be of use theory must take hold of phenomena by their handles. Much the most effective handles are found in causal interconnections. . . . We putter with philanthropy and coquette with reform . . . and try to do what little we may to alleviate at retail the suffering and deprivation which our social organization creates at wholesale. What we need as a guide for all this expenditure of energy is sure knowledge of the causal interconnections between social phenomena. . . .
>
> Whether there is good prospect of accomplishing any results in economic theory within the present generation I am not sure. But . . . this task is more important and more vital, as well as more difficult, than the tasks of the people who are running the existing social machine or of the people who are trying to patch it.
>
> But I also know that few men could be found with more than a smile for my pretensions. . . . There is no use in proclaiming aloud a program of critical research, when you are not sure that any of the leads will repay working. Here the prospector must go off quietly by

[45] See note 3. Before the publication of *Business Cycles,* Mitchell's reputation was restricted to a relatively small professional circle.

himself and develop his claims before he can get recognition. And if the claims don't pan out well, he'll have to find his reward within himself—or go without.

Mitchell had gone off quietly by himself and demonstrated that broad economic generalizations based on empirical observation were possible. Hence, economic theory could make headway without such restrictive assumptions as a constant value of money or a full-employment level of income. The course of events tested and favored Mitchell's approach to economics. The threatening rise in prices was turning men's minds to the problem of business cycles. The war experience with economic mobilization emphasized the need for accurate quantitative information on national income, inventories, prices, the labor supply, and other basic factors in the economy. An increasing number of men now shared a sense of urgency about empirical research, if not faith in an empirical science of economics. In this atmosphere of social thinking the National Bureau was formed "to encourage, in the broadest and most liberal manner, investigation, research and discovery, and the application of knowledge to the well-being of mankind; and in particular to conduct, or assist in the making of, exact and impartial investigations in the field of economic, social and industrial science".[46]

Mitchell was forty-five when he assumed direction of the National Bureau. He brought rich personal gifts to the venture: character, a judicial temperament, self-assurance mellowed by wisdom, exacting scientific standards, a kind and understanding nature. More than that, he was a tireless scientific explorer, committed to social improvement through science and reason. He regarded the Bureau as an experiment which, if successful, might lead to similar work by others, the joint effort becoming in time a powerful instrumentality of progress. The Bureau meant also personal fulfillment. Here "a program of critical research" might actually be carried out, not just proclaimed "aloud". Here empirical investigations might be undertaken, broader and more funda-

[46] National Bureau, *Charter and By-Laws*. The by-laws were adopted by the Board of Directors on December 29, 1919; the certificate of incorporation was approved January 23, 1920; the first Annual Meeting of the Board, at which Mitchell was elected Director of Research, was held February 2, 1920.

mental than any yet attempted by economists. Here complementary technical skills could be pooled, and the process of developing new knowledge made more efficient. Here an investigator could subject his methods and results to the steady and searching scrutiny of skilled colleagues. Here hypotheses could be checked by statistical data, statistical data stimulate new hypotheses, and hypotheses new data. Here tested findings could cumulate, reinforce one another, and open up new problems, as was routine in the established sciences. Most important of all, here was an experiment in democratic action, men of many shades of political opinion joining in the undramatic enterprise of reviewing the factual findings of a technical staff. If a group so constituted as the National Bureau's Board of Directors could work harmoniously and accept staff investigations of a controversial question such as the proportion of the national income paid out in wages or accruing as profits, might not reason triumph over passion in an ever widening circle of men? Stirred by this vision, Mitchell put his great energies to the Bureau's task at once. His faith never wavered.

The subject selected by the Board of Directors for its first study was the size of the national income and its distribution. Nothing could have been more congenial to Mitchell. If modern economic life is organized on the basis of making and spending money incomes, economic analysis should start from that fact. To measure the magnitude of the national income and its principal components is to set out the framework of a moving economic system. This was the sort of problem on which Mitchell could work with enthusiasm. Willford I. King, Oswald Knauth, and Frederick R. Macaulay soon joined the staff, and the research of the National Bureau was launched. At the first meeting of the group held May 17, 1920, Mitchell urged the importance of both "spontaneity and system", sketched the preliminary work done on national income, and blocked out several methods of estimation. After further canvass of the problem, he and his colleagues decided that the hazards in estimating national income made it necessary to subject the operation to definite statistical controls. King then undertook to calculate the national income from the product side; while Knauth sought to determine the incomes received by the

public, to which he would add the undistributed income of business enterprises. The concept of income was, of course, the same for both, but the sources of information were entirely different. Mitchell reported the scientific design to the Directors:

> The plan of making two separate estimates of the National Income, quite independently of each other, set up a hard test of the work done by Mr. King and Mr. Knauth. We felt not a little nervous when the day came on which we first cast up the totals by Sources of Production and by Incomes Received. . . . When the largest discrepancy in any one year proved to be only 7 per cent we felt a marked increase of confidence in our work.[47]

This pioneering investigation was completed in less than two years and published in two volumes, a small book summarizing the findings, and a substantial volume giving detailed results, together with the sources and methods used.[48] Mitchell was largely responsible for writing the summary volume, which may justly serve as a model of exposition. It would be difficult to name another publication that has had comparable success in making 'irreducible and stubborn' facts tell a vivid and pertinent tale without stooping to oversimplification. The role of this volume in winning public and professional support for the National Bureau in its early years of struggle cannot be overestimated.

The last project planned by Mitchell was the study that Morris Copeland is now bringing to completion. Mitchell leaped at the opportunity offered by the interest of the Committee on Economic Development in money flows. The volume of monetary transactions is, of course, much larger than the national income, since it includes financial besides industrial transactions, as well as all intermediate stages of the latter. How much money do business enterprises pay out to the public? to government? to financial institutions? to one another? What of the payments by consumers, the government, financial institutions? How much money moves against commodities? services? securities? financial claims? In the

[47] *A Bold Experiment: The Story of the National Bureau of Economic Research* (Second Annual Report of the Director of Research, February 6, 1922), pp. 7-8.

[48] *Income in the United States: Its Amount and Distribution, 1909-1919.*

late spring of 1944 Mitchell spent several weeks compiling figures and ransacking sources, testing the feasibility of a quantitative study of the volume of monetary transactions and its subdivisions. These weeks of exploration were pure joy to Mitchell, whose special concern with business cycles never obscured an older and larger interest in the money economy. Reporting to the Board, he sketched the projected inquiry on money flows, then reflected prophetically: "It may be that this pioneering job will in time yield results comparable with those attained in national income, eventually to get incorporated into the statistical routine of a governmental bureau, and the thinking of all economists."[49] This report was Mitchell's 'swan song'. He had served twenty-five years as Director of Research, and requested relief so that he could have more time for his own work on business cycles.

The quarter century separating the first investigation of national income and the study of money flows is practically the full span of the National Bureau's history. From its original focus of national income, our research program moved outward, not according to a rigid plan, but on a principle enunciated by Mitchell at the beginning. Let me quote from his First Annual Report to the Board:[50]

I should like to submit a general suggestion, regarding the principle upon which future topics should be chosen. I think we should plan to complete our studies of the National Income, and work outward from that central field. It may be desirable to take up a few incidental inquiries . . . which we can manage without serious derangement of our main program; but it would be poor policy to scatter our energy over a considerable number of unrelated topics, however fascinating.

If you approve of the general policy I am suggesting, it would probably mean that after the current report is finished, we should take up for careful study the shares of wages, rent, interest and profits, and the subject of savings versus current consumption. . . . It is quite possible that still other investigations supplementing our first report may seem to be desirable by the time that report is finished.

May I also suggest one topic on which we shall come as soon as

[49] "The National Bureau's First Quarter-Century", in the Bureau's *Twenty-fifth Annual Report,* May 1945, p. 39. Cf. Copeland's note in Part Two of the present report.

[50] Presented February 7, 1921, not published.

we move outward from our central field? Our preliminary figures indicate that the National Income can scarcely be large enough to secure what we consider a decent standard of living for all American families. If the final figures are not much larger than we anticipate, they will lend new emphasis to the call for a greater output of staple commodities. But while all the producing interests may admit the desirability of having more and better food, clothing, and housing for our people, they also point out the difficulty of finding profitable markets for the current output. Here lies, indeed, the great economic problem of the future. . . .

Mitchell's suggestion of a basis for choosing new topics guided the National Bureau's development over the years. First, the subject of business cycles was added to the program, then the labor market, commodity prices, industrial productivity, financial operations, fiscal problems, and recently, international economic relations. From time to time the Bureau has undertaken *ad hoc* investigations, sometimes to tide over a period of stringency, more often to render important public service, such as the investigation of Federal Statistical Services made this year for the Commission on the Organization of the Executive Branch of the Government. But the broad history of the Bureau has been one of concentration on relatively few subjects, not piecemeal research. The program has developed from within the investigations themselves, one study growing out of another, reinforcing the studies in progress, making its direct contribution, and in turn raising fresh problems. Thus the deliberateness and consistency which guided Mitchell's life since boyhood became imbedded in the Bureau's work and shaped its development. By creating an atmosphere in which scientific work could flourish and in which capable investigators could work cooperatively, Mitchell laid the foundation for a research program that in time became cumulative and self-reinforcing, as last year's report "The Cumulation of Economic Knowledge" indicated.

VIII

Mitchell remained a working scientist while he served as Director of Research. He did not permit administrative work at the Bureau or professorial duties at Columbia to consume all his energy, as they easily might have. He was co-author of the first National Bureau publication, *Income in the United States, Vol. I* (1921). In 1927 his *Business Cycles: The Problem and Its Setting* was published. He was co-author of several other Bureau volumes: *Business Cycles and Unemployment* (1923), *Business Annals* (1926), *Recent Economic Changes* (1929), *Measuring Business Cycles* (1946), and *Economic Research and the Development of Economic Science and Public Policy* (1946). He contributed to the *Bulletin* and *Occasional Papers,* wrote enlightening introductions to many Bureau monographs, and a long series of *Annual Reports* which stimulated economic thinking and research at large. But the publications that bear Mitchell's name cannot by themselves convey his part in the Bureau's work on business cycles, or his role in inspiring and bringing to fruition its other investigations.

In 1921 when the study of national income was approaching completion, the Executive Committee considered what problem to take for its next investigation. The subject of business cycles was obviously "of great importance to all classes in the community". With the aid of the Bureau's resources, it could be pushed further than in Mitchell's 1913 book—already out of print. While a considerable amount of research was being done by others on the nature and causes of business cycles, no one was engaged in a "comprehensive survey of the whole". These reasons seemed sufficient to justify a thorough investigation. The plan called for a "systematic treatise" by Mitchell, supplemented by "two or three special studies of topics that have never been adequately investigated".[51] No one could foresee how the project would grow, what contributions it would make to knowledge, how much effort and time it would require, or that its vigorous director would not live to see it completed.

In economic literature there are many concepts of business cycles, not just one. Some familiarity with Mitchell's particular

[51] *A Bold Experiment,* cited above, pp. 9, 10.

concept is essential if the epic proportions of his investigation are to be understood. To Mitchell a business cycle meant more than a fluctuation in a single aggregate such as national income or employment. It meant also that the fluctuation is recurrent, and that certain repetitive features run through the recurrences. And especially it meant that the fluctuation is diffused through economic activity—appearing, as a rule, in prices as well as industrial activities, in markets for securities as well as for commodities and labor, in processes of saving and investment, in finance as well as in industry and commerce. Systematic fluctuations of this character are distinct from the irregular disturbances and seasonal rhythms to which business is commonly exposed. Not only that, they emerge at a late stage in the evolution of the money economy, when processes of production and consumption have become broadly organized on the basis of making and spending money incomes. Fluctuations of this type—that is, business cycles—can hardly occur until the different parts of an economy have been linked together by complex agencies of transport and credit. To understand how business cycles have emerged is to understand how our "business economy" has developed. And if business cycles are "not one phenomenon, but a congeries of interrelated phenomena",[52] any distinction between the problem of how business cycles run their course and of how our economic organization works cannot be other than artificial. In an outline of an Introductory Course in Economics that Mitchell once drew up, he put a section at the end entitled "Economic Process in Motion".[53] Its content was expressed in the following note: "Business prosperity, crisis, depression, and revival, discussed so as to bring in and review all that has gone before." In other words, business cycles encompassed the entire field of economics, and a theory of business cycles was to be a theory of capitalism itself.

This sweeping notion was already contained in Mitchell's 1913 volume, but he now tried to work out its implications more fully.

[52] *Business Cycles: The Problem and Its Setting,* pp. 63, 454.

[53] The outline is undated. From Mitchell's correspondence I judge that it was probably drafted May 23, 1909, in preparation for Introduction to Economics, which he was scheduled to teach in the fall. Note that he was then not yet working on his *Business Cycles.*

The statistical basis of the old book was restricted to a brief period, 1890-1911. It leaned heavily upon annual data, which often obscure essential features of business fluctuations. Its statistical techniques seemed primitive in the light of devices that time-series analysts were beginning to develop. Most serious of all, there were gaps in the evidence—especially on construction, inventories, retail trade, personal incomes, and business profits. In view of the rapid accumulation of new records and the improving knowledge about business fluctuations, Mitchell was eager to make a fresh attack upon the entire problem. At the beginning he expected that a single volume would suffice for the "systematic treatise". But as his irrepressible instinct of workmanship asserted its authority, the investigation deepened and lengthened. In reporting to the Board early in 1924 Mitchell observed: "I am eager to get the work done as rapidly as possible, but I am still more eager to do it as well as I can—and that takes time."[54] The first instalment, *Business Cycles: The Problem and Its Setting,* did not appear until 1927.

In the preface Mitchell explained that he was conducting the inquiry on the "general plan" of the 1913 volume. He added:

> My earlier impressions that business cycles consist of exceedingly complex interactions among a considerable number of economic processes, that to gain insight into these interactions one must combine historical studies with quantitative and qualitative analysis, that the phenomena are peculiar to a certain form of economic organization, and that understanding of this scheme of institutions is prerequisite to an understanding of cyclical fluctuations—these impressions have been confirmed. . . .

The confirmation came through extensive new research. Mitchell was now investigating business cycles on a scale that made his formidable 1913 volume look like an introductory sketch. While *The Problem and Its Setting* is a book of substantial size, its scope corresponds merely to the first three chapters of the 1913 volume —that is, to ninety of its six hundred pages. In the new volume Mitchell recorded what he had discovered in his extensive intellectual travels: what hypotheses concerning business cycles the

[54] *Annual Report of the Director of Research,* Feb. 4, 1924 (unpublished).

theorists have developed, what statisticians have found out about various types of fluctuations, and how reporters have described each year's business since 1790 in the United States and Great Britain and for shorter periods in another fifteen countries. But Mitchell went beyond an encyclopedic report. His interpretation of the procedures and findings of time-series specialists illuminated a new literature for both novice and expert. His description of modern economic organization, while designed from the viewpoint of a student of business cycles, is virtually a survey of the field of economics, and I believe one of the most instructive ever written. His analysis of the duration of business cycles is still the one authoritative treatment of that complex subject. His handling of the factor of time in the equation of exchange is a theoretical contribution of lasting value. Mitchell's scholarly feat was acclaimed by professional and lay readers alike. The first printing was soon exhausted, and the book has been reprinted a dozen times. It was translated into Russian and German. No volume published by the National Bureau has approximated its sales.

Only at the end of *The Problem and Its Setting* was Mitchell prepared to define business cycles, and the definition he framed was a working definition—that is, a definition to guide research. How have wage rates behaved during recent and distant depressions? Does consumer spending characteristically lead or lag behind investment at recoveries? What are the relations in time between consumer spending and national income? between consumer spending and employment? How do inventories behave from stage to stage of the business cycle? Does the volume of the circulating medium rise and fall in harmony with industrial activity? Is the volume of investment materially affected in the short run by the rate of change in sales? How are the cyclical turning points in the profits of individual concerns distributed around the turning points of aggregate profits? Questions of this character go to the very heart of the operation of our economic system. Since reliable answers did not exist, Mitchell felt that economists and men of affairs lacked a solid foundation for dealing with business cycles. "Overtaken by a series of strange experiences our predecessors leaped to a broad conception" of economic cycles, "gave it a name, and began to invent explanations, as if they knew what

their words meant."[55] This method of working yielded quick results, but they could not be depended upon. To theorize responsibly it was essential to know definitely the actual behavior for which the theory was supposed to account. Instead of undertaking a fresh explanation of business cycles, Mitchell therefore first set about determining as precisely as he could what the business cycles of actual life have been like. In so doing he no more ignored the theories of other writers than his own; but he took existing explanations as guides to research, rather than as objects of research.

An economist who works with only a few time series can get along without a special technique of analysis. Mitchell's plan, however, compelled work with a wide range of observations. To gain a just view of business cycles and their causes, the number of time series could hardly be smaller than the number of processes that reputable theorists have alleged to be strategic. That the number should, in fact, be much larger was plain at an early stage, partly because it seemed wise to examine the records of at least several countries, partly because the frequent imperfections of statistical data made extensive crosschecks necessary, partly because new theoretical problems were suggested in the course of work with the data. But if hundreds of time series are to be compared—some covering little more than a decade and others over a century, some representing one country and others a second or third—a systematic technique becomes necessary. In the closing chapter of *The Problem and Its Setting* Mitchell sketched a novel method of analyzing the cyclical behavior of time series. This method he amended after some experimentation. Other investigators soon joined in the task of developing the technique, and improved its power to establish what characteristics of business cycles are stable and what characteristics are variable. Preliminary versions of the technique appeared from time to time as the work progressed.[56] But a full and definitive account was postponed un-

[55] *Business Cycles: The Problem and Its Setting,* p. 2.

[56] See, for example, Mitchell's *The Problem and Its Setting,* pp. 469-74; "A Review", *Recent Economic Changes,* Vol. II, pp. 890-909; "Testing Business Cycles", *Bulletin 31* of the Bureau's series; "Business Cycles", *Encyclopaedia of the Social Sciences,* Vol. III.

til 1946 when *Measuring Business Cycles,* on which I collaborated with Mitchell, was published. This volume shows how business cycles may be identified, describes the range of observations needed to bring out what happens in a modern economy during a business cycle, tests the assumptions underlying the general plan of measurement, and explores the fundamental question whether business cycles have been subject to substantial secular, structural, or rhythmic variations. The basic features of the plan of measurement described in this volume are Mitchell's inventions. If anyone is to be credited with the technique of time-series analysis that has come to be known as the National Bureau method, the credit surely belongs to Mitchell.

Even before *The Problem and Its Setting* was completed, Mitchell began experimenting with the results yielded by his new apparatus. The interpretation of results thus went hand in hand with compiling time series, developing a technique of measurement, and applying the technique to the data—each operation reacting on the others. In his first use of the results, Mitchell followed a plan similar to that of Part III in his 1913 volume. But as he attempted to carry out an analytical trip around the business cycle, he found gaps in his knowledge—some of which could be filled by a more thorough mastery of the statistical materials. Hence he embarked on an intensive analysis of the cyclical behavior of leading economic processes—production of commodities, construction work, transportation and communication, commodity prices, wholesale and retail trade, inventories in different hands, foreign commerce, personal incomes, business profits and losses, security markets, savings and investment, interest rates, banking and the currency. In the 1913 volume Mitchell had written:

> The present theory of business cycles deals almost wholly with the pecuniary phases of economic activity. The processes described are concerned with changes in prices, investments of funds, margins of profit, market capitalization of business enterprises, credits, the maintenance of solvency, and the like—all relating to the making of money, rather than to the making of goods or to the satisfaction of wants. Only two nonpecuniary factors command much attention—changes in the physical volume of trade and in the efficiency of

labor—and even these two are treated with reference to their bearing upon present and prospective profits.[57]

In his new investigation, Mitchell put greater emphasis on the physical side of economic activity. He began his examination of the cyclical behavior of individual processes with production instead of prices, and explored the organization and technology of different industries, seeking to distinguish situations in which output could respond readily to business motives in the short run from others in which output was not subject to close business control. The physical processes of employing labor and other resources, and of ordering, producing, holding, and using commodities were still interpreted in their pecuniary bearings. But Mitchell was steadily broadening his analysis of the workings of our economic organization, and he did not shrink from going as far below the 'money surface' as seemed necessary to comprehend the impulses originating changes in output, and the agencies—technical, legal, psychological, or financial—through which adaptations to new circumstances were continually being made.

By 1932 Mitchell had drafted a sizable manuscript on the cyclical behavior of leading economic activities, taken singly and in combination. He expected to follow this volume with another devoted to theoretical analysis. But he was not satisfied with the manuscript, and after rewriting it more than once continued to feel that he had not mastered adequately the vital processes of which his time series were only the symbols. "I am not a rapid worker", he wrote a friend in 1937, "and I do not like to publish materials which I have not had the time to work into as good form as I can." Mitchell was not deterred from making a fresh start by the length of time his investigation had already taken. He no more hesitated to redo a manuscript that displeased him than to scrap laborious but defective calculations. Around 1938 he reached the conclusion that the authoritative investigation of the operations of our economic system for which he was, in fact, striving required expert knowledge of business and industrial practices beyond what he possessed or could easily acquire. The upshot was an enlargement of the staff. Several collaborators took on the task of extend-

[57] *Business Cycles,* pp. 596-7.

ing and refining Mitchell's analysis of the cyclical behavior of leading processes, while he shifted his focus from specific activities to the changes in the internal organization of the economy that occur during a typical business cycle.[58]

Thus the simple conception of the original plan—that is, a "systematic treatise" by Mitchell, supplemented by "two or three special studies of topics that have never been adequately investigated"—was progressively modified as the investigation of business cycles unfolded. In the hands of an alert investigator, empirical research has the refreshing quality of springing ever new surprises. In working on the systematic treatise, Mitchell discovered not "two or three", but numerous topics that had never been adequately investigated, and that nevertheless seemed indispensable to a scientific understanding of business cycles in the actual world. He had the habit of examining new evidence all the time, and this kept reminding him of what he did not know. As his task grew, he invited other investigators to join in the enterprise, who in their turn opened up new problems. Work on "special studies" therefore expanded, the "systematic treatise" burst through the limits of a single volume, and various byproducts of that treatise developed into independent studies. For example, Kuznets' study of seasonal fluctuations grew directly out of Mitchell's investigation of business cycles; so did Macaulay's work on interest rates and security markets, Thorp's on business annals, Wolman's on trade unionism, Clark's on 'strategic factors', Hultgren's on transportation, Evans' on incorporations, much of Mills' on prices, and so on. A general idea of how the program developed in the course of a quarter century's research is conveyed by the Bureau's publications in this field, which now include seventeen volumes and sixteen briefer reports on business cycles, besides the numerous monographs that deal extensively with business cycles as a side issue.[59]

Through all changes of plan and conception, a systematic treatise that would deal comprehensively with business cycles and their causes remained Mitchell's goal. Its living shape is the Bureau's

[58] The next two paragraphs are adapted from my Introduction to Hultgren's *American Transportation in Prosperity and Depression.*

[59] See the list at the end of this report.

series, Studies in Business Cycles. Mitchell's *The Problem and Its Setting* constitutes the first volume of the series; *Measuring Business Cycles* is the second; Hultgren's *American Transportation in Prosperity and Depression,* published last year, the third. Other monographs are in an advanced stage of preparation. The final instalment of the series was to be a theoretical account of what business cycles are, how they typically run their course, and of their tendencies toward variation.[60] Mitchell devoted his last years to this effort, trying to fit together the pieces on which his colleagues were at work. He planned a "progress report" in two volumes that would sum up what he had been able to learn about business cycles. The subtitle of the first volume was to be "The Many in the One", and of the second "The One in the Many". As a scientist and philosopher Mitchell had searched long and patiently for "the one in the many, the many in the one". His first volume was nearly completed when he died, and will probably be published this year. Unhappily, the world will never see more than a part of what he found, for he was not granted the time to record his full vision.

The investigation of business cycles that Mitchell projected will, however, go on. To contribute to a scientific understanding of the fluctuations in economic life remains a social need and responsibility. Thanks to Mitchell's efforts, the National Bureau has a rich tradition of business cycle research. With its highly skilled staff and matchless collection of statistical records, it may reasonably hope to expand its contribution to the understanding of cyclical fluctuations and to public policies for coping with them.

IX

During the long years of specialization in business cycles, which made Mitchell the foremost world authority on the subject, he remained a general economist concerned with the whole social process—at once economist and statistician, theorist and historian,

[60] Mitchell's conception of the scope of this work underwent several changes. At the last he projected two volumes, under the title *What Happens during Business Cycles: A Progress Report.* He never completely gave up hope of expanding and revising this preview.

philosopher and social scientist. Although he never returned to his manuscript on "The Theory of the Money Economy", its intellectual impulse remained with him. In one paper after another, he developed his basic theme that if economic theory was to play a useful role in social reform, it had to grasp "the relations between the pecuniary institutions which civilized man is perfecting, the human nature which he inherits from savage ancestors, and the new forces which science lends him".[61] Time and again, also, he developed his implemental theme that objective, quantitative studies are essential to a scientific understanding of economic life in its current institutional setting.[62]

One of Mitchell's last essays, "The Role of Money in Economic History", sums up his reflections on "how monetary forms have infiltrated one human relation after another, and their effects upon men's practices and habits of thought". I shall quote what Mitchell has to say concerning the influence of the money economy on "man's efforts to know himself":

By giving economic activity an immediate objective aim, and by providing a common denominator in terms of which all costs and all gains can be adequately expressed for business purposes, the use of money provided a technically rational scheme for guiding economic effort. It thereby paved the way for economic theory; for technically rational conduct can be reasoned out, and in that sense explained. But money economy does this job of rationalizing conduct only in a superficial sense, and unwary observers of human behavior fell into the trap it had set. Thoroughly disciplined citizens of the money economy readily assumed that all economic behavior is rational, and when they tried to penetrate beneath the money surface of things they found no absurdity in supposing that men do psychic bookkeeping in pains and pleasures as they do pecuniary bookkeeping in

[61] *Business Cycles*, p. 599.

[62] See *The Backward Art of Spending Money and Other Essays*, a selection published in 1937. Of later essays, besides those published by the National Bureau, the following are noteworthy: "The Public Relations of Science", *Science*, December 29, 1939; "Economic Resources and Their Employment", in *Studies in Economics and Industrial Relations* (University of Pennsylvania Bicentennial Conference); "National Unity and Individual Liberties", *School and Society*, June 13, 1942; "Economics in a Unified World", *Social Research*, February 1944; "Facts and Values in Economics", *Journal of Philosophy*, April 13, 1944; "The Role of Money in Economic History", *Journal of Economic History*, December 1944, Supplement IV.

outgo and income. . . . Following the money-making pattern, economic theory became, not an account of actual behavior such as historians attempt to provide, but an analysis of what it is to the interest of men to do under a variety of imagined conditions. . . .

Not only did the money economy make it plausible to explain economic behavior as a calculating pursuit of self-interest, it also long kept a more scientific treatment very difficult. . . . The humdrum processes of producing and exchanging goods, of paying and receiving money were recorded in private account books, but students had no access to these basic sources, and virtually no summaries of them were compiled. . . . But in the course of their expansion, the money economies reached a stage where business men, investors, and officials needed economic information more extensive than their predecessors had. . . . One consequence was that it became possible to test a wider range of explanatory hypotheses. . . . Nowadays we can begin laying the foundation for a type of economics that will have a demonstrable relation to the actual conditions with which men have to deal, because it can be based upon an analytic study of actual behavior. This empirical science, whose birth pangs we are witnessing, will be as definitely a byproduct of a later phase of money economy as mercantilism and the speculations of Ricardo were byproducts of earlier phases.[63]

Mitchell found much of the traditional body of economic theory faulty, not because it was mechanical, but because, lacking institutional perspective, it was naively mechanical. He well knew that "the use of money and the pecuniary way of thinking it begets is a most important factor in the modern situation". Hence "to isolate this factor, to show what economic life would be if it dominated human nature, is to clarify our understanding of economic processes". But he regretted that the theorists who worked on this plan "have not emphasized the monographic character of their work".[64] He put his criticism as follows:

A man who realizes that he is studying an institution keeps his work in historical perspective, even when he confines himself to analyzing the form that the institution has assumed at a particular stage of its evolution. By so doing he opens vistas enticing to future exploration, instead of suggesting a closed system of knowledge. He does not delude himself into believing that anyone's personal experience is an

[63] *Journal of Economic History*, Dec. 1944, Supplement IV, pp. 61, 64-5.

[64] *The Backward Art of Spending Money*, p. 158.

adequate basis for theorizing about how men behave; rather is he eager to profit by any light shed upon his problem by any branch of learning—history, statistics, ethnology, psychology.[65]

Veblen's and Commons' work, Mitchell felt, was also of a monographic character, and of course the 'institutionalists' were not the only economists concerned with institutions. Let me quote another telling passage:

> Veblen's analysis of the cultural incidence of the machine process and of business traffic takes for granted knowledge of how prices are fixed and of the bearing of prices upon the distribution of income. Every scheme of institutions has an implicit logic of its own, and it is no less important to know what that logic is than to know how the institutions came into being and what they are becoming. When . . . Davenport defined economics as the science that treats phenomena from the standpoint of price, and insisted that it must be written 'from the private and acquisitive point of view', he was elaborating the logic of pecuniary institutions. . . . Though Davenport explicitly ruled cultural evolution out of economics, he was contributing toward the understanding of one set of institutions.[66]

Thus orthodox price theory was 'institutional' but 'monographic', since it was not concerned with the evolution of economic organization. It was 'monographic' also because it failed to differentiate sufficiently between the "work of the captains" of modern business, where its reasonings applied tolerably well, and "the work of the rank and file" and "activities of consumption", where its reasonings applied badly.[67] Hence, it was critically important to determine what men actually do, and not take on faith attempts to think out what it is in the interest of men to do.

Games and puzzles of all sorts, not least those contrived by the more subtle of the economic theorists, fascinated Mitchell; but he found the solution of puzzles turned up by actual events not less delightful and much more rewarding. He looked forward to an economics that would be immersed in "the objective

[65] *Ibid.*, p. 256.

[66] *Ibid.*, pp. 338-9.

[67] "The Rationality of Economic Activity", *Journal of Political Economy*, March 1910, p. 201.

validity of the account it gives of economic processes". He put his "ultimate trust in observation" and expected this approach ultimately to prevail. As economists concerned themselves increasingly with actual human behavior, rather than equilibrating adjustments under assumed conditions, the efforts of economic historians and theorists would be fused and the scope of economic theory expanded. Hypothetical schedules of utility and disutility would give way to realistic accounts of processes by which the valuations of men are moulded.

> Indeed, one of the developments to be looked for is the rapid application of statistical technique to the study of demand for commodities, to the measurement of fatigue, to saving and other aspects of behavior that have seemed particularly baffling because particularly subjective. Psychological facts that can be measured are better data for science than most of the materials that economists have utilized in the past.

But the striving of economists to fashion a science of human behavior would not render equilibrium price theory useless. "On the contrary, not only will it make clear the limitations of the older work, but it will also show how the old inquiries may be carried further, and how they may be fitted into a comprehensive study of economic behavior." The theory of value and distribution, in its traditional sense, would therefore remain a concern of economists, although it would recede from its central position.[68]

Mitchell's faith in social science sprang from his faith in mankind. He expected that as economics took on the shape of a cumulating quantitative science, it would become an increasingly potent factor in social change.

> Such topics as the economic serviceability of advertising, the reactions of an unstable price level upon production, the effect of various systems of public regulation upon the services rendered by public utilities will be treated with incisive vigor as we become able to make the indispensable measurements. And investigations of this type will broaden out into a constructive criticism of that dominant complex of institutions known as the money economy—a constructive criticism which may guide the efforts of our children to make

[68] *The Backward Art of Spending Money*, pp. 36, 370, 371, 376.

that marvelously flexible form of organization better fitted to their needs.[69]

Repeatedly Mitchell pointed to the shortcomings of our economic organization. "The frequent recurrence of economic crises and depressions", he noted, "is evidence that the automatic functioning of our business system is defective."[70] Business planning had found no effective means of checking depressions, or preventing developments that tend to increase the business cycle hazard, or providing economic security for wage earners, or restraining the formation of monster combinations, or conserving the nation's heritage of natural resources, or providing for the satisfactory training of underprivileged youth for responsibilities of industry and citizenship. To Mitchell the existence of these grave problems demonstrated a need for greater knowledge of human behavior. The following is a characteristic utterance:

When for any reason it is not profitable to make goods we are forced to sacrifice our will as human beings to our will as money makers. . . . What we have to do is to find out just how the rules of our own making thwart our wishes and to change them in detail or change them drastically as the case may require. Not that this task is easy. On the contrary, the work of analysis is difficult intellectually and the work of devising remedies and putting them into effect is harder still. But one has slender confidence in the vitality of the race and in the power of scientific method if he thinks a task of this technical sort is beyond man's power.[71]

Mitchell realized poignantly that of itself science was neither good nor evil, and that in recent years many of its findings have been put to antisocial uses. But he felt that in a free society this danger is likely to be reduced as knowledge of man's own nature is improved.[72]

[69] *Ibid.*, p. 30. [70] *Ibid.*, p. 91.

[71] "The Crisis of 1920 and the Problem of Controlling Business Cycles", *American Economic Review,* Supplement, March 1922, pp. 31-2.

[72] In his Presidential Address before the American Association for the Advancement of Science he stated: "Perhaps, and perhaps is all we can say, if we can come to a clearer understanding of how we behave, we can learn how to condition men so that their energies will go less into making one another miserable." *Science,* Dec. 29, 1939, p. 606.

Mitchell recognized also that government must play a key role in applying the results of social investigations. He favored national planning on a broad and continuing basis—by which he meant mobilization of a democratic society's intelligence "to deal seriously with social problems before they had produced national emergencies". He followed eagerly the bold experiments in social organization being made in different parts of the world, and our own modest efforts at economic planning under the aegis of the Council of Economic Advisers. That society would evolve a form of organization that will satisfy men's emotional and material needs better than our money economy was his constant hope. Mitchell admired rebels in politics as in economic theory, feeling that deliberate experimentation is essential to the learning process. Yet he thought it necessary to recall "the historical fact . . . that, in the countries that have given wide scope to private initiative . . . , the masses of mankind attained a higher degree of material comfort and a larger measure of liberty than at any earlier time of which we have knowledge, or under any other form of organization that mankind has tried out in practice".[73] The one element in our society that he deemed worth preserving at all costs was democracy itself.

These, in brief, are the leading thoughts that run through Mitchell's scattered papers. Their moral sincerity, simplicity, humor, and literary grace won for them a large audience beyond the ranks of professional economists.[74] They played their part, besides his more technical contributions, in shunting the car of economics onto the tracks of empirical science. Under the stimulus of Mitchell's leadership quantitative research on national income, prices, investment, money markets, and business cycles developed rapidly in the United States and abroad. The reconstruction of economics now under way may be traced in large part to his influence—to his bold views on the scope and method of economics, to his pioneering studies of the money economy, and to his vigor in stimulating research by others.

[73] *The Backward Art of Spending Money*, pp. 94, 100.

[74] Some of Mitchell's essays have been reprinted in different places. One, "Intelligence and the Guidance of Economic Evolution", was included by Roger S. Loomis in his *Models for Writing Prose* (rev. ed., 1937). Not infrequently Mitchell wrote pieces also for the popular press.

Mitchell's preeminence as an economist was widely recognized during his lifetime.[75] He received honorary degrees from the universities of Paris, Chicago, Columbia, California, Princeton, Harvard, Pennsylvania, and the New School for Social Research. The American Association for the Advancement of Science elected him its President—a distinction accorded an economist only once before in its history. The National Institute of Social Sciences awarded him a gold medal for his contributions to economic science and public affairs. The American Philosophical Society, the American Academy of Arts and Sciences, and the Institut International de Statistique enrolled him as a member. He was elected Fellow of the American Statistical Association and of the Econometric Society, and an Honorary Fellow of the Royal Statistical Society. At different times he served as President of the American Economic Association, the American Statistical Association, the Econometric Society, and the Academy of Political Science. During the academic year 1930-31 he was George Eastman Visiting Professor at the University of Oxford, in 1934 Hitchcock Professor at the University of California, and in 1935 Messenger Lecturer at Cornell University. On the occasion of his sixtieth birthday his former students presented him with a volume of their writings, *Economic Essays in Honor of Wesley Clair Mitchell,* and many scholars and men of affairs, including President Roosevelt and ex-President Hoover, sent congratulatory messages. In December 1947 he received the highest honor the American Economic Association can confer, becoming the first holder of the Francis A. Walker medal, which is to be awarded not more often than once every five years to an American who "in the course of his life made a contribution of the highest distinction to economics".

[75] Several studies of Mitchell's contributions to economics have appeared. The earliest, I believe, was by Paul T. Homan; see his *Contemporary Economic Thought,* 1928, pp. 377-436. Two recent studies are Allan G. Gruchy, *Modern Economic Thought: The American Contribution,* 1947, Ch. 4, and Joseph Dorfman, *The Economic Mind in American Civilization,* Vol. III, 1949, Ch. 20.

X

Although the National Bureau was Mitchell's main concern after 1920, he gave much of his time to other interests. His sense of proportion and judgment made him an ideal counselor. His life was that of a student, but his later years were complicated by many calls for help from those interested in scientific, educational, philanthropic, and related undertakings. He allied himself freely with progressive and humanitarian movements, such as racial equality, aid to refugees, civil liberties, settlement work, and educational experimentation. For many years he played a leading role in the affairs of the Social Science Research Council, the Bureau of Educational Experiments, and the New School for Social Research. During 1929-33 he served as Chairman of President Hoover's Research Committee on Social Trends. President Roosevelt appointed him to the National Planning Board in 1933. He was a member of the National Resources Board in 1934-35, a special adviser to Secretary Morgenthau in 1937. In 1944 he prepared a report for the President's Committee on the Cost of Living, which helped to end the dispute then raging about the accuracy of official index numbers of changes in the cost of living. Except during the summer—when he retired to his camp in Greensboro, Vermont for a few months of uninterrupted work —he devoted a portion of practically every working day to correspondence or conferences with investigators, students, educators, business men, public officials, journalists, social workers, and social dreamers.

Only by careful ordering of his daily routine was Mitchell able to engage in so many activities, and at the same time carry forward his own research and maintain a working familiarity with newly published writings. Mitchell's life was serene, unhurried, well balanced. He found time for relaxation as well as work, read the classics extensively without neglecting detective stories, freely exercised his skill at golf and cabinet making, loved gay repartee at the dinner table, and always had an apt remark or verse to enliven conversation.

Mitchell's influence on his students and colleagues was profound. In 1919 he left his Columbia professorship to become Lec-

turer at the New School for Social Research. Three years later he returned to Columbia and taught until 1944, when he elected retirement and became Emeritus Professor. Mitchell's lectures on Types of Economic Theory and Business Cycles attracted graduate students from all parts of the world. Though he did not care for popular lecturing, his classes were so stimulating that the best students often joined the poorest in repeating them. Those who took his Types of Theory in the expectation of being drilled on fine technical points were at first bewildered by the attention he gave to social and political history. When they discovered how great was his knowledge of the theoretical literature and how deftly he handled its technical issues, they sometimes found it all the more difficult to understand why he did not follow a more conventional approach. But before the year was over even the most technically minded students worked up some enthusiasm for Mitchell's course. They too came to see that economic theory was not coterminous with the neoclassical system, that the works of the major theorists had links with social conditions, and that theory was a phase of man's continuing effort to learn about himself and to better methods of living, not a self-contained system of logic.

No small part of Mitchell's success in broadening the intellectual horizon of students was his ability to make them feel that economics was still in its infancy, and that each of them might take a hand in building a useful social science. Those who went on to his course in Business Cycles discovered that Mitchell was handling on a quantitative basis the very processes they had read about in the theoretical literature, that facts studied in relation to one another could be as exciting as abstract concepts, and that qualitative analysis and empirical inquiry could be complements instead of substitutes. A considerable number were inspired by Mitchell's distinguished example to devote their energies to quantitative research. But Mitchell's own interests were very wide and he encouraged students wishing to work on technical problems in economic theory as well as those who sought to work with observations, urging only that conclusions reached by analyzing imaginary conditions be treated with a scholar's conscience when applied to the actual world. The size of his classes prevented per-

sonal acquaintance with all his students. Yet many who never exchanged more than a few words with him felt he gave a new direction and meaning to their lives.

His colleagues at the National Bureau had the good fortune to see a great deal of Mitchell, and benefited continually from his insight and judgment. He was a remorseless critic of his own work, but a generous critic of the work of others. "What counts most of all in scientific work", he once remarked, "is that free play of ideas which we understand so little, but from which emerge at rare moments the flashes that keep reorienting our search for knowledge generation after generation."[76] Mitchell prized the freedom he had enjoyed in developing his own interests, and felt impelled to use his authority at the Bureau to enlarge the freedom of others. His mind had a constructive bent. When he went over a research project or a manuscript he searched out with deliberate care its merits and potentialities, not its defects. An excellent judge of men, he made it a practice to confine criticism to such matters as the individual seemed capable of handling. However short a manuscript might fall of his own standards, he had words of encouragement if it represented honest effort.

Mitchell's understanding of people thus enabled him to bring out the best qualities, both personal and scientific, in his associates. He did not attempt to impose his judgment or his standards of scholarship on his colleagues. He never drove the members of the staff and rarely preached to them. In the main he exercised his influence by giving daily proof of scientific integrity in his own work and of kindness toward others. Mitchell treated every member of the staff, young or old, as his scientific equal, and made him feel that his work was respected and important. He went about his research quietly, shared his newest thoughts with his colleagues, sought their criticism, advised and encouraged them in their own tasks. His characteristic attitude is well expressed in the following comment on Thor Hultgren's study of American transportation:

Thor virtually demolishes the notion to which I attached much im-

[76] *The Backward Art of Spending Money*, p. 82.

portance in 1913 that unit costs encroach upon profits in late expansion, and are materially reduced in late contraction—so far as railway transportation is concerned. He leaves mere remnants of the idea, and makes me wonder whether it has much validity in other types of business. I have congratulated him warmly on this success in damaging my speculative construction.[77]

Mitchell's steady striving to make his own best efforts obsolete had a subtle and cumulative influence on the working habits of the staff. A sense of social responsibility, precision of thought and expression, repugnance for shoddy work, ability to profit by criticism, passion for objective evidence, even fairness and generosity are, in some degree, habits that will grow in one environment and wither in another. Mitchell set the moral and scientific tone of the National Bureau so that these habits grew naturally and unobtrusively.

If Mitchell had confined himself to scientific work, he would have carried his own studies further, perhaps much further. But he would not have become, what he is today, the voice of conscience itself to numerous investigators within and outside the Bureau. His varied activities advanced powerfully the research of other students, aided the progressive undertakings of many educators and reformers, and helped hundreds to find an honorable and useful place in life. If Mitchell had led a more sheltered existence, he might not have retained his intellectual youth and vigor so long, and his thinking would perhaps have taken on the stiffness that so often accompanies preoccupation with one's own tasks. But I am dealing here with the imponderables of life, which can be weighed one way or another. I shall bring this hour's remembrance to a close by dropping speculation, and simply record the basic fact of our history: that the Bureau's past accomplishments and its present strength are largely attributable to Mitchell's personality, integrity, and scientific genius.

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[77] Letter to me, June 16, 1946. However, see in this connection pp. 78-9, below.