PEDAGOGICAL VALUE &
PSYCHICAL INFLUENCE OF
THE MOTION PICTURE

# The Pedagogical Value and Psychical Influence of the Motion Picture on Present Day Educational Systems.

Thesis submitted for degree of M.A.

April , 1916

By

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# The Pedagogical Value and Psychical Influence of the Motion Picture on Present Day Educational Systems.

An editorial in the New York Times (Oct.1st,1915) concluded with these words: "One who cares to take up the study of the movies may learn something new about them every day,and at the end of a year still have much to learn." I fully agree with that opinion.My studies have convinced me of it,and also con - firmed me in the belief that the potentialities of the motion picture are as yet but faintly comprehended.Some day,like the propounding of a philosophical theory--an Idealism,a Pragmatism, a Creative Evolutionism,--which of a sudden attracts the intellectuals of a universe,the philosophy of the movies,too,will have its expounder who,with a flash of genius,will interpret its inherent values to an unexpecting world.That the moving picture is making rapid strides is further evinced by the fact that comparatively few years ago the material to be obtained on the topic of this dissertation was meagre,and that during the years 1914 and 1915 impetus was gained,and an abundance of essays and a whole series of moving picture trade journals and illustrated movie magazines have come to the fore.(1.) Other aspects of the growing importance of the movies are its domination over the legitimate drama,and the mint of money that is being invested both in the production as well as in the exchange-display end of this wonderful industry. Merely to listen to the exalted hopes of the motion picture magnates and inventors would arouse in us fancied reveries from the "Arabian Nights." Dreams!visions! phantasies! one would murmur. The truth is that their hopes

and desires are now actualities.Here is what David W.Griffith says,-"It is foolish to think that the moving picture has reached its climax of development.We have the moving picture theatre as well built and as well run as any other theatre;we have the moving picture show that brings $2 a seat;we have the foremost actors and the foremost writers of the world working for us.So people are prone to think we have gone the limit and there is nothing more to be done.But I tell you that moving pictures are still only in their swaddling clothes." (2)This is no mere 'pronunciamiento:'these are the words of the man who produced "The Birth of a Nation"film--the half-million-dollar moving picture having 18,000 people and 1,500 horses in the cast! He claims that the public is quick to see values. If they are willing to pay 5 cents to see a picture that costs $500 to produce and 50 cents to see a picture that costs $50,000 to produce,they are willing to pay $2 to see one that costs half a million to produce.Then he adds unflinchingly,with the strength of an axiom from Euclid,"And when we can put on a picture that will cost $2,000,000 to produce the public will be willing to pay $5 a seat for it." Take as other examples of this tendency the Italia Film Company's (Turin,Italy) production of D'annunzio's "Cabiria" at a cost of $125,000 (3),that of "RichardIII at $30,000,and that of "From the Manger to the Cross" at an expenditure of over $200,000.00. So unbounded is the faith of producers in the movies that one of them,Mr.Carl Laemmle,has founded the only municipality in the world devoted to the manufacture of films.It is called Universal City and is situated some eight miles from Los Angeles.

The Universal City comprises 3,500 employees,and has four and one-half acres of stage space.It has,therefore,the largest moving picture stages in the world,and turns out 50,000 feet of drama, comedy and tragedy,per week!

I have referred to the legitimate drama and its over - shadowing by the silent drama. Let me say as a lover of the spoken drama that this state of affairs is so notably apparent,and the rise of this tide is so phenomenal,that promoters of the regular theatre are well nigh prepared to capitulate to this new force! Are we to hark back to the Greek or Roman stage,or to the stage of Shakespeare and of Molière?(4) If we are to accept the observations of D.W.Griffith(2) then some such 'catabolism' or 'catalysis' is now in progress in the field of dramatic amuse - ments.The only plays that the public will care to see in the regular theatre will be the intimate,quiet plays that can be staged in one or two settings within four walls,and in which the setting is unimportant,while the drama will be largely subjective.Objective drama,the so-called melodrama,will be entirely absorbed in the pictures.But here comes upon the scene our Fabian disciple, George Bernard Shaw,who was anticipated by Griffith's written utterance,and who holds similar views.Shaw(5)believes that the picture theatre with its dramatic moving pictures has already had a most disturbing effect on the spoken drama,but he adds that this will redound very potently upon its development in newer spheres. The film drama he maintains,"reduces the would-be deceptive realistic scenery of the spoken drama to absurdity,both artistically

and economically,and thereby gives a powerful and elevating impulse to the restoration of the conditions under which the theatre attained its highest and freest point."He summarises his opinion by saying that the film drama will compete so successfully with the spoken drama that it will drive it to its highest ground,and close all paths to it except those in which its true glory lies;that is,the path of high human utterance of great thoughts and great wit,of poesy and of prophecy--the path of Talk. I must not dismiss Shaw without quoting him on the new film democracy,concerning which he naïvely and in Shavian fashion says, "What a life it will be when all the theatres will be picture theatres,and all the players immortal."(5)

A salient item of evidence of the increasing supremacy of the cinematograph is adduced by Mr.W.Payne(6,p.24)who speaking about 'windfalls for authors' remarks: "One result of much interest to authors is the extension of copyright values.A drama or novel,the earning power of which has virtually ceased,brings in a windfall as a photoplay.Modern invention,in fact,has enormously increased the artist's power to reach the appreciation and pocketbooks of the public.When good old Samuel Richardson ground out a novel he could do just one thing with it--namely,publish it. If that thrifty soul were alive to-day,and in as great vogue as he once enjoyed,he would first serialize his novel in a magazine, then publish it as a book,next have it turned into a drama,and finally put it on the screen--tapping a new stream of royalties at each move." These considerations tend to prove that the motion picture is firmly and steadfastly established in our midst.

Millions of dollars are invested in the industry.Thesreturns upon this kind of commerce,including the people's expenditure towards it,might well amount to hundreds of million dollars.(6.p.23)That this should be the case speaks eloquently of the whole romance of motion pictures.It adds,too,encomiums upon the 'visionary' pro - moters as well as upon the great inventors,who,with characteristic perseverance and scientific resoluteness,were able to make the motion picture what it is to-day.

I have compiled a few supplementary facts about the mammoth proportions the motion picture industry assumes.In 1914 it is estimated that American manufacturers had turned out about 10,000 separate negative film reels from each of which 35 positive copies on an average are made.This would total,say,360,000,000 feet of film. Taking $2 to be the cost per foot of original film,this equals an outlay of $20,000,000.If we deduct the 10,000 000 feet of negative film and allow 4 cents per foot for the 350,000,000 feet of copies,that makes a handsome expenditure of $37,000,000 in the manufacture of films alone.If we were to superadd the assets and resources of the film exchanges and that of the manufacturers of motion picture accessories,including lenses,we immediately plunge into a realm of numeration easily approaching the budget of a Chancellor of the Exchequer in an era of peaceful prosperity.About 10 million people go daily to the 18,000 movies in the United States,and the approximate admission receipts for 1914 totalled the sum of 319 million dollars!The chairman of the National Board of Censorship of Motion Pictures in the United States,Mr.Frederic C. Howe,estimated that there were from

seven to twelve million persons entertained,or from 2,000,000,000 to 3,000,000,000 persons a year.(7)

II

Let us halt here for a moment to look backward in order to get a general impression of the growth of motion picture photography and projection. This retrospect will lead us from the early exertions towards its invention to the highly specialized industry of modern times with its ramifications of agencies,film exchanges,and film boards of trade.

Like the beginnings of all scientific invention,the initial stages of the motion picture industry were ushered in by a spirit of romantic curiosity,and perhaps,also,in this case,by technical necessity.From this there gradually evolved the original fabrication in 1887,by the Rev.Hannibal Goodwin,of Newark,N.J., of special camera and cinematograph celluloid films,highly sen - sitized,the motion picture camera,the special lenses,the screen, and the remarkable projection apparatus as brought out by Edison.

A writer for the press(6,p.23)narrates how in the early dawn of this industry Governor Leland Stanford's celebrated race horse was photographed whilst pacing.A row of cameras were placed beside the race track,to each of which a string,stretched across the path,was attached. As each of the cords were broken,by the action of the horse speeding by,the respective camera shutters being released,operated.In this crude way the first attempt was effected. "One of the grand objects,"says this journalist,"of the experiment,as I recall it,was to demonstrate that a horse in trotting always has one foot on the ground.In

In this way the governor got a series of instantaneous photographs showing every position the horse took in trotting.By putting the pictures in a stack like a deck of cards and rapidly flipping them the horse seemed to be in motion."That is just what modern cinematography really is--an optical illusion.But the thing wanted was a flexible film that could be rolled,wound,and unwound; that was,as above mentioned,accomplished by the Rev.Hannibal Goodwin.Another pioneer was Eadweard Muybridge who began his experiments in California in 1872.(8)In 1886 he consulted Thomas A.Edison concerning synchronization of sounds and pictures,that is, "reproducing simultaneously visible actions and auditory words." One of the steps towards the consummation of the climacteric adventure of practical cinematography was made by Edison,who in 1891 invented the motion picture camera.This was followed up in 1897,by his projecting kinetoscope which was further protected and improved,in the interim,from that date up to February 17,1914.

Muybridge's romance,however,became a reality,when in 1912 Edison introduced formally to the public the Kinetophone or talking motion picture.Some while ago I saw and heard for the first time the kinetophonic pictures filmed in the Imperial Theatre at Montreal.I can vividly recall the sensation of amazed - ness and astonishment that overcame me on that occasion.To suit the word to the action was indeed a wonderworking triumph, and in my ecstacy at this new stroke of genius I must surely have put it all down as a miracle!Much of what Edison has brought to per - fection in the projection and film industry,he had to protect by the aid of the highest courts of justice in the United States.

Students of the law can with profit now read the cases reporting the legal victories of Edison's most expensive litigations.

However,I must here enumerate(9)the patents of Gray's motion picture apparatus,Marey's photographic gun,the Edison projector,Gaumont's motion and talking picture apparatus,Pathé's Pathéscope,the Vanoscope,Nicholas Power's film trap or "gate" to prevent film from burning beyond aperture,(10)and Williamson's invention(11).As regards this last device,a new world has by its aid been opened up to oceanographers and treasure seekers by taking motion pictures under the sea.The sea,as has been said,no longer appeals to us as a surface,but as a deep arganic under - world as strange and mystical as any Dantesque inferno.Indeed, we are transported to a new dimension and view life on another plane.(12)

Conjointly with the foregoing let us consider,in a measure,the mechanism of the motion picture apparatus as a prelude to the analysis of its values from the standpoint of pedagogy and psychology.

Knowing,for instance,that Edison has his rights covered by United States patents for the following dates: Aug.31, 1897,Sept.30,1902,Jan.12,1904,Dec.5,1911,Dec.10,1901,Dec.2,1902, Oct.26,1909,July 18,1911,June 3,1913,Sept.2,1913, and Feb.17, 1914,then we can all the more graphically form an estimate of the very first lines of this paper.Furthermore,we are induced to agree with the writer in The Outlook(13)who says,"In the moving picture world an hour ago is almost ancient history. What to-morrow holds is only a matter for prophecy." Think of

projecting pictures without a screen,(14)yet that is a "fait accompli." Previous to the Lumière brothers successful solution of the problem of colour photography in January 1909,that avenue of experimentation was looked upon as fit for an alchemist;it was a dream! But here again in the sphere of the motion picture the impossible has happened.On the 5th of June 1913,in the Thirty-ninth Street Theatre,in New York,successful performances were given of talking pictures and moving pictures in natural colours,as perfected by M.Leon Gaumont of Paris.(15)The electrical synchronization between the film and phonograph was so effective that one could observe the rooster,flashed upon the screen,standing upon a pedestal,flapping his wings,and crowing very naturally and vigorously.The history of this latter phase of cinema development is of absorbing interest,and is fraught with far-reaching scientific and educational import.Should the reader desire to study the question with a view to closer acquaintance Mr.Marey's monograph in the Smithsonian Annual,1901,will be of some help.(16) As early as the middle of 1914 roentgenokinematographs,or X-ray moving pictures,of the stomach were made a possibility.(17)

Moreover,there are but few departments of knowledge to the study of which the motion picture has not been called in as an auxiliary.The Scientific American (June 13,1914) reprints an article from The Journal of Engineering and Industrial Chemistry and we there find this statement:

"A large field for the study of the growth of both plants and animals is thus opened up.....With the most refined mechanical devices it is not possible to take more than 250 pictures

per second,but by illuminating the moving object with regularly succeeding electrical sparks and photographing on a film moving continuously rather than intermittently,it was found possible to increase the number of exposures to 2,000 per second.Bull,for example,has made valuable studies of the flight of insects in this manner." (18) The author of the article ventures the remark that the kinematograph offers exceptional possibilities in solving moot points in research work dealing with time and space in fields as wide apart as engineering and biology.It makes feasible the study of motions so slow that it has hitherto been impossible to form a notion of their whole meaning,or so fast that it has been almost unthinkable to form any conception of them at all.

Another ingenious contrivance,the Vanoscope,is described by Joseph B.Baker in the Scientific American (19)(Feb.14,1914). This machine overcomes the flicker and "travel ghost" which produce eye strain,and eliminates the danger of the roll film igniting,despite the fact that the pictures are reproduced at the rate of eight per second instead of the usual sixteen.There are two advantages,firstly,the slow rate is a feature invaluable for educational motion study work;and secondly,producers can put a 1,000-foot play on 300 feet of film.The "two dissolving images" feature of this machine brings it about that the eye has only to relinquish the outlines of one picture and take up the outlines of the next,with comparatively little physiological effort.As Mr.Baker adds,"The lessened (sc.,amonnt of light) heat allows the feed of the moving film to be varied at will,and allows the film to be stopped at any desired point,as in the analysis of

complex manual or mechanical motions or in nature study." Further excellences claimed for this apparatus are that it is noiseless,free from tremor,and saves the surface of the film from scratches and pinholes.

I have stated the above facts in order to establish the status of the motion picture machine both as to the freedom from danger in its use,and as to its efficiency.With regard to the adaptation of the film to the class room and as to the cost or outlay to install such a service therein,these and accessory matters will be dealt with in the latter part of this article.

III

Let us turn to a consideration of the general attitude towards the motion picture and photoplay as helps to educational methods.This,I might say,will be followed by an attempt,synthetically,to build up from the opinions of educators,some fairly accepted idea of the meaning of education. I am inclined to think that upon this definition of education,or upon its basic principles,will be dependent the larger field of inquiry,for us,whether or not the motion picture will have a place in the school curriculum.

"The time will come,and in less than ten years, when the children in the public schools will be taught practically everything by moving pictures." This is the statement(2) of a successful promoter,D.W.Griffith,whose annual salary is reputed to be $100,000---a sum almost equal to that of one-half the salary-allowance of the President of the French Republic,and more than twice the civil list remuneration of the Governor -

General of Canada! As a matter of fact this prophecy has already been realized in part. The Kansas City Watchmaking School,(Kansas City,Mo.)is making use of movies for the purposes of demonstration.It was found that students got clear and lasting impressions from the films with less effort in instruction.In aletter (Sept.3,1915)sent to me from the editorial department of The Popular Magazine(Chicago,Ill.)they say: "We think the moving picture film has a high educational value,and have no doubt its use in schools will become quite common." The slow inroad that the motion picture machine is making into the schools would tend to indicate that school boards are ostensibly timid to even condone this modification;and perhaps,in many cases,it may be that the time-worn tradition that surrounds instruction in primary and secondary schools--of which John Dewey bemoans--affords a further explanation for this retarded progress.Perhaps,also,the absence of co-operation between municipal school boards,or between respective states or provinces,has something to do with the matter. Still there is a predominating tendency in superior educational quarters to favour this innovation.The evident change of front that is gradually spreading among educators is a matter of no little interest.In every new elementary school building erected in New York a booth for the installation of motion picture apparatus is included,and Philadelphia is to follow suit.

In answering my inquiry,the chief of the Department of Agriculture,Washington,D.C.,in a letter(March 15,1915)says,"The films owned at present are in constant use by the Department demonstration agents." I am also informed(June 10,1915) by the

Chief,Departments of Education and Social Economy,Panama-Pacific International Exposition,that the use of the motion picture with reference to education will receive considerable attention.Indeed,royalty has recognized the worth of the cinema exhibition. King George V,after seeing "Quo Vadis?" at the Royal Albert Hall, in London,instructed that a miniature cinema theatre be erected at Buckingham Palace.(20) Both the King and Queen think highly of the educational value of the cinematograph.The Kaiser in the Potsdam Palace,the late Queen 'Carmen Sylva' of Roumania in the Pelesh Castle at Sinai,and King Alfonso of Spain in his palace at Madrid,--all of them have had motion picture paraphernalia placed in their regal edifices.

Again,we may ask:"Now,what do the professors say?" Professor P.Chalmers Mitchell,Secretary of the Zoological Society (London,Eng.)wrote to George Kline(21)that his exhibition of films of zoological studies was a great aid to the presentation of that subject.Similar demonstrations enabled the events in the life-history of many animals,and,in particular,of the lower animals,such as insects,to be displayed to a large audience in a fashion far beyond the possibilities of ordinary photographs,even accompanied by the most fascinating description.Sir E.Ray Lankester(22) and Prof.Frederick K.Starr of Chicago University,are really enthusiastic about the movies.The former declared that he looked forward to the provision,.....of acinematographic lantren in every board school and in every college class room.The latter in his essay "The World Before Your Eyes" intimated that the moving picture machine was not only the greatest impulse of

entertainment but the mightiest force of instruction."The moving picture," he says,"is not a makeshift,but the highest type of entertainment in the history of the world."If G.B.S.(5)is to be admitted to the privileged ranks of the Inns of Court,or to elbow academicians,then a Shavian opinion should find a place here. "L'enfant terrible" or "the tiger" of British politics is certainly happy in his selection of sentences;and I quote them verbatim for fear I might,otherwise,spoil the Shavian effect.He says:

"Think,too,of Democracy when all the great political speeches are filmed,and I shall be able to tell my audiences what I really think of them without having the platform stormed by an infuriated mob."

"I shall not be at all surprised if the cinematograph and phonograph turn out to be the most revolutionary inventions since writing and printing,and,indeed,far more revolutionary than either; for the number of people who can read is small,the number of those who can read to any purpose much smaller,and the number of those who are tired after a day's work to read without falling asleep enormous.But all except the blind and deaf can see and hear;and when they begin to see father than their noses and their own nurseries,people will begin to have some notion of the sort of world they rae living in;and then we,too,shall see---.what we shall see."

IV

When I come to write about a definition of education, and treat of general educational principles,a trepidation overcomes me,for,to use a Biblical term,I am on 'holy ground!

Despite,on the one hand,the fact that apperception and interest are the loadstars of the mechanics of education,and despite William James' admirable treatment of the point in his "Talks to Teachers," and also by John Dewey in his "Schools of To-morrow," and in his exemplary volume, "School and Society:" yet,on the other hand,our eminent men of culture have striven towards an educational ideal which bespeak their personalities or life-career motives,and we are thus always,so to speak,on new territory. It may be hardly necessary for me to caution the reader that what is to be said under this rubric is an essential part of the structure of this essay.Much of it may sound like truisms or,perchance,be commonplace.Still as I do not wish to leave too much for granted,or to be supplied by the reader's survey of the history of education,I feel,therefore,as if I were following the only course open to me under the exigencies of the situation.

This section I deem important enough to warrant a wide treatment.For once admit the continuing evaluation of education ,due primarily to the rise of democracy since the days of Rousseau;the advent of scientific discoveries;the changed circumstances of production and distribution;the mass production in industry for a world market;the hand worker replaced by the machine worker;the influx to urban centres;the economic accessibility thrown open by transportation facilities;the incredible increase of encyclopaedic information;----consider all these conditions and we are at once confronted with the fact that change brings in its trail the necessity of calling forth newer methods,materials,and aids to cope with and satisfy the dictates of this

silent revolution which education is experiencing.The historical and psychological backgrounds will upon elaboration yield the conclusion that the cinematograph is essentially one of the aids referred to.It will not be a 'Frankenstein' doing injury to its inventor,but it will cause the worth of a teacher to surpass his present estimate.(23)Educational reformers are coming round to agree with John Dewey that the function of the teacher must change from that of a cicerone and dictator to that of an observer,watcher,and helper.By this new type of teacher the motion picture will be welcomed into the school.When this comes to pass, and every school will have its safety cinematograph,the importance of the teacher will be accentuated.

The vast amount of knowledge that the printing press is pouring out upon a world of ready readers has caused John Dana,the eminent librarian of Newark,N.J.,to sound a warning note about the encyclopaedic evolution now at hand,and of the necessity of men becoming skilful print users.I admit the timliness of the caution;and I agree,also,with Dana that the "word-seeing tract" is that which we have to learn.This constructive criticism is of much help in explaining contemporary unrest.To social evolution has been added the intellectual revolution from which the vast reservoir of learning has been put into circulation.It also helps one to understand better the concepts that a number of our educators ascribe to their estimate of education.

Aside from philosophical considerations,education as a life force has swayed throughout the ages between two socio-political expediencies,namely,Liberalism and COnservatism.Now,

Professor L.T.Hobhouse,(24,p.32)speaking of the former,declares that Liberalism supports a national system of free education,because inter alia "freedom to choose and follow an occupation means equality with others in the opportunities for following such occupation." Here there is an "open road to talent" notwithstanding the fact that the State is the Overparent.(24,p.40) On the other hand,Conservatism,with Lord Hugh Cecil as spokesman, (25,p.114) intimates an opposition to a "purely secular system of education."It favours national education with the underlying idea to reconcile national acceptance of Christianity with complete toleration of all sorts of opinion on religious matters.But in our democracy of to-day account is taken of the foregoing pervaded by a recrudescence of Rousseauism. Were I requested to submit evidence of this,I would instance the following:Francis W. Parker School,San Diego,Cal.,Miss Pratt's Play School,New York, Professor J.L.Meriam's Elementary School,Columbia,Mo.,the Wirt School at Gary,Ind.,the Fitchburg Industrial School,Public School 45,Indianapolis,the Francis Parker School,Chicago,Cottage School at Riverside,Ill.,the Phoebe Thorn Experimental School of Bryn Mawr College,the boys' school at Interlaken,Ind.,Mrs.Johnson's School at Fairhope,Ala.,the Little School in the Woods at Greenwich,Conn.,the Howland School of Chicago,the Dollar Institution in Dollar,Scotland,and the Vocational School and Commercial Shops at Porto Alegre,Brazil.In other words,it is vocational education in process of development with liberal education looking on;but it is recognised that each of these "involve,"as Dr.David Snedden says, "different aims of pedagogy."(26,p.8)

The movement expressed by these schools ,to borrow the prefatory words of John Dewey in his "Schools of To-morrow,"(36) show "tendencies towards greater freedom and an identification of the child's school life with his environment and outlook;and,even more important,the recognition of the role education must play in a democracy." (Cf.anent Mde.Maria Montessori,36,p.157)

Moreover,the Herbartian system has its counterpoise in the gospel of freedom for the child as expounded by the authors of "Emile" and "Leonhard und Gertud." Even when there is no consciousness of the indebtedness to Rousseau and Pestalozzi that very idea is present none the less. It is because he is influenced by these creators of thought that Professor J.J.Findlay of Manchester University remarks,that schools are maintained because men want children to set their affections on what is worthiest. (27,p.46)He abides with the new spirit,evidently,when he claims, that education includes every means by which the race,both adult and young,seeks the higher purposes of existence.(27,p.63) Fichte Von Humboldt,Herbert Spencer,foresaw all this,and it is equally appreciated by Vice-Chancellor M.E.Sadler of Leeds University, (28,p.37) Dr.James Ward,Professors Paul H.Hanus,(29,p.134) John Dewey of Columbia,Stanley Hall,and ex-President C.W.Eliot of Harvard,(30,p.30) William Howard Taft of Yale,(30,p.35)Theodore Roosevelt,(30,p.36) and Woodrow Wilson,(30,p.34)

In an article in The New York Times(19 Sept.1915) Munsterberg declares,that the German belief in training and expert judgment,in authority and efficiency,is the one weapon which can overcome the dangerous happy-go-lucky carelessness of American

life.(31,p.2,col.3:see also,23,p.65)But with this Kultur-like assertion many American educational reformers will disagree.On the other hand,Dr.Georg Kerschensteiner,Director of the Schools of Munich,Bavaria,has written a frank and splendid monograph stating his opinion of American schools."The great advantage that Germany possesses,"he says,"in addition to the relentless thoroughness of the whole educational work,is in the well-regulated organization of a State-provided school system,which requires in each community a school as good as that of every other community,aside from the possibility of an ill-adapted teaching force,of course.But this advantage has been purchased at the expense of many qualities for which we must envy the American schools."(32,p.15)

Bearing in mind the Anglo-Teutonic ideals,we can accept the opinion of P.P.Claxton,U.S.Commissioner of Education,as a logical summary.He declares that which has become a truism,namely, that rulers must be intelligent or the people suffer,that in a democracy the people are their own rulers,and that consequently many of our leaders have seen clearly that education is the highest function of society and the state.(30,p.5:33,p.109)Does this not appear to be a case of educating "our masters?" Daniel Webster and James Abram Garfield had spoken in the same sense;and does one not recall the words of Thomas Jefferson,in his letter to Col.Yancy,"If a nation expects to be ignorant and free in a state of civilization it expects what never was and never will be!" (30,p.14) Nicholas Murray Butler uttered his famous answer to the query,What is education? "What does the term mean? I answer, it must mean a gradual adjustment to the spiritual possessions of

the race."(33,p.17)Eight years pass and we again hear the echo. It was whilst delivering his inaugural address as president of the University of Cincinnati,(Nov.16,1904) that Charles W.Dabney unequivocally declared that "education is the preparation of the fully developed free man for service in his environment."(30,p31) All this naturally leads up to the belief of modern educators--who are not,necessarily,to be looked upon as 'struggle for lifers --as expressed by William Wirt,that it is the proper function of the elementary public school to equip boys and girls for their encounter with the industrial world when they graduate.(34,p.9) The spirit of the age calls for the introduction of educational innovations.One must,therefore,never lose sight of the fact that 'back of the factory system lies the household and neighbourhood system.'This is of permanent significance:our schools should be socialized.

Prior tompassing on to the division of this essay relative to psychical influence,I wish to take up a short study of of the ideas of Prof.John Dewey and of Paul R.Radosavjevich.

Most persons interested in education are doubtless familiar with "The School and Society,"and now we have another book by John Dewey,"The Schools of To-morrow," which a critic acclaims as "the most significant educational record of the day."(35) Some hundred and sixty years have elapsed since the "Emile" and "The Social Contract,"and the mantle of Elijah has fallen upon the shoulders of Dewey to herald the resurrection of an ancient th theory in a more modern garb.Dewey declares that to find out how to make knowledge when it is needed is the true end of the

acquisition of information in school,not the information itself. (36) His unusual insight as an educational reformer is best characterized by a sentence from his "School and Society"(45,p.3) where,with amplitude,he says that what the best and wises parent wants for his own child,that must the community want for all of its children.(Cf.45,pp.56,67,73,81, and 83)When he says that he is in the same category as Thomas Davidson,who believes education to be a conscious or voluntary evolution(37,p.1),and is also akin to the idea of Prof.Paul Monroe,of education conceived as the harmonization of interest and effort--the problem of the individual and of society.(38,p.403;p.405) Dewey maintains that there is a new socialized education,and that the newer educators will be ready to direct:

"But a community that demands something visible from its schools,that recognizes the part they play in the welfare of the whole just as it recognizes its police and fire departments, that uses the energies and interest of its youthful citizens,not simply controlling their time until they are prepared to be turned out as citizens---such a community will have social schools, and whatever its resources,it will have schools that develop community spirit and interests."(36,p.175)

The second writer,Paul R.Radosavjevich,in an article on "What is education?" (39,p.39)urges the need of the following four considerations:

I. Evolutionary Consideration of Education;

II. Sociological Consideration of Education;

III. Individual-Psychological Consideration of Ed-

ucation;

IV. Physiological-Hygienic Consideration of Education. In an article on "Social Pedagogy,"which the same writer contributed one year later to the Pedagogical Seminary(40,p.79),he sides with Meumann and Meyer in believing that the school of to-morrow may take the community into account,but the prime factor is the psychology of the relation of the teacher to the pupil.On the other hand,Dewey maintains that the centre of gravity has shifted to the child.Furthermore,to get Binet's idea of "l'école sur mesure"---the school after measure,we must await the development of the scientific individual pedagogy of S.R.Hall,Meumann,and W.A.Lay.(40,p.87)Radosavjevich insists that the individual pedagogy and individual psychology is,on the whole,more important than social pedagogy and social psychology.Society,not the individual,is an abstraction.The struggle is on between pedagogical Socialism and pedagogical individualism.The latter is the"Persönlichkeitspaedagogik" represented by Herbart and Paulsen,as examples; and the former,social pedagogy,civic or national education,Weltpädagogik,Proletariatspädagogik,has as exponents Kerschensteiner,Dewey,and G.S.Hall.In his conclusions(40,p.90)Radosavjevich proffers the opinion that social pedagogy can never serve as a substitute for individual pedagogy.Furthermore,he insists that social pedagogy alone cannot solve the perplexing problem of school education.

Since Radosavjevich wrote,educational matters have advanced so rapidly that there is no doubt that social pedagogy is in the ascendant. The new education of which John Dewey

speaks has arrived;and vocational(industrial)education will soon be on the educational programme of all progressive communities. (29,v.1,p.765)In fact the abstract is to be replaced by emphasis on the human side of things.The education that will associate learning with doing will replace the passive education of implant ing the learning of others.(36,p.163) The conventional education, which is academic and unsocial,will give way,if one is to judge the times aright,to that socialized education---the education which will learn the young,in a systematic way,the occupations which constitute living not only,but also the social basis of living.

People keep on asking,Is there a new education?They appear to have some misapprehensions;but to such as these NichOlas Murray Butler's answer at least carries authority."Dr.Johnson's acumen,"he says," was equal to drawing a distinction between the new as the hitherto non-existent,the new as the comparatively recent,and the new as the hitherto unfamiliar.In each, and all of these senses of the word,I am confident that there is a new education."(33,p.95)

The foregoing expressions of opinion on education lead to the point that educators are agreed that all possible effort must be made to put the school in harmony with the environmental industrial conditions.It is granted on all sides that the school must be attuned to the industrial revolution,to the commercial renaissance,and to the 'bouleversement' of the present era.A general educational readjustment and transformation is imminent,or eminently in demand.The need of skilled artisans is an urgency;

and,indeed,all education,on that account,in part,calls for reorganization.(41)But this is not to be bought at the sacrifice of culture,discipline,information, and utility.

V

What is the psychology of the moving picture? What are the psychical considerations that will help us in determining its value as a pedagogical factor? These and ancillary questions I now purpose to answer.

Already the later Grecian and Roman schools had a method of pictorial instruction.Indeed,in his "Greek Education" Professor Mahaffy mentions the researches of Böttiger and Jahn as proving the daily use of illustrated matter as a compendium to the Homeric poems.The evolution of the picture as an aid to education is succinctly described by Paul Monroe(38),and its history forms an interesting chapter in the annals of the mechanics of edu - cation.Knowing ,as we do,that the child's kindergarten period connotes sensation and movement,and that the elements of imagination,memory,and understanding of the relationship between things are discovered for the most part in the elementary school period, we can realize how important these periods are in respect of the lesson terms,and the evaluation of fatigue consequent upon study. The peculiar problem is to get hold of,and to utilize,the child's natural impulses and instincts--the child's fourfold interests,--the interest in conversation,or communication;in inquiry,or finding out things;in making things,or construction;and in artistic expression,---for on these depend the active growth of the child. (45,p.45;p.123) The Gary system,as described by Albert

J.Nock(42),is an instance in point of fact.The processes of'nurture' must be made to go hand in glove with the preëxistent processes of'nature.'

If we will but bear in mind the reactive tendencies--the impulses and instincts of childhood--we can grasp the reason why James(43,c.vii;pp.45-7) writes that "the sensational curiosity of childhood is appealed to more particularly by certain determinate kinds of objects.Material things,things that move,living things,human actions and accounts of human action,will win the attention better than anything that is more abstract."(45,pp. 97-99) That the child's attention is also by far more predisposed for sense impressions than for thoughts and ideas is an opinion to which Münsterberg subscribes.Referring to the photoplay Münsterberg,writing in The Cosmopolitan(N.Y.Dec.1915) from the point of view of the psychologist,remarks,that the order of the pictures on the screen is no longer the order of the events in nature, but rather that of our own mental play.And he goes on to explain that it is the only visual art in which the whole richness of our inner life,our perceptions,our memory and our imagination, our expectation and our attention can be made living in the outer impressions themselves."The photoplay of the future,if it is really to rise to further heights,will thus become more than any other art the domain of the psychologist who analyzes the working of the mind."(44)" We are strongly tempted to attend to things that move,"declares Dr.J.E.Wallace Wallin;(46,p.131) and he considers that this is the fascination of the moving picture,for it is based upon the dynamics of spontaneous attention,the laws

which govern our inherited tendencies to attend.As Lloyd Morgan asserts it's really the focal object that the educator must cope with.Or,to borrow the words of Dr.Burnham,(47)'interest' has here a twofold content,the one a permanent mental possession,and the other,that of the feeling of organic adjustment to a situation that comes with attention.What conclusion are we to draw? Looking to the subject of inquiry,namely,of attention and interest, and more particularly to the kindred question of visualization,it is seen psychologically that in the latter,the association centres react with greater alacrity and create a deeper channel through which memory flows more readily.(48,p.450)

What are the types with which educators have come in contact in their daily work? Meumann,in his pedagogical laboratories in Zürich,Königsberg,Münster,Halle and Leipzig,has experimentally given us these types,ranging from concentrated versus distributive types,and static versus dynamic types,to types of lasting and of easily fatigued attention.Chase(47) summarises Meumann's mated types as showing differences in (a)degree of concentration,(b)rapidity of adaptation,and (c)time for which con - centration can be maintained.The task of the average school consists in making the school work uniform for all the above types in the respective grades(23,p.267) whether they be (a) slow,backward,retarded,or laggard children;(b)normal and bright children; and (c) talented or exceptionally bright children.This is a statement which will need slight modification when classes,some day, will be provided in our auxiliary schools for normal,subnormal, and supernormal children;(49,p.16) when we shall depart from the

typical passé traditional education "en masse" of the 19th century;when we shall liberate ourselves from the mediaeval conception of education;when we shall introduce rational conviction in education;and when,finally,we shall pass on from the prevailing "listening" basis of education!

Meumann appreciates this state of affairs in his researches of experimental pedagogy,and Chase following his lead suggests that we use dynamic representation wherever possible;because,in agreement with William James,he says"the condition of movement of stimulus recalls the interest of young people in anything that goes." As a result of his experiments,which confirmed, as we shall see below,those of F.Kuhlmann,Meumann,in his "Okonomie und Technik des Gedächtnisses"(Leipzig:Ed.1908:pp.267-269),was able to conclude that young children are very realistic in thought and that most of them are of visual type,while the mental processes of adults are more in terms of general ideas.(50,p.238)Colvin and Myers(51)have also pointed out that in the visual tests the third grade had an average of 75% correct results,fourth,74%, fifth,72%,sixth,72%,seventh,65%,eighth,62%,high school 75%,university 73%,all of which indicates an actual decline in memory for concrete visual material at about the onset of puberty.Further experiments made by Netschajeff,Lobsein,Wintler,and Pfeiffer, had for resultant the fact that the realistic ideation of children is predominatingly visual.(50,p.241)

The experiment of Kuhlmann(52),to ascertain trial recall during the learning of a group of pictures,gave the following data,arranged in general percentages of the number of times,

(A)the visual image appeared first;(B)the verbal appeared first; (C)the visual and verbal appeared simultaneously,as far as the subjects could judge:-

| | (A) | (B) | (C) |
|---|---|---|---|
| General Recall | 77 | 15 | 8 |
| Detailed Recall | 86 | 11 | 4 |
| Average | 82 | 13 | 6 |

The superiority of visual imagery was again borne out.Moreover, it seems now well established says S.S.Colvin in his "Ideational Types of School Children,"that the whole memory for concrete visual material is best especially for younger pupils;and that emotional and abstract imagery is a matter of adolescent development

The relation of the cinema and its psychic influence to the general field of inquiry about instruction in pre-pubescence, pubescence,and adolescence,has been referred to by approaching the subject through an indirect manner---approaching the "firing line" by circuitous and devious,yet necessary,"communicating trenches," as it were. It is true,though,to continue,that the film opens up for children,as well as for adults,a land of wonder and delight.But the motion picture of to-morrow will be more than a mere 'divertissement' or a recreative agency.It will be an education in itself,for it fits in,as has already been pointed out,to the very learning process itself.Without factitious pressure,it will reënforce the conventional tools of learning and of study of books,and will ultimately unfold and call forth the latent inner potentialities of the student or pupil.In a word,it will conduce to an "enlarged and deepened consciousness,and

increased control of action."(Cf.45,p.123)

Meumann made the great discovery that intelligence is not only to be judged by a pupil's accomplishment of school tasks,but also by the energy(effect and time)expended in reaching this goal. Visualized teaching means one step nearer to a standard instruction.It will bring efficiency in its train by demanding a higher type of teacher,and will consequently conduct all efforts to a progressive development and readjustment within the school systems.This will be apparent when we consider the following facts:-- The child requires more time and more repetitions than the adult to learn the same material;that the memory span is less and retention is greater at first intervals;that the attention is more inconstant and unstable;that the reaction time of association is much greater;that the child thinks more in individual,concrete ideas,and this ideation is predominatingly visual;that there is more of the "perseverance tendency" in ideas; that susceptibility to suggestion is greater;and that the power of abstract definition and logical reasoning is weaker.(50,p.251) At every point of contact the essential appeal of the movies is seen to accomodate itself to the curriculum.The all-importance of the cinematograph in interpreting and expanding experience, and in the elimination of "waste" in education,(45,p.59) will at once be conceded.One may forecast that,through its skilful application,the attainment of the highest degree of intelligence, with a modicum of effort and time,that is,energy,is within the reach of all.Meumann once declared that there are systematizers who were predominantly synthetic,and critics who were analytic,

but that the'highest degree of intelligence' possesses great power in both synthesis and analysis.The educational motion picture has it within its power to lead us to that loadstar of which Meumann speaks.

VI

I shall now deal firstly,with the sociological aspect of the ramifications of the movies,and draw up some conclusions why it should find a permanent place in the schools.Secondly,I will consider the pedagogical aspect.Thirdly,I will state the practical problem of the utilization of the film in the schools.Finally, will come a summary of some of the salient features of the subjec treated herein.

The cinematograph has come to stay.Its unstinted popularity both in cities and villages,nay,within college walls as well,has caused it to be preëminent as a popular entertainer;and now it is acclaimed as a mentor of instruction! The 'many' are going to the theatres where less than a generation ago went the 'few.' Leading actors and actresses in dramatic moving pictures receive ovations by the populace,just as the connoisseur 'first-nighter' of the spoken drama opened his heart in appreciation of a Kemble,a Sarah Siddons,a Kean,a Lekain,a Talma,a Garrick, a Rachel,a Tommaso Salvini,a Henry Irving, a Langtry or a Bernhardt. All this has been received by social and educational reformers--who believe in the urgent need of cultural joyous recreation--with mingled feelings;for some fear the consequences,neurotically,upon the race;some welcome it as a new ally to help solve issues associated with the low-scale wage earners;some wish that it

be restricted in its activities as regards those who attend its performances;and there are others who,distinguishing between the working principle and the literary theory or paper description of the question,state that the greatest inventionas an aid to education is the motion picture machine,and that it must find a home in every school and university.

Of course the battle has been fought ,for the most part,about the query of child development in a generation wherein child welfare has been ever present as the centre of interest. Still the morals,ethics and patriotism of the adult citizen and of foreigners within our boundaries,--and,also,of the immigrants that are to come to our shores,-- are subjects of deep concern relatively to the nature of motion picture performances which are provided for them and to which they flock! There are said to be 800 motion picture shows in New York,patronized by 500,000 persons daily,of whom probably 60,000 are children.(54,p.445)This and supplementary data will be proof sufficient of the cinema's social magnetism.In Milwaukee,Rowland Haynes,a field secretary of the American Playground and Recreation Association,stated that 350,000 tickets sold weekly,on the average,to shows 60% are to movie shows.(55)As to Boston,owing to the increase of the cheap theatres,nearly all the children between 10 and 14 years of age attend some sort of theatre occasionally,and less than 10% go as often as once a week.I gathered the facts about Boston from an address delivered at Clark University in 1909 by E.H.Chandler, who also stated that the results of the late hours are laziness and dullness in school,loss of interest in work,leading to a

slow promotion,dropping out of school at 14 and a small paying job for the rest of their lives! However,the daytime attendance to cheap shows has also come into disfavour.In November 1912 a census was taken on a Saturday in Liverpool,and it was proven that there were 13,332 children below the age of fourteen present at matinées held in twenty-seven halls in that city,which appeared to cater especially for children so far as the price of entrance was concerned.(56,p.842)The Director of Education in Liverpool,at the time,criticized the condition of affairs from an educational point of view stating that "the cinematograph added one more to the temptations of city life,which kept children out of bed,and in a condition of excitement ,which is a serious obstacle to their physical and educational progress." I do not know whether I am justified in stating it,but it really seems to me that the advent of the commercial nickleodeon was contemporaneous with the establishment of the Juvenile Courts for delinquent youths! As a consequence of the investigations of the New York Child Welfare Committee,we are now in a position to generalize as to juvenile attendance at film shows in this wise: That boys have a weakness for exciting pictures and the girls display more imagination and a love for humor,and scenarios of emotion.Herein is to be found both a reason for apprehension and fear of the commercial movie show's influence upon our youths,and ground for renewed efforts in directing its forces in educative channels in our schools.

A writer in the Outlook,and Edward Lyttleton of Eton also,criticize the indiscriminate tantalizing motion picture

programme and its pernicious,telling effect,upon morals."Is it really contended,"asks Lyttleton,"that the human mind can be battered into receptivity by being exposed to a deluge of unrelated and mostly unintelligible facts?"(56,p.853)He insists upon the strain consequent upon the shifting phantasmagoria,and he cautions the English people against overtaxing the brain energy of the very young if they wish to ward off an intent to commit race suicide.The former writer,in the Outlook,on the other hand,likens the motion picture,as a force,to the parable of the fisherman who found,on the sea beach,a bottle upon the opening of which there issued forth smoke gradually forming itself into a gigantic jinn.How the fisherman got the jinn under control is a story familiar to many;and the advice he gives is for us to follow the example of the fisherman,"by the exercise of quick wit and sound judgment make this huge force a ready slave of humanity." The idea of the United States Congress in contemplating the appointment of a Federal Motion Picture Commission which shall license every film submitted to it,as being an object for inter-State commerce,is a good one;but says the editor-writer in the Outlook it must be supplemented by voluntary agencies throughout the land.The sociological aspect introduces a recurring problem to be coped with by the people,who must buttress up the legislature's efforts to make the cinematograph assume the place as servant, instead of the role of destroyer,in the State.The editor gives the best statement of the case when he perorates this wise:-

"It is certain that no formal method of censorship can insure the observance of the highest standards of intelligence,

of taste,or of moral judgment;but that fact does not relieve the community or the nation from the responsibility for protecting the public from obvious transgressions of morals,of taste,and even of intelligence."(57,p.388)

Is it,then,to be wondered at that a demand is now being made of placing the film in the school?The film can be made to appeal to the pupil's native interests and inherited racial interests.It will thus,as I will show later,provide the foundation for even such an abstract conception of education as that of Dean Dr.Thomas M.Balliet's,as citizenship preparation which would entail as requisites,a knowledge of economic science,a knowledge of sociology,some notions of public health and of public hygiene. Books may help somewhat;but pictures tell a story better and quicker than words.Character training,the lack of which we deplore so much in our schools,and man's rights and especially his duties may be instilled into the scholars in the school of the future,equipped with educational films,to a degree of success beyond the hopes of the pre-contemporary educators.The race of Supermen,after the Nietzsche 'Will to Power' or after the Treitschke or Bernhardi conceptions,are not to be contemplated as a product of the cinema in the school.But it ought to extinguish the smoldering embers of anarchistic tendencies;and lead on to a knowledge of the main springs of social democracy--justice,mercy, and love,--and of coeval civilization.To say that it can accomplish this is not overestimating its merits.The transition period of education of which we see a product in Professor Dewey's "Schools of To-morrow"(36) points unerringly to the device of

of the movie film as an aid in the newer education,and will assist in the fulfillment of his mirroring of the socialized school.

It may well be said,therefore,that from the standpoint of sociology the introduction of the moving picture in our school is inseparable from the larger inquiry concerning education and democracy, and of the school and social progress.

VII

Now reverting to the pedagogical conspectus,two facts loom up to the investigator,anent school management: retardation and elimination.With the former,poor teaching is a contributory cause,and failure to get along well with school work is the most significant element in the latter."The study of the problem of elimination and retardation,"says Mr.George Drayton Strayer,"has brought us face to face with the necessity for changing our curriculum.It is manifestly unfair to provide a rigid curriculum which leads straight to the college or the university.Our schools are beginning to take account of the facts of individual differences in interests and in abilities.We shall have to modify our curriculum still further.During the first six years we may possibly be satisfied to accept a minimum of achievement from those who are less capable along the lines of traditional school work. Beyond the sixth grade we are already beginning to have a differentiation of courses of study which will enable the child who is to work in the fields of industry or commerce to secure from the school some adequate preparation for his life work.....The ideal of education in a democracy will be realized when it is

possible for each child to work to the maximum of his capacity and to secure during those years devoted to school activity that training which will best fit him for his life's work."(58,pp.139-140;See also,45,p.81) Anterior to Mr.Strayer's report,Luther H. Gulick(59)expressed his indictment of the school whereof 250,000 pupils quit it annually.With insight and virility he characterized the elementary form of school as being suited to children but not to adolescents.In Chicago every year from 15,000 to 16,000 children between the ages of 14 and 16 years leave school and go to work---into low-grade industries. To combat this Mrs.Ella Flagg Young,the Superintendent of Schools of Chicago,strove to develop vocational training in all of the schools,for it kept the children in school much longer than when they are limited to book work.Superintendent Ettinger of New York,where the taxpayers provide $40,000,000 a year for the public schools,sides with Mrs. Young; and Samuel Gompers,President of the American Federation of Labor,likewise is in agreement when he stigmatizes America's one trouble in securing industrial supremacy,as being that too many of her youths who have graduated from the grammar or high school were misfits industrially.The case of New York City where, according to Dr.Charles A.Wagner,State Commissioner of Education of Delaware,approximately 90,000 boys between the ages of 14 and 16 are in occupations in which they can never earn more than $9 or $10 a week,(that is,without education that has vocational accompaniment),is a convincing argument in itself for a change, as forecasted by George Drayton Strayer.

In the Carnegie Institute of Technology(Pittsburgh)

the amorphous state of things in industrial preparation has prompted investigations as to vocational proclivities,and in a general way it is asserted students can be divided into three groups:
First,-Those who possess a natural desire to do work with their hands. E.g.,bricklayers or plumbers.
Second,-Those interested in special engineering problems.E.g., Wright Brothers or McAdoo.
Third,-Those interested in colour,sound,music,that is,who are emotional,artists,writers or actors.
That the school does not adequately,as yet,provide for these groups is being more and more emphasized by all impartial critics of the existing pedagogical system.

So one must not be too ready to censure a writer,L.W. Dooly,when he contributes an article in the Scientific American Supplement,under the rubric,"The Educational Scrap Heap and the Blind-Alley Job,"for this picturesque title ic conceded to be descriptive of an actual and ominous state of affairs."The efficient democratic school of the future," he says,"must have a course of study in the elementary schools that will be adapted to the aptitudes of the great mass of children who are motor-minded and must be reached through the manual and objective methods of teaching.In this way pupils will be attracted to the schools,and not leave as soon as the law allows."All this talk about vocational education is not mere vociferation or mere opinion.It has been tried out abroad;it has worked.Were we to adapt a democratic form of it,this side of the Atlantic,it would become the adamantine foundation upon which can be built the supreme gospel of con-

servation,---namely,the husbanding of our natural and human resources. Germany's economic and industrial penetration into Russia is an outstanding example of Kultur-technical and industrial training when objectively put into practice.Mr.John H.Fahey,President of the Chambre of Commerce of the United States,recently drove this fact home whilst addressing "The Sphinx Club of New York:-

"To-day the finest English razors are sent to Germany to be concaved before they are exported to the United States.Why? Simply because Germany's training of her workers so outdistanced England in this particular line that she could not avoid this step."

"When,"he goes on to say,"in a single State of Prussia the ministry of education reduces the proportion of unskilled labor from 33 per cent. to 10 per cent.in twenty years,something has happened which helps to explain Germany's great prosperity. In one year out of 2,200 graduates from the highest classes in the elementary schools in Munich,2,150 went directly into skilled employment.Think that fact over."

This quest for the materialization of the ideal is being partially fulfilled by "The National Association of Corporation Schools" in the United States,whose object is to supplement the public school system by classes in industrial training.(60)However,one of the greatest of troubles is to secure a correct understanding on the part of parents as to what training their boys need to fit them for the mechanical trades,and as to what constitutes success in those trades. That is the diagnosis of

Luther D.Burlingame,Industrial Superintendent of the Brown & Sharpe Manufacturing Company,in his address on "Industrial Education and Trade Training,"before the Metal Manufacturers' Association of Philadelphia.And just here the very potency of the moving picture as a force for recreation and discip-line,enlightenment and information,and culture and utility,is to be measured conclusively.To use Frederic C.Howe's sentence,"it is likely to become a propagandist agency of unmeasured possibilities."(7)Only recently (Feb.16,1915)there was exhibited before the New York Legislators in the Assembly Chamber at Albany,a film "The Silent Plea" which was a dramatic appeal for the Widowed Mother's Allowance as advocated by the "New York State Commission for Relief of Widowed Mothers." But coming back to the problems of occupation for life,it appears that the great desideratum is the discovery of special ability in order that adequate training may be given rather than referring to the difficulty in terms of places for children to work.(61,p.6)The pictureized drama or scene of industry is thus coming to be looked upon as an adjunct of immense aid to vocational counsellors who have as one of their duties to get their charges to realize or rediscover their special ability.Indeed,one of the fundamental things recommended by the Carnegie Foundation for the Advancement of Teaching,at page 11, in its report on "A Study of Education in Vermont(1914),"is a course of study having relation to the life,the aspirations,the needs of the pupils.The same tendency is evidenced by what is said in the "New York School Inquiry,"(54,p.445),and the Royal Commission on Industrial Training,--the chairman of which was

Dr.James W.Robertson,--state in unequivocal terms their ardent belief in the value of the motion picture's assistance to all those intent upon entering commercial or industrial occupations. (62,p.415) It is this very idea that explains why,in William Wirt's Gary plan for the New York City schools,the cinematograph is so prominent a feature.(V.New York Times,Sept.24,1915)From the educational standpoint the destructive argument of expense comes with ill-grace at a time when all energy is riveted upon accomplishing results.The moving picture has come to stay and we must use it to our purpose.Walter Hines Page sums this up pointedly in a quotation freighted with meaning:"Education pays the State. The more persons educated,the better education pays the State." (30,p.31)

Holmes Beckwith who prepared an excellent monograph on "German Industrial Education,"asks at whose door must we lay the responsibility for causing our youth to drift around aimlessly, and where is the remedy.He directs his pervasive shafts of criticism against the schools as they exist in certain parts of the United States;but,to him,it is in the progressive development or improvement within the system of schools that the remedy lies. (63,p.44:61,p.8) Mr.Beckwith devotes several pages (63,p.100) to the practical accomplishments of Dr.Georg Kerschensteiner,of whom mention has already been made,and who won the prize,in 1900,of the Royal Academy of Sciences of Erfurt,for the best essay on the subject of the most desirable education for boys between the common-school(i.e.,14th year) and the military -service age(i.e., 20th year. In that essay,"Staatsburgerliche Erziehung der

deutschen Jugend," or "Education for Citizenship,"he postulates the fulfillment of the functions of the modern constitutional State:

"By giving to everyone the most extensive education, one that insures (a) a knowledge of the functions of the State and (b) personal efficiency of the highest degree attainable." (Vid.64,p.46)

To this standard it will be seen that the so-called films of opportunity are of help for they disclose to the observer some avenue of employment.The eye is the thing.Cinematography comes into its own estate fearing no competition in the educational or even "katharsis" or "purification" field.We now realize that it may achieve its richest usefulness--the living,up-to-the-minute,textbook.(48,p.447)

VIII

There is the idea of play and of dramatic instinct in education as interacting or being correlated with the biograph, that I now wish to discuss.We know that the play idea is an inheritance of the race.Froebel,probably having this fact in mind, even emphasized play,dramatization,songs and story telling;and these things,says John Dewey,"are the kindergarten inventor's permanent contributions."(36,p.106)

Throughout the active periods of life prior to senility the influence of the spirit of play,of the festival,processional and pageant, and of the drama,is powerful.In normal times this is amply proven by the attendance of hosts of people in the theatres,and also by the constant desire of tyros and amateurs

to produce theatricals.Dramatists divine that humanity cherishes the experiences and feelings of others by a sort of proxy,harp upon this characteristic in their technique of the drama.Thus we have at times,the play of tears,the emotional play or the didactic play,or Hervieu's type of thesis play.The dramatic art is, therefore,not to be overlooked in any school curriculum.But it is the reverse that we meet with in many of our schools.There, controlled,as yet,by incompetent expositors of the art of dramatic expression and representation,the emotional nature,the longing for self-assertion on the part of the pupils,are,more frequently than rarely,neither satisfied nor even directed.The imagination of our youth is being stimulated by events of daily life other than those of the "old home,"notably that of the nickelodeon,the haven of refuge of those who seek excitement and dramatic inspiration!Pedagogically speaking,the value of dramatization rests on its power of holding the pupil's interest and attention without his voluntary or conscious effort.

Miss Alice Macleod,of the University of Montana,is one of those who feels the isolation of the school and sees in the play a feature well-circumstanced to overcome this aloofness.She holds a brief for the play in school and says:-

"There will also be moral stimulus derived from this phase of activity in the school. Impulses of graciousness,heroism,truth,loyalty,will be freed and put into play.The natural response to healthy sentiment will develop emotion in a normal way and keep it from becoming perverted,a result which too often comes from a lack of safe food for the imagination." (65)

G.Stanley Hall,also,in his preface to Elnora Whitman Curtis'book "The Dramatic Instinct in Education,"(66,p.xiii) declares that the dramatic instinct makes for widened sympathies,increased power of appreciation,keeps the sutures of the soul from closing and prolongs its nascent period.Psychic decay is delayed or postponed by play and story-telling,both of which tend to knit up all the component elements of the soul into a unity.Here,once again, recognition is given to the cinematograph(66,p.xv;p.158 et seq.) by Hall and by Miss Curtis,for we know that the story on the screen has invariably a strong appeal."Surely the function of the school is not only to utilize the dramatic instinct in the curriculum,but,by means of it,to train the faculty of criticism and appreciation,so as to work toward the general uplifting of public morals."(66,p.223)

I have referred to the realism of the film,--its convincing make-belief,and its remarkable development of pantomime. Now,it is known that young persons love to deal with a story that is "really" true,and the persons in it real persons.Why always lectures,the question-and-answer principle,or the "listening" basis in class work? To be sure language conveys thought,but so also does facial expression--a fact which is often forgotten by teachers,--but which element in the best scenarios of the movies, is the keystone of the dramatic arch.When children by sympathetic touch are encouraged to tell or act what they saw,we discover there one of the basic desiderata in the method of teaching.The "play" method brings in its train handicraft and art,for "stage properties" must be improvised.A strong exponent of this

method is Harriet Finlay-Johnson who summarises her teachings in these words: "After all,"al the world's a stage." What were all our heroes of history but men who held the centre of the world's stage for a time,and so acted their daily parts that they made a success of their play? ..... It seems to me quite natural for every one to act and not only the gifted few."(67,pp.149 and 165)

Compare the foregoing advocacy of the play idea in our schools with the prevailing substitute in the guise of the moving picture show,the nature of which is exemplified by the facts that I am about to mention.

The Survey(68,p.749) records an investigation of the likes and dislikes of the motion pictures by the grammar grade pupils in Providence,R.I.,and some interesting answers were received.Here is one set of them:-

"I don't like love pictures,they are silly,"was the usual comment of the boys on amorous scenes.Many girls,however,agreed with the one who wrote:-

"I like love making pictures best.It is exciting when two men want to marry the same girl."

These frivilous answers contain an underlying vein of seriousness which only form the counterpart of the cold numeration of statistics.I quote the following classification of the 2,364 Providence,R.I.,pupils,as to the answers given to the investigator:-

| Class | Grade | Totals |
|---|---|---|

| Class | Grade | | | | Totals |
|---|---|---|---|---|---|
| | (5) | (6) | (7) | (8) | |
| Comedy | 85 | 90 | 99 | 100 | 364 |
| Western or Cowboy | 192 | 211 | 186 | 146 | 735 |
| Educational | 95 | 183 | 317 | 312 | 907 |
| Drama | 25 | 34 | 36 | 44 | 139 |
| Do not attend | 20 | 44 | 47 | 45 | 156 |
| Crime | 5 | 19 | 10 | 29 | 63 |
| | | | | | 2,364 |

Let us ,further, juxtapose the figures obtained by investigators in Cleveland. There, the Cleveland Humane Society examined 290 films, and saw fit to condemn 40 per cent. of them as objectionable. The improper features in the order of prevalence were:-

Stealing 13.4%; Murder 13.1%; Drunkenness 13.1%; Indecent Suggestion 8.2%; House Breaking 7.2%; Loose ideals of marriage 6.5%; Domestic infidelity 5.8%; Vicious mischief 5.8%; Suicide 3 films; and Kidnapping 2 films.

This experience can be multiplied by instances taken from most every city. To remedy this the House Committee on Education in the United States Congress, is seriously considering a project of Federal Censorship of Moving Pictures; and as Canada secures 90 per cent. of its film service from the United States, the citizens of the Dominion are vitally interested in the outcome of the Committees decision to the House. The influential Press in the Republic oppose this censorship which forbids printing a picture before publication because it strikes at the very

liberties of the Constitution which guarantees the freedom of writing and printing.(69)Also,Mr.John Collier,one of the best informed of American men on the subject of censorship of the movies and the theatre,is opposed to National censorship because it is difficult to get standards for all purposes.He places his hopes upon the creating of a right relation between the public and the drama.(70,p.9) The conclusion to which I have arrived is,I consider ,a fair one.It is the resultant of two conditions,--firstly,because of the perambulatory character of the film,which John Collier graphically represents after it is once released,as fleeing "on its mechanical route,from theatre to theatre,from state to state,ultimately from continent to continent;" and secondly, because unrestricted,it endangers the recreation hours and undoes the education of our youth in the land,----that compels us to install the moving picture in our schools where it can best and most efficiently be selected and supervised,not with a mercenary, but with an ethical and pedagogical end in view.

The foregoing discloses the dramatic instinct of the pupils,and,also,by representing the reverse side of the medal,explains why the motion picture ought to be in a place where it can be "censored" in the furtherance of an educational policy, namely,in the school.When that day comes "our Shakespeare,"the personifier of the dramatic moments in life,will revive phoenix-like,and the glory of "play" and the "drama" and the "city-state" will each,in turn,come into its rightful renaissance.

The modern idea of play is ably comprehended by Joseph Lee(71) in his chapter " Play the Restorer," What

he there states resembles in richness a paragraph from the writings of John Dewey,and is worth thinking about.I will bring this section to a close by quoting an admirable excerpt from that chapter:-

"Society,like the individual,has an invisible body toward which it tends.When any person so places himself as to fill out that form he is received into it. ..... But this invisible body varies in its form.It exists in the minds of the people and changes with their thought.And it is only the places that the public conception calls for that exists,and in filling which a man partakes of the common life.There is a spiritual as well as a material demand,and the supply must correspond. Athens produced philosophers and artists because every citizen's conception of the body politic--the real Athens of which the Parthenon and the Long Walls were but the material reflection--included philosophy and art.So Sparta produced soldiers, Rome administrators,Yale football players.These were called up from the mass by the voice of the corporate ideal.A great tradition can raise up spiritual children out of the very stones. Individuals will arise to fill out the unseen body that the city has projected in its heart."

IX

The reorganization of a school curriculum,--in the face of an awe inspiring progress of the sciences and inventions,in a word,in a "Faradic" age,--must be an apparent duty.It is,indeed, sempiternal,or it should be,with us.Our methods and outlook,which heretofore had been quite the fashion,ought to be changed when

experts propose to grapple with the question of the school and its functions.Are we not in the midst of an era of revolution,--not unlike that which Georg Brandes describes with such complete mastery in his "Main Currents of Nineteenth Century Literature,"--in which modern industrialism,the financial and mercantile systems,state socialism with the fever-heat pursuit after the principles of material and political equality,and the reinterpretation of the bases of Art, Literature,Life and Law,are all absorbing the students' attention and are being put to the test?To make life possible,to make life good,that is the conception of the State as old as Aristotle.But in practice this is of slow growth: for education and social legislation are ,to all appearances,minor cards in the hands of the Party Leader in power;they are not considered as pressing as the questions of the tariff.It resolves itself, --and this is pretty much the opinion of Michelet,Turgot, Dicey,Dewey and Sidney Low, --to the reorganization of the school and the direction of its affairs by persons who are not,when they have attained to a commanding position,"behind the age."(72, p. xxxv)

The opposition to the motion picture in our school, in view of what has been said, is reduced to an untenable and indefensible position when considered in the light of what Nicholas Murray Butler asserts.In his essay,"Is there a New Education"(33, p.91) he invites us to investigate any course of study by this question,"Does it lead to a knowledge of our contemporary civilization?" And he answers,"If not,it is neither efficient nor liberal."

Now in many ways the aphorism,What the eye does not see the heart does not feel,is true of the cinematograph.Holding aloft this beacon-like feature coupled with Butler's maxim,the advocates of the film in the school declare their position unassailable.It is all a question of time and the organization of a manufacturing corporation which will "publish" screen productions for the schools as publishing houses produce texts for the school.

Before I enter upon the question of cost of film installation I wish to bring together all facts relating to what may be studied in schools and in universities by means of the movies.In George R.Kleine's catalogue "An Educational System by Visualization" (Chicago) over one thousand films are listed.In the University of Nebraska,Dr.George E.Condra is devoting attention to movies for the state schools;and remarkable pioneer work has been accomplished by Dean E.Reber and William H.Dudley,of the Department of Visual Instruction of the University of Wisconsin,who have a nucleus for a state film library for educational purposes. Only recently(Sept.9,1915) the United States Department of Agriculture displayed moving pictures of the various processes in the poultry industry before the New Jersey Poultry Association.In the machinists' trade the operations of accurately filing a flat surface on a piece of cast iron held in a vise,the operations of chucking a casting on the face-plate of a lathe,boring and facing the operation of clipping with the hammer and chisel,scraping, lapping,laying out,and many other operations almost impossible of complete description without working examples,could be shown vividly to countless young men in instruction by the movies.

(73)Moving pictures have been successfully made even of the aurora borealis! In the Scientific American (73) there is an article on "Fluid and Apparently Living Crystals," by Prof.Ernst Sommerfeldt,where also one could see an illustration,fig.2,of the "Sommerfeldt and Siedentopf's Kinematograph-microscope" for making moving pictures of fluid crystals. The results achieved by Dr.Otto Driesen,of Berlin,by combining the cinematograph and the graphophone (Cf.66,p.160)were demonstrated in Brussels.In Berlin he showed a scientific society how embryology might be described,picturing the progressive development from the germ in the egg to the fully developed chick.He gave the processes in the cotton industry of the United States,from the planting of the seed to the manufactured product; the details of the "sleeping sickness," the ebb and flow of the tide,the construction of earth works,typical symptoms that attack earth-workers,the explosion of submarine mines, and the different positions of Napoleon at the battle of Austerlitz.His lecture was convincing.It is reported that the comic papers commented upon this fact by saying that,"it would be a good thing if school were done away with,and the theatre put in its place!"

Furthermore,there is a newer field of cinematographic adaptation,namely,chronophotography.According to Pierce J.Fleming (74,p.344),who writes in the Pedagogical Seminary,"chronophotography on a fixed plate,has furnished the experimental solution of many problems in geometry,mechanics,physics,and physiology, that no other method could so readily have solved." He states further that in mechanics,also,the very many difficulties

which Galileo and Atwood had to surmount in order to determine the laws of motion,of velocities,and of accelerations,will,for the future,be lessened for those who make use of chronophotography for this purpose.The movies have even been requisitioned for " "safety-first" propaganda.This was the case in Vienna and in Düsseldorf where the city authorities taught people the proper way to get on and off street cars.(75) The Departments of Commerce, of the Interior,and of the Public Health Service,of the United States have given to the citizens of the Republic information in films which the government experts have collected.Thrift was taught to a wide constituency by the American Bankers' Association's motion pictures.And who has not heard of the churches being crowded when films were to be used in the service?Note this as an extraordinary orientation in civic affairs.Realizing the educational value of the cinematograph the Norwegian cities of Vardo,Tromso,Fredrikshald,Notodden,Christiania,and Trodhjem are considering the proposal to municipalize the motion picture theatre. In a report made to his government by A.Jury,the Canadian Government Emigration Agent for the West of England,we come across this practical and convincing opinion:-

"But I think the time has arrived for a departure from the present system of lecturing.The delivering of lantern lectures has been followed for the last fifteen years, ..... I would suggest that the Department supply their agents here with films,or that the lecture propaganda be very considerably curtailed.I consider the lectures without films in this district have been a waste of money."

And he goes on to say that if the agents do not provide moving pictures at government lectures,they shall be unable to obtain an audience.(76,p.78)

It is small wonder,therefore,that the faith in the cinema drama and movies in general should be so enthusiastically maintained by such an expert as Thomas A.Edison.In an interview granted to Gregory Mason in 1914,Edison stamped the film as an educational device with his absolute approval."Give the child objects,something that can be visualized,let it see with its own eyes, and it is astounding how rapidly that child will learn."

"For instance," he continued,"I defy any one by means of books alone to give a child of twelve an understanding of how an ordinary electric motor works,but with moving pictures I can give nine children out of ten at this age a complete comprehension of the problem."

"First,I would show the details separately,as we do in all our pictures of mechanical subjects.When the child had got these fixed in his mind,I would show him a photograph of the whole machine at work,and he would know more about it than a good many adults who had studied the machine in books or used it without taking it apart.As an aid to education moving pictures can do more than any of the usual agencies,books,magazines,newspapers, and talk." (75)

Clearly,then, the still picture,the magic lantern,the stereopticon are giving way fastly to the superiority of the cinematograph. "The moving picture is universal.It carries much meaning without language.Interpretation of action is an in-

stinctive tendency," says Superintendent J.R.Fulk.(77,p.456) Dr. J.E.Wallace Wallin (46,p.131) considers that the superiority of the biograph over the stereopticon,and,perhaps,over the laboratory,is in a large measure due to its perennial appeal appeal to these powerful factors of instinctive interest.The outstanding intrinsicality is that the stereopticon is limited to "static" presentations,the cinematograph can reproduce"processes" themselves in all their sharp detail.

I can now fairly well sum up the various subjects which are demonstratable by cinematography; and which may,with justice, be said to be beyond the stage of experimentation.Here follow the topics which have been flashed upon the screen:- Aeronautics,Agriculture,Aid to Social Philantropic Propaganda, Analysis of the Flow on Concrete(78),Animal Life,Animated Gazette,Archaeology/Architecture,Astronomy,Bacteriology,Bible Study,Biography, Biology,Botany,Chemistry,Civics,Commerce,Dramatics,Entomology, Ethnology,Fisheries,Forestry,Geography,Geometry,Geology,History, Hydraulics,Hydro-dynamics,Industrial Subjects,Kindergarten Studies,Literature,Mechanics,Mettalurgy,Microscopy,Mining,Military and Naval Science,Motion-study for War-cripples (79),Munition Velocities,Music,Natural History,Navigation,Ornithology,Pathology,Physical Culture and Health Exercises,Physics,Physiology, Pisciculture,Poetry,Polar Explorations(48,p.448),Political Campaigning, Psychology (44),Public Health,Railroading,Religion, Salesmanship,Seismology,Sociology,Topical Studies,Transportation ,Travel,Under-sea Life,Vocational Guidance and Counsellorship, and Zoology.Another big field of utility,of course,is in

inducing emigration,and in this respect it is being largely used by governments and transportation companies.It may be taken for granted that these same films,with their superb applied cinema technique,could be extended in their sphere of usefulness by being translated into our schools and universities,in addition to the more commercial aim of a "Sir Hedley Le Bas-like"advertising plan.

Eye-strain at the movies is a matter,at times,adverted to.Dr.J.Norman Risley,of Philadelphia,notes that irritation to the eye may be attributed to "flickering" or vibration,inaccurate and variable focusing of the pictures,also the relation the light reflected from the screen bears to the visual plane of the observer.The unnatural swiftness at which films,in the hands of careless operators,are reeled off,sitting too near the screen,and the use of scratched films,giving poor definition,are other causes. These are matters of serious import since motion picture projection rests upon the physiological phenomenon of persistence of visual impression whereby there is printed on the retina an image that remains about one-sixteenth of a second.(80,p.146) So upon closer investigation it will be ascertained that the eye has to "play up" in the enormously more rapid and continuously exacting game of binding the gaps of the motion picture film.Much of the eye-fatigue,if not all of it,may be eliminated by the use of a motor driven machine and speed regulator;by the use of the arc light with direct current;to have screens free from a disagreeable glare( a "mirror screen" consisting of a mirror glass with a frosted surface is recommended); never to use inferior

strips of pictures having been in service over a month; and lastly,to allow three minutes intermission between the reels.(81)

The invention of the Vanoscope (80) also bids fair to reduce eye-strain to a minimum.Dr.Risley considers that by projecting pictures on the screen on an ascending plane of sufficient degree to reflect the rays above the visual line of the audience it would be possible to remove this irritating symptomatic feature.With the wide choice of apparatus of the safety-first type now available,it is quite easy for schools,colleges,and theatres,too,if they were not so deeply commercialized and ob - sessed with the idea of economy in cost of running expense,---to equip themselves with motion picture projectors and component parts that would remove all cause of complaint.

X

The question now presents itself whether the cinematograph can be conveniently installed and operated in the school building.To this query there are instances to show its practicability and safety.In the case of the still picture,I notice from the projection apparatus catalogue of the A.T.Thompson & Co.,of Boston,that they have supplied stereopticons or reflectoscopes to upwards of 600 educational institutions in the United States and in Canada.Facilities,in all these cases,were provided for lantern projection,and this,too,at considerable expense.Now the transition to the adaptation of the film to cases where the stereopticon was used is one of little difficulty,even if the standard projectors were to be selected. But the matter has been more simplified of late by the invention of which W.H.Ives, of the

Educational Department,of the Thomas A.Edison,Inc.,describes.(77, p.1231)This small kinetoscope can be operated by either direct or alternating current;the film employed will burn about one-half as fast as the same quantity of paper;eighty feet of this small film contain as many pictures as one thousand feet of regular film;and from the small picture,less than three-sixteenths of an inch high and one-fourth of an inch wide,which can be enlarged to 350 diameters,a six-foot picture can be thrown on the screen.

A more recent apparatus has been brought out by the Pathé Frères of Paris,known as the"Pathéscope." It is very light in weight,uses a non-inflammable film of special size and special perforations,operated either by alternating or direct current, and gives a picture 4½ feet by 6 feet.This instrument may be operated with any 110- or 120-volt lighting circuit,or,if electric juice is not available,it can be made to function by any dry or storage battery of 14-volt,2-ampère capacity.So far this is the most convenient apparatus for movies in the class room.An added attraction is that there is already anorganized film exchange supplying hundreds of topics rolled on handy film reels.

In the line of standard moving picture machines,fed by the standardized film,there are quite a number on the market. The Atlas Educational Film Company of Chicago,have a fireproof "Atlas Model No.2,Portable Motion Picture Projector" which is equipped with the standard Geneva movement registering sixteen pictures to each revolution of the handle.It is claimed for it, that connection with an ordinary incandescent lamp socket will provide illumination sufficient for a perfect 10-foot picture

any distance up to 75 feet.Another portable projector is the "Animatograph,"manufactured by the Victor Animatograph Company,of Davenport,Iowa,which,though also drawing current from any incandescent lighting circuit,has several important improvements.The mechanism will not tear,scratch,or in any way mutilate the film; the optical system,allowing of a permanently align and permanent-centred arc lamp,is thus designed to properly illuminate the standard motion picture film aperture instead of the standard slide opening; and with the Victor electric arc,using a rheostat, one can get two different intensities of light.

However,by far the most popular projector,is the Edison Kinetoscope,Model D,which is approved by the National Board of Fire Underwriters. But here,having dealt with the projector, the problem of installing the moving picture machine confronts us.Fortunately manufacturers have given consideration to the matter.One of them,the Canadian H.W.Johns-Mansville Co.,Limited, have placed before the trade several styles of "Transite Asbestos Wood Permanent or Portable Booths " which have a decided advantage over the galvanized iron booths in vogue,in that the latter are unsightly in appearance,and also allow the vibration of the film reels--when not properly adjusted--to pass through.This company also sells an "Asbestos Portable Booth"of plain cloth, at a lower price than the former ones.They have been used successfully by the Ontario Government in connection with the propaganda work of the Health Department.

It is admitted that one of the great obstacles to overcome is the lack of a central films' exchange for the schools.

Edison foresaw this when he said,"Films are too expensive for the average individual school;we ought to have a few hundred or a thousand schools coöperating and relaying the films along."(75) He felt that there would then be a regular and steady market for educational films,and manufacturers would meet this market as school-book publishers meet the demand for specialized school-books;and that one big manufacturer could meet the whole demand, if necessary. The "Report of the School Inquiry of New York City" (54,p.445) sees the difficulty and suggests a remedy."The remedy for this condition lies in organization;in the establishment of an educational film exchange,supplying a number of institutions together and the purchase of an independent film library.By this means the rental cost of an educational film could be reduced from the present rate of from one to eight dollars a day to from fifty cents to two dollars."

There are several agencies now striving to realize Edison's vision of a universal film service or film library.In Wisconsin,Prof.W.H.Dudley tells us that the University has purchased a fairly complete stock of films which they are loaning to state schools who have in many cases already bought the requisite projection machines. Francis Holley,Director,Bureau of Commercial Economics,in Philadelphia,is now operating the service of educational films which he supplies gratuitously to schools and colleges.Then there is the Atlas Educational Film Company,of Chicago,who give a weekly or bi-weekly service on a contract covering ten or more programmes,at $4.00 for three reels,or four reels for $5.00,cash with order,unless credit is established.

The Missouri Valley Film Company,of Lincoln,Nbr.,are entering upon this field of activity,and from their experience they think that it is only a matter of a couple of years until all the schools in the middle west will have their own projectors, and will have daily or tri-weekly exhibitions as a part of the regular curriculum.One of the ambitious firms with unequivocal hopes is that of the "Pathéscope Of Canada Limited," which is giving owners of Pathéscopes a continuous supply of fresh subjects,each subject taking about 20 minutes to reel off. For $75.00 per annum it supplies five films per week,or ten films per week, at $125.00 per annum:in either case the films may be exchanged as frequently as desired. In addition to the foregoing there is "The Church and School Social Service Bureau,"of New York City,of whic(h) the following are some of the officers:- Rev.Charles H.Parkhurst Gen.E.A.McAlpin,Mr.Hamilton Holt,and Dr.Josiah Strong.For $12.00 per week the Bureau will provide a five reel once a week programme including all the apparatus;or,it will sell outright (a) a small machine for $100.00 to $150.00,absolutely fireproof,(b) a large standard machine for $225.00 to $275.00,and will then rent reels from $1.75 and up per day. It will be observed that the immediate need of the hour to carry out the plan of having movies in the schools is a universal film service with a nation-wide regular users of such a film exchange-service.

On the question of cost of equipment for motion picture projection the class of machine selected is the controlling factor.Just for the sake of comparison I wish to quote average prices for educational lanterns. The A.T.Thompson Reflectoscope

Model B,complete,costs $260.00, and fully equipped for,let us say,the instruction of Physics,it would be about $500.00.The "Ideal" Dissolving Stereopticons range in price from $163.00 to $257.00 according to equipment selected,and the "Ideal" Electric Incandescent Lantern,with ¼-size objective,would be $55.00.Then there is the cost of wiring and of slides.

On the other hand,take the "Popular Pathéscope" to which I have already alluded and which sells in Canada for $250. 00 complete.Though the prices,upon first glance appear to be high ,still,in several instances,the charges are not much inadvance of what is demanded for a first class educational stereopticon or reflectoscope. The "Atlas Model"No.2,which weighs less than 35 pounds and is only 36 inches high,and uses standard 1000-foot reels,sells in the United States for $125.00.Then there is the "Victor Animatograph,"which is a compact machine,also using 1,000 feet of standard width film,and adapted to the projection of slides,and its price in Canada is $150.00.Another machine,somewhat popular,is "Power's Cameragraph," the United States price of which is approximately $195.00.Then we have the "Vanoscope," (80) much commended,and being a special product,the price of which is to be had only upon application to its manufacturers. But,perhaps,the most popular of them all is the "Edison Kinetoscope,"Model "D",the price of which is $260.00.

In the case of the larger standard projecting machines it is imperative for safety's sake to have booths either permanent or portable envelopping or enclosing them. The Johns-Manville Transite Asbestos Wood Booths,average F.O.B.,Montreal,

$140.00 for permanent one,and for the portable one,$150.00.If one selects a "Plain Asbestos Cloth Booth" of sufficient size for one projection machine the price is reduced to $85.00.As for the screen,about ten dollars ought to cover its cost.If any school should decide upon storing its films,then it is wise to provide a "J.-M.Film Storage Booth" which varies as to price according to specifications.

XI

From the foregoing dissertation a number of conclusions may be postulated by way of recapitulation.The newer conception of public education,with the supervening idea of socializing the school and the advocacy of trade improvement schools, encourages the school and university to take their helping devices wherever they may find them.Account must be taken of the social evolution and intellectual revolution of the age which counsel us to direct our efforts towards causing contemporary conventional education to adjust itself to the change that has overcome the great society.Nothing ought to be too expensive for the carrying out of the functions of our schools of elementary and higher learning.Psychologically,instruction by means of the moving picture is sound,for it proves a compelling and innate characteristic of our nature to attend to things that move.From the sociological standpoint the public film is not inoccuous; and has even been a means of mischief to our youth in our cities. The force of the movies must be utilized where it can best be controlled,namely,in the school.The pedagogical value of the film,both in university and/in school work,has been shown to be

even greater than that expected of it by its most sanguine well-wishers and proponents.It has been adapted to subjects running through the whole gamut of knowledge from aeronautics to zoology. The financial aspect offers no insurmountable problem.Indeed, co-operation among a series of schools,following the Wisconsin plan, can solve the problem of cost.But by far the most cogent and decisive point of the matter is that there are already on the market "fool-proof" projection machines,and non-burning film,with a host of other safety devices,which make the cinematograph welcome within the confines of a school building. Add to this the stamp of unqualified approval bestowed by eminent educators,in all openness and frankness,upon the possibilities of the controlled moving picture as a means of instruction,--sound psychologically and pedagogically, as well as physiologically harmless,--and we get a conception of the whole question of the influence of cinematography on present day educational systems which,perforce, ought to leave us completely convinced of its intrinsic and syncretic capabilities.

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