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;;;DOS WEBINAR 5/16/2013

GOOD AFTERNOON, EVERYBODY, GOOD MORNING DEPENDING ON WHERE YOU'RE JOINING US FROM.

I'M MIKE, I'M WITH LEARNING TIMES.

PLEASURE TO BE WITH YOU TODAY FOR THIS THIRD PART IN OUR CARING FOR PHOTOGRAPHS ONLINE COURSE.

BEFORE WE GET STARTED, I JUST WANT TO REMIND PEOPLE THAT THE SESSION IS GOING TO BE RECORDED AND THE RECORDING WILL BECOME AVAILABLE FOLLOWING THE END OF THE SERIES.

IN ADDITION TO THAT, CURRENTLY THERE IS AN UNMODERATED CHAT WINDOW ON THE LEFT OF YOUR SCREEN.

YOU CAN LET US KNOW WHERE YOU'RE JOINING US FROM.

ALWAYS NICE TO SEE WHERE PEOPLE ARE COMING FROM.

AND AS WELL, ONCE WE GET UNDERWAY, THAT WILL BE REPLACED BY A MODERATED CHAT, WHICH MEANS THAT WHEN YOU SUBMIT YOUR QUESTION, YOU WILL NOT SEE IT APPEAR IMMEDIATELY.

WHEN YOU DO SEE IT APPEAR, YOU WILL SEE IT TWICE.

THE FIRST TIME, SIMPLY IS A CONFIRMATION FOR YOURSELF THAT YOU HAVE SUBMITTED YOUR QUESTION.

THE SECOND TIME IS ONCE WE HAVE MODERATED IT AND IT IS RELEASED FOR GENERAL VIEWING.

SO JUST WANT TO LET YOU KNOW THAT'S WHY YOU'RE GOING SEE YOUR QUESTION APPEAR TWICE.

SO WITH NO FURTHER DELAY, I'M
STARTING THE RECORDING.
I WOULD LIKE NOW TO INVITE OUR
HOST, KRISTIN FROM HERITAGE
PRESERVATION TO BEGIN WHENEVER
YOU'RE READY.

.
>> THANK YOU SO MUCH, MIKE.
THIS IS KRISTIN, HERITAGE
PRESERVATION.
WELCOME BACK TO OUR COURSE,
CARING FOR PHOTOGRAPHS.
THIS IS OUR THIRD WEBINAR IN THE
SERIES.

WE WANT TO THANK LEARNING TIME
AGAIN FOR THEIR HELP IN
PRODUCING IT AND INSTITUTE OF
MUSEUM AND LIBRARY SERVICES FOR
THE FUNDING THAT MAKES THIS
POSSIBLE.
AND MAKES THIS FREE OF CHARGE TO
EVERY ONE.

ALSO THANK GRETA FOR JOINING US,
SHE WILL HELP ANSWER QUESTIONS
DURING THE PRESENTATION.
WELCOME BACK, GRETA.

AGAIN, THIS IS OUR THIRD
WEBINAR, SECOND PART OF OUR
TECHNOLOGICAL DEVELOPMENT OF
PHOTOGRAPHY.

GET IN TO MORE OF THE NEGATIVE
PROCESSES TODAY.

WE'LL HAVE TWO MORE WEBINARS
NEXT WEEK ON TUESDAY AND
THURSDAY.

THIS WILL BE BACK TO REGULARLY
SCHEDULED TIME OF 1:00 TO 2:30.
THANKS AGAIN FOR ADJUSTING YOUR
SCHEDULE TO JOIN US A LITTLE
LATER TODAY.

AGAIN, THE COURSE WEB PAGE IS
WHERE YOU CAN FIND THE POWER
POINT FROM TODAY'S PRESENTATION
AFTER THE CLASS.

LINKS TO THE HOMEWORK AND A
GREAT BIBLIOGRAPHY OF RESOURCES
WE HOPE YOU WILL TAKE ADVANTAGE

OF.

AND REMEMBER ALSO THAT WE HAVE A HANDFUL OF PUBLICATIONS THAT ARE AVAILABLE THROUGH THE GHETE AND THEY'RE OFFERING A 30% DISCOUNT. I'VE ADDED THAT INFORMATION IN THE COURSE PAGE AS WELL.

SO IN TIME WE WILL, AFTER THE WHOLE COURSE CONCLUDES WE WILL BE PUTTING RECORDINGS ON THIS PAGE.

MEANTIME, LOOK FOR E-MAILS FROM US THAT GIVE YOU THE RECORDING LINK AFTER EACH CLASS HAS AIRED. JUST REMEMBER THAT THURSDAY, MAY 30, IS OUR DEADLINE FOR COMPLETING ALL OF THE HOMEWORK ASSIGNMENTS OR WATCHING ANY WEBINARS THAT YOU HAVE MISSED. SO IF YOU MEET THAT DEADLINE YOU'LL BE RECEIVING OUR CERTIFICATE AND CREDENTIAL FOR THIS COURSE.

IF YOU HAVE ANY QUESTIONS, ALWAYS LET US KNOW.

IT'S AT INFO AT HERITAGE PRESERVATION.ORG.

THAT'S THE E-MAIL WE SEND TO THE GROUP ALSO COME FROM THIS ADDRESS.

MAKE SURE THAT IT'S A SAFE SENDER IN YOUR E-MAIL.

DEBBIE HAS OFFERED TO LOOK AT PHOTOGRAPHS THAT YOU HAVE IN YOUR COLLECTION, EITHER THINGS YOU THINK ARE INTERESTING AND ARE VERY SIGNIFICANT TO YOUR INSTITUTION OR THINGS YOU HAVE QUESTIONS ABOUT OR THERE'S DAMAGE.

AND SHE WOULD WELCOME YOU TO SEND THOSE TO HER.

SHE WILL CONTINUE TO INCLUDE THEM IN HER POWER POINT PRESENTATIONS.

ESPECIALLY IN HER FINAL% PRESENTATION, ON ADVOCACY FOR

PRESERVATION.

AND WE PUT A G-MAIL ADDRESS
BECAUSE WE CAN HANDLE LARGER
ATTACHMENTS TO OUR G-MAIL
ACCOUNTS.

I'M PUTTING IT HERE.

IF YOU'RE HAVING TROUBLE, ALWAYS
SHOOT US AN E-MAIL, INFO AT AND
WE'LL WORK WITH YOU TO GET THE
FILES.

I WANTED TO SAY WE HAVE LOOKED
AT THE HOMEWORK ASSIGNMENT YOU
DID FOR LAST TIME, WHICH ASKED
TO YOU USE THE GRAPHIC ATLAS TO
IDENTIFY A PHOTO PRINT IN YOUR
COLLECTION TO, SUGGEST WHAT
WOULD BE NEEDED TO TEAR FOR
THOSE PHOTOS.

TO CARE FOR THOSE PHOTOS.

REALLY GREAT STORIES.

THANK YOU FOR ALL OF THOSE WHO
HAVE DONE THAT HOMEWORK.

THIS WILL BE, SOME OF THE
STORIES WERE SO INTERESTING
ABOUT THE SIGNIFICANCE.

THOSE WILL BE GREAT EXAMPLES TO
SEND ON TO DEBBIE.

WE'LL SHARE THOSE NOTES WITH HER
AS WELL.

SO I WANT TO WELCOME BACK
DEBBIE.

FIRST WE WERE GOING TO DO A POLL
BECAUSE TODAY WE'RE GOING TO
TALK ABOUT NEGATIVES.

THERE'S A HANDFUL OF CATEGORIES.
WE THOUGHT IF YOU'RE AWARE OF
THEM, IF COULD YOU CHECK OFF
WHAT TYPES OF NEGATIVES YOU HAVE
IN YOUR INSTITUTION.

DON'T KNOW IS A FINE ANSWER IF
YOU'RE NOT SURE, YOU WILL LEARN
TODAY.

SO JUST GIVES DEBBIE A HEAD'S UP
ON WHAT SORTS OF THINGS YOU
MIGHT HAVE AND THEN SHE MIGHT
CHANGE HOW SHE WILL ADDRESS
THEM.

LOOKS LIKE A GREAT MIX OF ALL
TYPES.
THAT'S USEFUL.
I'M GROWING TO TRY TO SQUEEZE
ANOTHER POLL ON TO THE SCREEN.
I HOPE EVERYONE CAN SEE.
THIS SORT OF GETTING AN ESTIMATE
ON THE QUANTITY OF THINGS THAT
YOU MIGHT HAVE.
I'M SORRY, I'M JUST GOING TO
RESIZE THIS A BIT.
AS SOON AS WE CAN SQUEEZE IT IN.
HOPEFULLY YOU CAN SEE ALL OF
THAT.
IF YOU DON'T HAVE ANY NEGATIVES,
I SEE SOMEBODY ASKED, THAT'S
FINE TOO.
I THINK THERE'S LOTS, DEBBIE
WILL BE REVEALING PRINTS AND
LOTS OF APPLICABLE TIPS AND
INFORMATION THAT YOU CAN RELATE
TODAY.
GREAT.
I'M GOING TO CLOSE THESE.
THEN I'M GOING TO DRAG AWAY THE
BOX YOU'VE BEEN CHATTING IN.
WE WILL CHANGE THAT WITH A
MODERATED CHAT THAT MIKE
MENTIONED.
FEEL FREE TO KEEP GOING WITH ANY
QUESTIONS OR WELCOME.
DEBBIE, I WILL PULL UP YOUR
POWER POINT HERE.
THERE YOU GO!
I'LL TURN ITSELF OVER TO YOU.
THANK YOU!
>> NOW IT'S A FULL SCREEN.
HI, EVERYONE.
I'M HAPPY TO BE BACK FOR WEBINAR
NUMBER THREE.
THANK YOU ALL, THOSE WHO HAVE
DONE THE HOMEWORK, MOST
INTERESTING TO FOLLOW IT.
AS KRISTIN SAID, IT'S REALLY
GREAT IF YOU CAN SEND IMAGES,
BECAUSE I CAN INCORPORATE THEM
IN TO THE PRESENTATION WHERE

THEY MIGHT FIT AND REL REAL
STORIES AND TRY TO ADDRESS REAL
PROBLEMS THAT YOU ALL ARE
FACING.

BUT IT'S BEEN A LOT OF FUN.
I HAVE ENJOYED THIS FORM OF
TEACHING.

IT'S VERY DIFFERENT FROM WHAT
I'M USED TO, BUT I DO LOVE THE
FACT THAT WE'RE REACHING SUCH A
WIDE AUDIENCE.

THAT'S BEEN MOST REWARDING.
AS YOU PROBABLY LEARNED I'M A
HUGE FAN, WHY MY LECTURES
STARTED WITH A SONG.

THIS ONE, "HELP" IS PROBABLY
MOST APPROPRIATE FOR NEGATIVE
MATERIALS.

FROM A POLL IT APPEARS THAT MANY
OF YOU HAVE A WIDE SELECTION OF
THESE MATERIALS FROM GLASS PLATE
TO NEGATIVES AND IN MANY CASES
LARGE NUMBERS AS WELL, OVER
10,000 IN MANY INSTITUTIONS.
SO WE'RE GOING TO FOCUS TODAY ON
PHOTOGRAPHIC NEGATIVE MATERIALS
AND TALK A LITTLE BIT ABOUT HOW
TO IDENTIFY THEM.

NEXT WEEK ON TUESDAY, I WILL BE
TALKING MORE ABOUT PRESERVATION
PLANNING, HANDLING, PROPER
STORAGE, SOME OF THE QUESTIONS
THAT HAVE BEEN EMERGING
THROUGHOUT THE HOMEWORK
ASSIGNMENTS AND DURING THE
CONVERSATIONS AND THE CHAT BOX,
ET CETERA.

MOST IMPORTANTLY, WHAT ARE YOU
SEEING HERE?

THIS OF COURSE IS PAUL McCARTNEY
IN CINCINNATI, OHIO, ALMOST TWO
YEARS AGO, AUGUST 4.

A DATE THAT'S SIGNIFICANT TO ME.
I HAVE SEEN PAUL McCARTNEY NOW
17 TIMES, I THINK.

HE'S ON TOUR AGAIN THIS SUMMER,
WHICH I'M MOST EXCITED ABOUT.

MY OLDEST DAUGHTER IS GETTING MARRIED IN JUNE, JUNE 21, BIG PARTY IN YUL SO I HAVE TO WORK AROUND THOSE DATES, PARTY IN JULY.

SO I HOPE TO FOLLOW HIM AS WELL IN SOME OF HIS CONCERTS.

IN CINCINNATI ON AUGUST 4, 2011 AT THIS CONCERTS I ACTUALLY HAD AN OPPORTUNITY TO MEET PAUL McCARTNEY, BRIEFLY.

IT'S A MEMORY THAT I WILL ALWAYS TREASURE.

SO I THOUGHT I WOULD SHARE ONE MORE PICTURE WITH YOU, THEN GET ON TO WHAT'S IMPORTANT.

SO LET'S SEE, FIND THE POINTER. THIS IS ME ACTUALLY HERE.

PRIOR TO THE CONCERT MY HUSBAND SURPRISED ME AND BOUGHT ME FOURTH ROW SEATS.

HERE IS MY SIGN.

I SHOW IT BECAUSE OF THIS PHOTOGRAPH.

THESE ARE COPIES OF PHOTOGRAPHS. BUT THESE ARE IMAGES OF PAUL McCARTNEY FROM 1966 WHEN I SAW HIM WITH MY FATHER IN A CONCERT IN PHILADELPHIA.

I HAD THE GREATEST SIGN, THE SIGN OPENS UP, HAS FIRE, ALL SOME KINDS OF STREAMERS, HEARTS, ACTUALLY HE SAW IT, NODDED AND SMILED.

DURING THE CONCERT IT WAS ACTUALLY FEATURED DURING ONE OF THE SONGS.

SO IT WAS A MOMENT OF ENORMOUS HAPPINESS FOR ME.

ANYWAY, I SHARE THAT WITH YOU. I KNOW THAT YOU'RE NOT HERE TO LEARN ABOUT MY LOVE FOR THE BEATLES, BUT RATHER TO LEARN ABOUT PHOTOGRAPHY.

WHAT I WANTED TO DO, I DON'T WANT TO RUSH THROUGH THIS MATERIAL.

I FELT LIKE WE MAY HAVE RUSHED A BIT TOO MUCH IN THE SECOND WEBINAR, ESPECIALLY, TRYING TO DEAL WITH ALL THESE PHOTOGRAPHIC PRINTING PROCESSES.

THERE'S SO MANY OF THEM.

I KNOW WE WERE GOING THROUGH THEM QUICKLY.

I COULD TELL FROM YOU THE COMMENTS THAT SOME OF YOU WERE GETTING A LITTLE BIT CONFUSED WHICH IS TOTALLY UNDERSTANDABLE. HOPEFULLY BY GOING BACK AND USING THE GRAPHICS ATLAS, THINKING ABOUT YOUR CORRECTION, SOME OF THIS IS CLEAR NOW.

BUT I THOUGHT IT WOULD BE WORTH TAKING 10 MINUTES OR SO AND JUST REVIEWING SOME OF THE HIGH POINTS OF THE TALK THAT WE HAD LAST WEEK AS IT RELATES TO PHOTOGRAPHIC PRINT MATERIALS.

THIS SLIDE PARTICULARLY IS IMPORTANT IN THAT AGAIN, IT BEGINS TO GIVE YOU A SENSE OF THE CHRONOLOGY OF THESE PRINT PROCESSES BECAUSE THERE ARE SO MANY OF THEM.

SO IF YOU BEGIN TO APPRECIATE WHAT PROCESSES WERE POPULAR WHEN AND THEN YOU LOOK AT YOUR COLLECTION, THIS WILL HELP YOU AT LEAST NARROW DOWN THE POSSIBILITIES.

DO I HAVE A SILVER, BLACK AND WHITE?

OR IS THIS A PHOTOGRAPH FROM THE 19th CENTURY INSO I WANTED TO SHARE WITH YOU THIS TIME LINE, WHICH OF COURSE YOU HAVE SEEN ALREADY AS WELL AS THIS, WHICH IS ANOTHER ONE.

THIS ONE IS SORT OF INTERESTING IN THE WAY IT'S DESIGNED IN THAT IT'S SUBTLE BUT THE LINE -- I'M HAVING TROUBLE WITH THE POINTER. HANG ON, YOU GUYS.

I'M HAVING TROUBLE WITH THE POINTER, BUT I DON'T REALLY NEED IT.

THE LINE THAT GOES THROUGH THE CENTER OF THE SLIDE SHOWS YOU FROM WHICH THE NUMBERS ARE SORTS OF BUILDING, ON YOU CAN SEE THAT IT CHANGES COLOR, GOES FROM BROWN TO BLACK TO THE DYES, REMINDER ABOUT WHAT THAT FINAL IMAGE MATERIAL MAY BE.

IN THE 19th CENTURY WE TALKED ABOUT EARLY PAPERS WERE PRINTED OUT BY TAKING LIGHT SENSITIVE PAPER, PLACING IT IN CONTACT WITH A NEGATIVE AND OUT TO THE SUN UNTIL THE IMAGE ACTUALLY PRINTED OUT CREATING AN IMAGES THIS MORE PURPLISH BLACK OR BROWN IN COLOR.

YOU CAN SEE EARLY PHOTOGRAPHS WITH PAPER ARE BROWNER IN TONE. IN THE 20th CENTURY, 1900s, YOU BEGIN TO SEE THE INTRODUCTION OF DEVELOPING PAPERS, PAPERS THAT ARE PRODUCED IN A DARK ROOM WITH AN IMAGE BEING MORE BLACK AND WHITE AS YOU CAN SEE. THE IMAGES DO DETERIORATE.

IMAGES WILL BE FADED. THEY'RE ALL TYPICAL DEGRADATION MECHANISMS.

IN 1960s, INTRODUCTION OR POPULARITY OF COLOR IN WHICH FINAL IMAGE IS ORGANIC DYES EXEMPLIFIED BY THE CROSS-SECTION OF MAGENTA AND YELLOW.

AGAIN, THIS IMAGE, THIS PARTICULAR SLIDE CAN BE HELPFUL NOT JUST FOR THE CHRONOLOGY, BUT EVEN YOU GET A SENSE OF THE IMAGE COLOR, WHICH YOU CAN BEGIN TO ASSOCIATE WITH YOUR COLLECTION.

JUST TO REVIEW THE PROCESS THAT DOMINATES THE 19th CENTURY,

WHICH MANY OF YOU CERTAINLY
HAVE, WHETHER YOU'RE LOCATED IN
BOGOTA, COLOMBIA OR BELIZE OR
SCOTLAND OR SWEDEN, CHINA,
JAPAN, IS THE ALBUMIN PROCESS.
THIS PROCESS DOMINATES 19th
CENTURY.

IT'S A PRINTED OUT PROCESS, MADE
ON A LIGHT WEIGHT PIECE OF PAPER
THAT'S COATED WITH WITH EGG
WHITE OR ALBUMIN.

AND PRINTED OUT IN THE SUN, THE
FINAL IMAGE IS SILVER METAL, WE
CALL IT PHOTOLYTIC SILVER OR
SILVER PRODUCED BY LIGHT.

THE ALBUMIN PRINTS WERE
TYPICALLY WITH GOLD.

AS YOU CAN SEE FROM THE SCHOOL
OF LAW SUBMITTED ONLINE, IN THAT
ALL ALBUMIN PRINTS ARE SOMEWHAT
YELLOW AND FADED.

THE YELLOWING IN THE HIGHLIGHT
AREA IN THE PORTRAITS CAUSED BY
THE EGG WEIGHT BINDER BECAUSE IT
DETERIORATES OVER TIME.

YOU'RE SEEING AN OVERALL
YELLOWING, WHICH IS DEGRADATION
OF THE BINDER LAYER AND CERTAIN
AMOUNT IN ALL IMAGES REALLY OF
IMAGE FADING, WHICH IS A
DETERIORATION OF THAT SILVER UM
IMAGINE.

SO THE SILVER, WHICH IS
ORIGINALLY MORE OF A DARK
PERHAPS PURPLISH BLACK IN COLOR
AS IT DETERIORATES BECOMES BROWN
OR LIGHTER IN TONE.

AND SO YOU'RE SEEING HERE SOME
OF THE CHARACTERISTIC
DETERIORATION PROBLEMS WE
ASSOCIATE WITH THE ALBUMIN
PROCESS.

IN COMPARISON -- LET ME GO BACK
FOR A MINUTE AND MENTION
SOMETHING ELSE.

WE TALKED LAST WEEK ALSO ABOUT
THESE DIFFERENT LAYERS, ONE

LAYER, TWO-LAYERED STRUCTURE WITH PHOTOGRAPHIC PRINT MATERIALS.

ALBUMIN PROCESS IS EXAMPLE OF TWO-LAYERED STRUCTURE, LIGHT WEIGHT PIECE OF PAPER COATED WITH WITH EGG WHITE BINDER. LOOK AT IT UNDER MAGNIFICATION, YOU WILL SEE PAPER FIBERS. LOOK THROUGH THIS TRANSPARENT BINDER LAYER, BUT THERE'S SOMEWHAT MUTED.

THEY'RE NOT AS VISIBLE AS SOMETHING LIKE THE SALTED PAPER PRINT OR THE CYANA TYPE OR PLATINUM PRINT, IMAGE MATERIAL EMBEDDED DIRECTLY IN PAPER SUPPORT T OTHER THING YOU MAY SEE WITH ALBUMIN PRINTS THAT'S CHARACTERISTICS IS A CRACKING OR CRAZING OF THAT EGG WHITE BINDER WHICH HE OCCURS AS IT CONTRACTS AND EXPANDS DIFFERENTLY.

THIS IS A PROCESS THAT DOMINATES THE 19th CENTURY IN COMPARED HERE WITH PHOTOGRAPH OF MUCH GLOSSIER IN TONE AND UNDER MAGNIFICATION IT APPEARS TO BE VERY SMOOTH.

THIS IS A SILVER GEL L_a TIN PAPER, PLACING THIS LIGHT AS SOON AS TIVE PAPER AND CONTACT WITH A NEGSIVE AND IN TO THE SUN, LIGHT SENSITIVE.

THIS IS TYPICALLY GOLD TONE. THE DIFFERENCE IS THAT THE PAPER SUPPORT IS COATED WITH A THAT BROADER LAYER WE TALKED ABOUT, THAT WHITE PIGMENT BARIUM SULFATE COATED ON THE PAPER TO PRODUCE BRIGHTER WHITES AND A SMOOTH SURFACE.

SO WE REFER TO THIS AS A THREE-LAYERED STRUCTURE. LIKE THE ALBUMIN PRINT THESE PHOTOGRAPHS WITH FADE AND DISCOLOR.

THE HIGHLIGHTS, HOWEVER, DO NOT TYPICALLY YELLOW LIKE THE ALBUMIN PRINT BECAUSE THIS IS GELATIN AS BIERND AS OPPOSED TO ALBUMIN OR EGG WHITE, AS A BINDER.

IT'S A MATTER OF REVIEWING SOME OF THE SLIDES AND CERTAINLY LOOKING AT THE RESOURCES GOING BACK TO YOUR COLLECTION AND THINKING ABOUT WHAT IS THAT PRINT?

HOW IS IT MADE?

WHAT IS THE LAYERED STRUCTURE?

WHAT IS THE IMAGE TONALITY?

ONE MORE EXAMPLE, IN THIS CASE AN IMAGE THAT IS MUCH MORE BLACK AND WHITE IN COLOR, ALMOST GREENISH BLACK REALLY AT THE TOP OF THE PHOTOGRAPH.

I WILL TRY THAT POINTER AGAIN.

I'M ON A DIFFERENT COMPUTER.

I DON'T REALLY KNOW WHY, BUT I CAN'T SEEM TO GET THE POINTER TO WORK.

EVERY TIME I TRY IT I LOSE MY TALK SO I'M NOT GOING TO DO THAT ANYMORE.

ANYWAY, HOPEFULLY YOU GUYS CAN, AS I EXPLAIN WHERE I AM, THERE, NOW IT'S MOVING BETTER.

SO THIS BLACK AND WHITE IMAGE YOU CAN SEE IT'S MUCH BLACKER IN THE DARK AREAS.

SORT OF A GREENISH BROWN, GREENISH BLACK COLOR HERE AT THE TOP.

THIS IS A SILVER GELATIN DEVELOPING OUT PHOTOGRAPH.

THIS IS AN EXAMPLE OF A PHOTOGRAPH FROM THE TURN OF THE CENTURY WHERE THE PHOTOGRAPH IS ACTUALLY PRODUCED IN A DARK ROOM AND NOT PRODUCED BY LIGHT.

WE ALSO MENTIONED NOT TO CONFUSE YOU ALL TOO MUCH, BUT IN THE 1920s, 1930s, 1940s, SOME OF

THESE BLACK AND WHITE
PHOTOGRAPHS WERE ACTUALLY TONED
WITH SULFUR TO PRODUCE A BROWN
IMAGE THAT BEGINS TO RESEMBLE
SOME OF THE ALBUMIN PRINTS AND
SILVER GELATIN PRINTING PAPERS
BUT BLACK AND WHITE PAPER
INTENTIONALLY TONED WITH SULFUR
TO PRODUCE A SEPIA TONE OR
SULFUR PHOTOGRAPHIC PRINT.

S THAT WERE VERY POPULAR IN THE
UNITED STATES, PARTICULARLY, AND
THEY ARE TYPICALLY IN VERY, VERY
GOOD CONDITION, WHICH IS
CERTAINLY TRUE OF THIS WONDERFUL
PORTRAIT THAT YOU SEE HERE.

SO JUST TO SUMMARIZE IN TERMS OF
PHOTOGRAPHIC PRINTING PROCESSES,
THIS CERTAINLY IS IMPORTANT WITH
NEGATIVES AS WELL, THERE ARE
MANY THINGS TO THINK ABOUT WHEN
YOU'RE TRYING TO DISTINGUISH ONE
PROCESS FROM ANOTHER.

THEY'RE LISTED HERE IN THIS
SLIDE.

IS THE PHOTOGRAPHIC HIGHLY
REFLECTIVE?

IS IT VERY MAT?

IF IT'S VERY MAT, THE IMAGE MAY
BE EMBEDDED IN THE PAPER SUPPORT
SUCH AS SALTED PAPER PRINT OR
HIGHLY REFLECTIVE, THAT MIGHT
TELL YOU THERE'S ACTUALLY A
BRIGHTER LAYER THERE.

COULD BE SILVER GELATIN PRINTING
OUT OR SILVER GELATIN DEVELOPING
PAPER.

WHAT IS THE TONALITY IS?

IT BROWN IN COLOR?

IS IT BLACK AND WHITE?

RECOGNIZE THAT WE ONLY TALKED
ABOUT SOME OF THE PROCESSES.

THERE'S SO MANY OTHER
PHOTOGRAPHIC PROCESSES, SO IMAGE
TONALITIES CAN VARY, BUT
GENERALLY YOU WOULD LOOK FOR
SOMETHING BROWNER OR PURPLISH

BROWN VERSUS SOMETHING THAT'S
BLACK AND WHITE.
WHAT DOES THIS LOOK LOOK UNDER
30X MAGNIFICATION?
YOU CAN BUY A HAND HELD
MAGNIFIER AT SCORES THAT WILL
MAGNIFY WITH INTERNAL LIGHT UP
TO 30X.
THIS CAN HELP YOU IN
DISTINGUISHING SOME OF THE
CHARACTERISTICS THAT WE SPOKE
ABOUT.
HOW IS IT MOUNTED?
SOMETIMES THE MOUNTING STYLE CAN
HELP YOU DIFFERENTIATE AT LEAST
DECADES OR CENTURIES.
SO THAT'S SOMETHING TO CERTAINLY
THINK ABOUT AS WELL.
AND THEN CERTAINLY DETERIORATION
PROBLEMS SUCH AS IMAGE FADING,
BINDER LAYER CRACKING WITH
ALBUMIN PRINTS PARTICULARLY.
OR ABRASION, COMMON WITH
PHOTOGRAPHS SUCH AS MAT COLODAN
MATERIALS.
THIS MAY HELP A BIT.
I PROMISE IT JUST TAKES PROMISE
AND TIME AND THOUGHT.
AND LOOKING AT YOUR COLLECTION
AND GOING BACK TO SOME OF THE
RESOURCES THAT WE PROVIDED.
LAST WEEK WE SHARED WITH YOU A
NUMBER OF DIFFERENT BOOKS, ALL
OF WHICH ARE TRULY EXCELLENT AND
WE MENTIONED THIS BOOK BUT I
DIDN'T HAVE A SCREEN SHOT.
SO I WANTED TO SHARE THE SCREEN
SHOT HERE, THE CURRENT
IDENTIFICATION OF 19th CENTURY
PHOTOGRAPHIC PRINTS BY JAMES
REILLY OF THE IMAGE PERMANENCE
INSTITUTE MUCH THIS IS ANOTHER
GREAT RESOURCE THAT SOME OF YOU
POINTED OUT IN THE CHAT BOX.
AND I WANT TO BE SURE YOU AT
LEAST HAVE A SENSE OF WHAT THIS
BOOK LOOKS LIKE.

WHAT'S REALLY NICE ABOUT THIS PUBLICATION IS IT'S ACCOMPANIED BY A CHART WHICH YOU CAN SEE ONLY ON A VERY SMALL FORMAT HERE.

AGAIN, IDENTIFICATION CHART THAT USING THIS LAYERED STRUCTURE APPROACH, IS IT ONE, TWO, THREE LAYERS?

IS IT PHOTOGRAPHIC OR PHOTO MECHANICAL?

AND THEN YOU FOLLOW THROUGH WITH WHAT THE PHOTOGRAPH LOOKS LIKE, HOW IT'S DETERIORATED?

THIS WILL HELP YOU IN DIFFERENTIATING SOME OF THE PROCESSES.

IF YOU REMEMBER, THE VERY FIRST WEBINAR WE SPOKE BRIEFLY ABOUT PHOTO MECHANICAL VERSUS PHOTOGRAPHIC.

THAT'S AN IMPORTANT DISTINCTION THAT YOU REALLY MUST MAKE IN LOOKING AT YOUR COLLECTION EARLY ON.

IS IT CONTINUOUS TONE OR NOT? THERE'S MANY DIFFERENT RESOURCE.

GALAN WEAVER IN PRIVATE PRACTICE, HIS WORK WITH SILVER GELATIN PAPERS LAST TIME, DEVELOPED ANOTHER WAY OF IDENTIFYING PROCESSES WITH 19th CENTURY MATERIALS LOOKING FIRST AT IMAGE COLOR.

SO THESE APPROACHES VARY.

IN THE END, WHAT I TELL MY STUDENTS REALLY ALL OVER THE WORLD, YOU NEED TO DEVELOP YOUR OWN APPROACH.

YOU NEED TO LOOK AT PHOTOGRAPHS, DETERMINE THE BEST WAY FOR YOU TO IDENTIFY THESE PROCESSES.

YOU HAVE MUCH TO WORK WITH AND I THINK THAT'S ALL VERY GOOD.

ONE MORE I KEEP THROWING IN, IN TO THESE PRESENTATIONS, ONLINE

RESOURCES THAT I I THINK ARE
HELPFUL, ONE WE HAVEN'T
MENTIONED YET.

I ADDED IT HERE, THE LIBRARY OF
CONGRESS, SOME EXCELLENT
RESOURCES THAT THEY HAVE ON
PHOTOGRAPHIC MATERIALS,
IDENTIFICATION DETERIORATION AND
PRESERVATION.

SO CERTAINLY TAKE A LOOK AT THAT
AS YOU CAN.

SO WITH THAT, I THINK, I GUESS
BEFORE I MOVE ON TO NEGATIVES,
CHRIS, I'LL ASK IF THERE'S ANY
QUESTIONS THAT HAVE COME UP IN
THE CHAT BOX OR IN THE PARKING
LOT THAT I COULD ANSWER NOW.
IF NOT, I'LL START WITH NEGATIVE
MATERIALS.

>> WELL, GRETA IS KEEPING UP
WITH THE QUESTIONS SO FAR.

>> LET ME JUST KEEP GOING.

>> SURE.

>> GRETA, THANK YOU.

YOU'RE DOING A GREAT JOB,
ENORMOUS HELP, I KNOW, TO ALL
THESE PARTICIPANTS.

SO LET ME KEEP MOVING FORWARD
BECAUSE WE HAVE A BIT TO COVER
HERE WITH PHOTOGRAPHIC
NEGATIVES.

THE PHOTOGRAPHIC PRINT
PROCESSES, I'M GOING TO REVIEW
THESE IN A CHRONOLOGY.

I'LL TALK A LITTLE ABOUT
NEGATIVES MORE GENERALLY, TALK
ABOUT RESOURCES WHICH MAY BE
WHAT'S MOST USEFUL TO YOU.

THEN A LITTLE BIT ABOUT SOME OF
THE DIFFERENT PROCESSES YOU'RE
LIKELY TO ENCOUNTER IN YOUR
COLLECTIONS.

WHAT YOU SEE HERE IS AN
EXCELLENT EXAMPLE OF A
CELLULOSE ACETATE FILM.

IT'S STILL USED TODAY IN VARIOUS
ACETATE FILMS.

ONE OF THE GREATEST PRESERVATION CHALLENGES, OVER TIME THE CELLULOSE ACETATE FILM WILL SHRINK BUT THE EMULSION DOES NOT.

YOU GET CHARACTERISTIC CHANNELLING WHICH YOU CAN SEE CLEARLY IN THE NEGATIVE HERE. THE OTHER THING YOU NOTICE IN THIS NEGATIVE PERHAPS, MAY DEPEND OUR MONITOR BUT IT'S INTERESTING HERE, SOME OF YOU MAY SEE THAT THE NEGATIVE IN SOME AREAS HAS SORT OF A BLUEISH TONALITY TO IT.

THIS IS ANOTHER DETERIORATION PROBLEM ASSOCIATED WITH AN ANTIHALLATION DYE IN THE BACK LAYER OF THE NEGATIVE.

OVER TIME, THIS DYE IS REGENERATED AND BECOMES SORT OF BRIGHT BLUE AS YOU CAN SEE.

THIS IS A REAL ISSUE IN EMERGENCIES BECAUSE FOLLOWING EXPOSURE TO HIGH PH AND IMMERSION IN WATER, THESE DYES CAN BE REGENERATED AND ACETATE FILMS BECOME BRIGHT BLUE IN COLOR.

THAT'S WHAT YOU SEE HERE.

THE MOST IMPORTANT POINT IS THIS IS A CELLULOSE ACETATE FILM.

WE'LL TALK BOTH ABOUT CELLULOSE ACETATE AND NITRATE, VEERIOUS FILM-BASED MATERIALS, VARIOUS AS WELL AS GLASS PLATE NEGATIVES BRIEFLY.

THIS IS AN EXAMPLE OF A GLASS PLATE NEGATIVE YOU'RE SEEING OBVIOUSLY AS A POSITIVE. BUT GENERALLY IN VERY, VERY GOOD CONDITION FROM THE MISSOURI STATE ARCHIVES.

THERE IS SOME DAMAGE IN THE BACKGROUND ABOVE THE SITTER'S FOREHEAD.

BUT GENERALLY I WOULD SAY THAT

THIS NEGATIVE IS IN GOOD
CONDITION.

NOW, IN TERMS OF RESOURCES,
THERE ARE MANY AND WE HAVE GOT
THEM LISTED, MANY ARE LISTED ON
THE WEB SITE SO YOU SHOULD LOOK
AT THAT.

THIS IS ONE I WANT TO DRAW
PARTICULAR ATTENTION TO.

IT'S A WONDERFUL BOOKLET WRITTEN
BY MARIA FERNANDA VALVERDE, SHE
TEACHES IN MEXICO CITY AND THIS
BOOKLET WHICH SHE HAS WRITTEN,
COMPREHENSIVE AND GOES IN TO
ENORMOUS DETAIL, CLEARLY WRITTEN
WITH WONDERFUL ILLUSTRATIONS, IS
AVAILABLE ONLINE.

YOU CAN DOWNLOAD IT THROUGH THE
IMAGE PERMANENCE INSTITUTE WEB
SITE.

SO THIS IS FREE OF CHARGE AND A
RESOURCE THAT I RECOMMEND VERY
HIGHLY.

OF COURSE, SOME OF THE BOOKS WE
ALREADY TALKED ABOUT HAVE
EXCELLENT SECTIONS ON NEGATIVES
AS WELL AS PRINTS.

YOU WANT TO LOOK AT THOSE AS
WELL.

NOW, WHEN YOU'RE DEALING WITH
PHOTOGRAPHIC NEGATIVES, ONE OF
THE GREATEST CHALLENGES REALLY
EARLY ON WAS TO TRY AND
DETERMINE WHAT IS THE MOST IDEAL
MATERIAL FOR A PHOTOGRAPHIC
NEGATIVE?

AND IDEALLY YOU WANT SOMETHING
TRANSPARENT BECAUSE YOU'RE GOING
TO BE USING IT FOR PRINTING.

AND PHOTO SENSITIVE SO THAT IT'S
REACTIVE AND YOUR EXPOSURE TIMES
ARE MINIMIZED.

YOU WANT IT SENSITIVE TO ALL
COLORS, NOT JUST SENSITIVE TO
BLUE OR RED LIGHT.

EASY TO USE, LIGHT WEIGHT AND
FLEXIBLE AND CHEMICALLY AND

DIMENSIONALLY STABLE.
UNFORTUNATELY, MANY OF THE
PROCESSES WE TALK ABOUT ARE NOT
NECESSARILY CHEMICALLY OR
DIMENSIONALLY TABLE.
THEY MAY NOT BE LIGHT WEIGHT AND
FLEXIBLE.
THEY WEREN'T ALWAYS EASY TO USE
OR SENSITIVE TO ALL WAVE
LENGTHS.
BUT THAT'S SORTS OF THE IDEAL
MATERIAL WHEN YOU TALK ABOUT
PHOTOGRAPHIC NEGATIVES.
WHAT YOU'RE SEEING HERE IS A
PAPER NEGATIVE, A WAXED PAPER
NEGATIVE.
THESE WERE SOME OF THE EARLIER
NEGATIVES.
THE EARLIER NEGATIVES THAT WERE
PRODUCED.
YOU CAN IMAGINE IF YOU TAKE
PAPER AND WAX IT THAT YOUR
TRANSPARENCY WILL BE MINIMAL AND
SO THESE ARE DIFFICULT TO USE.
BUT IT WAS REALLY THE ONLY
OPTION EARLY ON.
AND THEY WERE USED IN
COMBINATION WITH SALTED PAPER
PROCESS TO PRODUCE A SALTED
PAPER PRINT WHICH YOU SEE HERE.
SO HERE IS A SALTED PAPER PRINT
MADE FROM THAT WAXED PAPER
NEGATIVE.
AS WE TALK ABOUT NEGATIVES,
WE'LL OFTEN TALK ABOUT THE PRINT
PROCESSES THAT WERE COMMONLY
USED WITH THAT PARTICULAR
NEGATIVE PROCESS.
AGAIN, YOU KNOW, THIS IS AN
EXAMPLE OF A COLODIAN PLATE.
THIS IS ON GLASS, GLASS REPLACED
PAPER BY THE 1850s.
I'LL TALK ABOUT THAT CHRONOLOGY
IN A MINUTE.
WHEN WE LOOK AT CROSS-SECTIONS
WE SPEND TIME TALKING ABOUT THAT
OFTEN YOU HAVE A PAPER SUPPORT

AND THOSE SILVER PARTICLES MAY BE EMBEDDED OR AS YOU SEE HERE IN THAT PAPER SUPPORT WHICH WOULD BE TRUE OF A SALTED PAPER WITH A GELATIN, MORE COMMON, CONTEMPORARY NEGATIVE PROCESS. YOU CAN SEE THE CROSS-SECTION BECOMES MUCH MORE COMPLEX. YOU HAVE AS YOU SEE HERE, A POLYESTER WITH GELATIN, ANTIFILM LAYER TO PREVENT CURLING AND GELATIN ON THE OTHER SIDE WITH SILVER PARTICLES.

THE LAYERED STRUCTURE WHEN YOU GET TO NEGATIVES CAN BE QUITE DIFFICULT.

HERE'S AN EXAMPLE OF A CONTEMPORARY COLORED DYE NEGATIVE IN WHICH YOU HAVE AGAIN A POLYESTER FILM SUPPORT, ANTICURL LAYER, COMMON WITH FILM-BASED MATERIALS AFTER ABOUT 1903.

AND THEN THE FINAL IMAGE IN THIS CASE WOULD BE COMPRISED OF ORGANIC DYES, CYAN, MAGENTA AND YELLOW.

CROSS-SECTIONS ARE IMPORTANT TO KEEP IN THE BACK OF YOUR MIND. I'LL GO BACK AGAIN AS WE TALK ABOUT PROCESSES.

BUT IN TERMS OF THE CHRONOLOGY, THE EARLIEST NEGATIVE MATERIALS WERE THESE PAPER NEGATIVES, THESE WAXED PAPER NEGATIVES AS YOU SEE HERE.

INTRODUCED IN 1841 AT THE SAME TIME AS THE SALTED PAPER PRINT USED FOR PRINTING SALTED PAPER AND USED REALLY UNTIL ABOUT 1865.

YOU PROBABLY DO NOT HAVE MANY, IF ANY, EARLY PAPER NEGATIVES IN YOUR COLLECTIONS.

THESE ARE RELATIVELY RARE. YOU MAY FIND THEM IN MAJOR MUSEUMS AND FINE ART COLLECTIONS

CERTAINLY.

BUT NOT AS FREQUENTLY IN
LIBRARIES, ARCHIVES, HISTORICAL
SOCIETIES, HISTORIC MUSEUM, ET
CETERA.

THE PAPER NEGATIVE IS SOON
REPLACED REALLY WITH GLASS AS A
SUPPORT.

OF COURSE GLASS IS MUCH MORE
TRANSPARENT THAN WAX PAPER.

THE FIRST GLASS PLATE NEGATIVE
PROCESS WAS THE COLLODIAN ON
GLASS, INTRODUCED IN 1851.

THINK BACK TO FIRST WEBINAR, WE
TALKED ABOUT DIRECT POSITIVE
PROCESSES, TALKED ABOUT THE
AMBER TYPE OF PROCESSES ON
GLASS.

THE COLLODIAN AND AMBER ARE
SIMILAR.

THE AMBER TYPE WAS A NEGATIVE
IMAGE BUT THIN IMAGE AND MADE TO
APPEAR AS A POSITIVE BY COATING
A BLACK LACQUER ON THE BACK.

WITH COLLODIAN WEB PLATE
NEGATIVE YOU SEE HERE ON THE
LEFT OF YOUR SLIDE, IN THIS CASE
YOU DON'T BACK IT WITH ANYTHING
BECAUSE YOU WANT TO USE IT AS A
TRANSPARENT SUPPORT.

THE COLLODIAN WEB PLATE NEGATIVE
IS REPLACED BY THE END OF THE
19th CENTURY WITH THE GELATIN
DRY PLATE NEGATIVE WHICH YOU CAN
SEE WAS POPULAR UNTIL 1925.

THE COLLODIAN WEB PLATE MADE BY
HAND.

YOU POUR THE COLLODIAN ON TO THE
GLASS SUPPORTMENT DRY PLATE IS
PRODUCED BY MACHINE SO IT WAS
EASIER FOR THE PHOTOGRAPHER TO
USE.

OF COURSE, THEY WILL TELL YOU
ANYTHING, WITHOUT GOING IN TO
MORE DETAIL YOU COULD TELL ME
IMMEDIATELY THE BIGGEST
DIFFERENCE BETWEEN THESE

PROCESSES IS THE PRESENCE OF COLLODIAN WITH THE COLLODIAN WEB PLATE NEGATIVE, REMEMBER THE BINDER WHICH IS THE NITRATE, COMPARED TO THE PRESENCE OF GELATIN AS THE BINDER IN THE DRY PLATE NEGATIVE.

GELATIN IS A COMMERCIALY PREPARED PROTEIN.

IT'S CALLED DRY BECAUSE THE NEGATIVE IS PURCHASED.

YOU DIDN'T HAVE TO WORRY ABOUT KEEPING THAT GELATIN WET.

WHEREAS THE COLLODIAN WEB PLATE NEGATIVE HAD TO BE PRODUCED BEFORE THE COLLODIAN ACTUALLY DRIED OUT.

THEREFORE, WE REFER TO IT AS A WET PLATE COLLODIAN NEGATIVE.

GLASS WAS A WONDERFUL SUPPORT.

IT WAS TRANSPARENT.

CERTAINLY SUPERSEDED THE WAXED PAPER.

BUT IT WAS FRAGILE, IT WAS HEAVY, IT WAS DIFFICULT TO TRANSPORT.

BY 1889, WE SEE THE INTRODUCTION OF FLEXIBLE FILM, FIRST CELLULOSE NITRATE, POPULAR, USED UNTIL 1950, PARTICULARLY FOR PROFESSIONAL MOTION PICTURE FILM.

THE INTRODUCTION OF CELLULOSE ACETATE IN 1925 AND POLYESTER FILM IN 1955.

THIS IS HOPEFULLY A HELPFUL CHRONOLOGY.

NOW THINK BACK TO YOUR NEGATIVES AND BEGIN TO DIFFERENTIATE WHEN ONE PROCESS MAY HAVE BEEN INTRODUCED VERSUS ANOTHER.

I DON'T WANT TO SPEND TIME REALLY ON THE PAPER NEGATIVE PROCESS BECAUSE I DON'T THINK MANY OF YOU HAVE THESE.

BUT IT'S IN HERE TO GIVE YOU A LITTLE BIT MORE INFORMATION.

SO THIS IS AN IMAGE EMBEDDED IN
A PAPER SUPPORT.

THE PAPER SUPPORT IS WAX TO MAKE
IT MORE TRANSPARENT AND
TRANSLUCENT BECAUSE FROM THIS
WAX PAPER NEGATIVE YOU WOULD
TYPICALLY MAKE A SALTED PAPER
PRINT.

LIKE ANY SILVER IMAGE, WE HAVE
SEEN SO MANY EXAMPLES IN THE
LAST TWO DAYS OR LAST TWO
WEBINARS, THESE SILVER IMAGES
CAN MADE AND DISCOLOR.

CERTAINLY THAT'S TRUE WITH
NEGATIVES AS IT IS TRUE WITH
POSITIVE PRINTS.

SO A LOT OF THE DETERIORATION
MECHANISMS WE TALKED ABOUT IN
DETAIL WITH PHOTOGRAPHIC PRINT
PROCESSES RELATES AND CORRELATES
TO THE NEGATIVE MATERIALS AS
WELL.

NOW, AGAIN, IN 1851 WE BEGIN TO
SEE INTRODUCTION OF GLASS AS A
SUPPORT IN PHOTOGRAPHY FOR AMBER
TYPE AS YOU SEE ON THE LEFT AND
THE WET PLATE COLLODIAN ON THE
RIGHT.

IN THIS, HERE I WOULD URGE YOU,
WE TALKED A BIT ABOUT AND I KNOW
HEATHER AND GRETA BOTH IN THE
CHAT ROOM HAVE MENTIONED THAT
YOU CAN FIND FILMS ONLINE,
YOUTUBE AND ALSO THE EASTMAN
HOUSE SITE SHOWING HOW TO MAKE
SOME OF THESE DIFFERENT
PROCESSES.

I URGE YOU TO TAKE A LOOK AT
THOSE BECAUSE IT WILL MAKE THIS
VERY CLEAR IN TERMS OF THE MANY
STEPS THAT ARE REQUIRED TO
PRODUCE SOMETHING LIKE A WET
PLATE COLLODIAN NEGATIVE WHICH
YOU SEE BEING MADE HERE.

YOU TAKE A GOOD CLEAN PIECE OF
GLASS, THE GLASS IS TYPICALLY
CUT BY HAND AND SO WHEN YOU'RE

TRYING TO DISTINGUISH A COLLODIAN NEGATIVE FROM A GELATIN TRIPLATE NEGATIVE, DRY PLATE, SOMETIMES YOU CAN LOOK AT THE GLASS.

IS IT HAND CUT OR CUT BY MACHINE?

USUALLY A THICKER PIECE OF GLASS WITH COLLODIAN WET PLATE NEGATIVE.

THE NEGATIVE THEN IS CLEANED, THE GLASS IS CLEANED AND THE PHOTOGRAPHER WOULD POUR ON A SOLUTION OF COLLODIAN OR CELLULOSE NITRATE, VERY VISCOUS SOLUTION ALMOST LIKE VISCOUSITY OF HONEY TO WHICH SOMETHING LIKE

POTASSIUM IODIDE SALTS ADDED.

THE PLATE IS IMMERSSED IN A SILVER NITRATE BATH TO PRODUCE LIGHT SENSITIVE IODID IN THAT COLLODIAN BINDER LAYER WHICH WOULD THEN BE PLACED IN A CAMERA, EXPOSED TO LIGHT.

ALL OF THIS WORK HAS TO BE DONE BEFORE THE COLLODIAN DRIES OUT. THAT'S WHY IT'S KNOWN AS A WET PLATE PROCESS.

ONCE THE COLLODIAN DRIED OUT, YOU COULD NO LONGER PROCESS THE IMAGE.

SO IT BECAME VERY, YOU KNOW, VERY DIFFICULT AND CUMBERSOME AND PHOTOGRAPHERS WHO WERE PHOTOGRAPHING LANDSCAPES OUTDOORS HAD TO BRING WITH THEM THE WHOLE DARK ROOM, GLASS PLATES, COLLODIAN, SILVER NITRATE, THE VARNISHES TO VARNISH THE PLATE AFTER PRINTING, ALL THIS WAS DONE ON SITE, WHICH IS WHY THE DRY PLATE WHEN IT WAS INTRODUCED WITH THE END OF THE CENTURY IT WAS SO POPULAR BECAUSE IT DIDN'T REQUIRE THAT KIND OF

MANIPULATION.

THE COLLODIAN AGAIN, POPULARITY
1851 TO 1885.

HERE YOU SEE A COLLODIAN WET
PLATE NEGATIVE PROBABLY TAKEN
WITH A CAMERA THAT HAD TWO
LENSES.

WHAT'S INTERESTING, WHAT I LOVE
ABOUT THIS EXAMPLE, IS THAT YOU
CAN SEE THAT THE YOUNG GIRL TO
THE RIGHT OF THE SLIDE, THAT
NEGATIVE APPEARS TO BE IN VERY
GOOD CONDITION.

THERE'S SOME ABRASIONS AND
SCRATCHES, BUT FOR THE MOST PART
IT'S AN EXCELLENT, IT'S IN
EXCELLENT SHAPE.

THE NEGATIVE IMAGE AT THE LEFT
OF THE SLIDE IS MUCH MORE FADED,
YELLOWED AND DETERIORATED.

YOU CAN SEE THE SILVER IMAGE
DETERIORATION AT THE OUTER
EDGES.

A LOT OF ABRASION AND A LOT OF
DEGRADATION.

I SUSPECT WHAT YOU SEE HERE IS
THAT THE IMAGE TO THE RIGHT HAS
BEEN VARNISHED.

THE PHOTOGRAPHER SORT OF Poured
THE VARNISH ON TO PROTECT THE
COLLODIAN IMAGE, PARTS OF THE
PROCESS AT THE YEN OF PRODUCING
THESE NEGATIVES, AT THE END OF
PRODUCING THESE NEGATIVES BUT
INTENTIONALLY DISTRIBUTE VARNISH
THE OTHER IMAGE, DECIDED THAT
THEY WOULD ONLY BE PRINTING THE
ONE IMAGE.

SO YOU CAN SEE THE PROTECTIVE
NATURE OF VARNISH, HOW THAT HAS
PROTECTED THE SILVER IMAGE FROM
DETERIORATING AND FADING ON THE
RIGHT WHERE IT'S MUCH MORE
FADED, MUCH MORE ABRAIDED ON THE
LEFT.

HERE IN FACT IS A POSITIVE, THE

SAME IMAGE SEEN IN POSITIVE
LIGHT.

YOU CAN STILL SEE THE IMAGE
CERTAINLY BUT THE IMAGE ON THE
LEFT IS MUCH MORE DETERIORATED
THAN THE IMAGE ON THE RIGHT.
THE WET PLATE COLLODIAN NEGATIVE
USED PRIMARILY WITH ALBUMIN
PRINTS.

SO THERE IS ALMOST A MARRIAGE
BETWEEN THE NEGATIVE PROCESS AND
PRINT PROCESS.

THE WAX PAPER NEGATIVE WITH THE
SALTED PAPER PRINT, THE
COLLODIAN ON GLASS OR COLLODIAN
WET PLATE NEGATIVE PRINTED WITH
THE ALBUMIN PAPER WHICH YOU SEE
HERE.

WHAT I'M SHOWING YOU HERE IS IN
THE DETAIL, IS RETOUCHING WHICH
YOU BEGIN TO SEE WITH
PHOTOGRAPHY WITH THE
INTRODUCTION OF THESE GLASS
PLATE NEGATIVES.

THE FACE IS HEAVILY RETOUCED
WITH GRAPHITE PENCIL DONE AS
PORTRAITS BECOME LARGER, YOU
BEGIN TO SEE THE CARDS WE TALKED
ABOUT LAST TIME, THESE IMAGES
THAT ARE 4 1/4 BY 6 1/2 INCHES,
FACES ARE LARGER, FACES MORE
PROMINENT AND SITTERS WANT THEIR
FACES TO APPEAR IN A CERTAIN
WAY.

PHOTOGRAPHERS BEGIN TO RETOUCH
THE NEGATIVE USING GRAPHITE
PENCILS.

SOMETIMES IN COLLECTIONS, TRUE
WITH ALL GLASS PLATE NEGATIVES,
YOU LOOK CAREFULLY AT THE FACES
YOU'LL SEE THEY ALMOST LOOK LIKE
THEY HAVE BEEN VARNISHED AND
RETOUCHED WITH A PENCIL.

THAT'S EXACTLY WHAT'S BEEN DONE
SO THAT TO IMPROVE THE
APPEARANCE OF THE FINAL PRINT.
LET ME TALK ABOUT THE DRY PLATE

AND THEN I'LL TAKE A BREAK AND ANSWER ANY QUESTIONS THAT MAY HAVE COME UP BEFORE WE MOVE IN TO FILM-BASED MATERIALS. THE GELATIN DRY PLATE IS SOMETHING THAT YOU HAVE MENTIONED, MANY MENTIONED YOU DO HAVE IN YOUR COLLECTIONS. THIS IMAGE COMES, REALLY A FANTASTIC IMAGE FROM NORTH CAROLINA MUSEUM OF NATURAL SCIENCES. THE NEGATIVE IN GOOD CONDITION, HELD WITH GLOVES, THE RIGHT THING TO DO. THOUGH SOME PEOPLE FEEL STRONGLY THAT THEY CAN HANDLE THESE MATERIALS MORE SAFELY IF THEY USE, IF THEY DON'T WEAR GLOVES. THAT CAN BE DONE AS LONG AS A DON'T TOUCH THE SURFACE OF EMULSION. BUT GLOVES, COTTON, ARE PREFERRED. YOU CAN SEE BLACK AND WHITE IMAGE SIMILAR TO THE GELATIN PAPER BECAUSE LIKE THE DEVELOPED OUT PAPER, THIS IS PRODUCED THROUGH CHEMICAL DEVELOPMENT. IT'S A SILVER, WHEN THESE IMAGES ARE IN GOOD CONDITION, THEY APPEAR VERY BLACK AND WHITE AS THEY DETERIORATE THEY MAY BECOME MORE BROWNISH, YELLOWED, OFTEN AT THE OUTER EDGES BECAUSE DETERIORATION IS ACCELERATED BY EXPOSURE TO HIGH RELATIVE, HIGH TEMPERATURE CONDITIONS MUCH THESE DRY PLATES WERE TYPICALLY SOLD IN BOXES AS YOU SEE HERE. AGAIN, PHOTOGRAPHERS NO LONGER TO COAT THE PLATES OR MAKE THEM LIGHT SENSITIVE. THEY WERE ALREADY LIGHT SENSITIVE. MANY COLLECTIONS ARE STILL STORING THEIR NEGATIVES IN THESE

BOXES, WHICH IS NOT IDEAL BECAUSE THE BOXES ARE GIVING OFF OX OXIDANTS WHICH CAUSE FADING. THE BOXES ARE VALUABLE, THEY'RE IMPORTANT AND INTERESTING FOR THE INFORMATION THEY CONTAIN. SO IT'S NOT THAT THEY SHOULD BE DISPOSED OF, BUT IDEALLY IT'S BEST NOT TO HOUSE YOUR NEGATIVES IN THOSE HISTORIC BOXES.

THE DRY PLATE NEGATIVE ITSELF WILL HAVE A SMOOTH SURFACE. IT WILL BE MACHINE CUT BECAUSE THIS IS DONE BY HAND.

BLACK AND WHITES AND COLOR WHEN THEY'RE IN GOOD CONDITION, BUT AS IS TRUE WITH EVERY SILVER PROCESS THAT WE HAVE TALKED ABOUT, THESE MATERIALS CAN FADE AND DISCOLOR AND THEY DO UPON EXPOSURE TO POOR ENVIRONMENTAL CONDITIONS.

ANOTHER CHALLENGE WITH DRY PLATE NEGATIVES IS THE DETERIORATION OF THE GELATIN.

MORE IMPORTANTLY, IT IS THE FACT IT'S VERY HARD TO ADHERE GELATIN TO THE GLASS PLATE SUPPORT.

SOMETIMES YOU WILL SEE FLAKING AT THE OUTER EDGES.

HERE IS AN EXAMPLE OF A SILVER GELATIN DRY PLATE IN GOOD CONDITION, BLACK AND WHITE. SOME STAINING AND YELLOWING THAT WE SEE THAT COULD BE CAUSED BY EXPOSURE TO A POOR QUALITY ENCLOSURE.

BUT GENERALLY, THIS IS IN GOOD CONDITION.

WHEREAS THIS ONE IS BEGINNING TO ILLUSTRATE SOME OF THE GELATIN RELATED PROBLEMS THAT I MENTIONED.

THE GELATIN AT THE OUTER EDGES, REALLY BECOMING, OUTER EDGES, DETACHING, BEGINNING TO LIFT AND FLAKE.

IN THIS CASE, THIS PARTICULAR OBJECT WOULD REALLY HAVE TO BE SEPARATED, STORED FLAT AND BROUGHT TO THE ATTENTION OF A CONSERVATOR TO SEE IF IT'S POSSIBLE TO CONSOLIDATE THESE LARGE FLAKES OF GELATIN.

HERE'S ANOTHER EXAMPLE, THIS ONE FROM THE SMITHSONIAN INSTITUTION ARCHIVES PROVIDED BY GRETA.

IN THIS CASE, THE NEGATIVE'S IN RELATIVELY GOOD CONDITION BUT BEGINNING TO FLAKE LOCALLY.

YOU CAN SEE AT THE LOWER RIGHT CORNER, FOR EXAMPLE.

THAT'S ANOTHER EXAMPLE OF DETERIORATION THAT'S REALLY CAUSED BY THE GELATIN.

THE IMAGE PERHAPS IS FADED, A LITTLE BROWNER, REDDISH IN COLOR.

THE MAIN CHALLENGE IS GELATIN BINDER DEGRADATION WHICH YOU SEE IN TWO SPOTS ON THIS IMAGE.

FINALLY, IN THIS SORTS OF CATEGORY, I WANTED TO BE SURE TO MENTION BECAUSE THIS CAME UP A NUMBER OF TIMES, THE ISSUE OF LANTERN SLIDES.

SOME OF YOU WILL HAVE VERY LARGE COLLECTIONS OF LANTERN SLIDES.

THESE CAN BE A VARIETY OF DIFFERENT PROCESSES, BUT MANY OF THEM ARE ACTUALLY GELATIN DRY PLATE POSITIVES.

SO IT'S ACTUALLY GELATIN ON GLASS THAT MAY OR MAY NOT BE HAND COLORED.

IN THIS CASE, THIS IMAGE PROVIDED BY THE MISSOURI STATE ARCHIVES APPEARS CERTAINLY TO BE HAND COLORED.

SOMETIMES THE COLORING IS PRINTED, BUT I SUSPECT THIS IS HAND COLORED.

SO THIS IS A GELATIN EMULSION ON GLASS, POSITIVE IMAGE HAND

COLORED AND PROTECTED ON THE EMULSION SIDE WITH ANOTHER PIECE OF GLASS AND DECORATIVE MAT AND TAPED AROUND THE OUTER EDGES. YOUR LANTERN SLIDES IN THE COLLECTION ARE GOING TO MORE CLOSELY RESEMBLE THESE DRY PLATES.

AND THE DETERIORATION PROBLEMS THAT YOU SEE WITH YOUR LANTERN SLIDES WILL BE VERY SIMILAR TO THE KIND OF PROBLEMS THAT WE SEE WITH DRY PLATES FADING OF THE SILVER IMAGE, SOMETIMES MIRRORING, WHICH WE SAW WITH BLACK AND WHITE PHOTOGRAPHS HAPPENS QUITE EXTENSIVELY WITH DRY PLATE NEGATIVES AND ALSO LANTERN SLIDES WHEN THE SEALS ARE BROKEN, WHEN THE PAPER TAPE HAS BEGUN TO LIFT, YOU BEGIN TO LET AIR AND MOISTURE.

YOU ALSO WILL SEE SOMETHING I DIDN'T HAVE ON MY LIST THAT I SHOULD MENTION, THEN I'LL TAKE A BREAK, IS GLASS DECOMPOSITION. YOU RECALL, YOU GO BACK WHEN WE'RE FINISHED AND MAYBE SKIM THROUGH THE FIRST WEBINAR WHICH WAS MORE OF AN INTRODUCTION, BUT I SHOWED YOU SOME EXAMPLES OF GLASS DECOMPOSITION WITH EARLY TYPES.

GLASS TRANSPARENT GLASS CAN DETERIORATE OVER TIME.

YOU HAVE TAXES OF LANTERN SLIDES OR STACKS OF DRY PLATE NEGATIVES, TIMES YOU WILL SEE EVIDENCE OF DETERIORATION OF THE GLASS EITHER THE COVER GLASS, IN THE LANTERN SLIDES OR GLASS SUPPORT ITSELF.

SO THAT'S SOMETHING TO BE AWARE OF.

BEFORE I MOVE IN TO CELLULOSE NITRATE FILM, LET ME JUST TAKE A BRIEF BREAK.

I DON'T WANT THE TAKE TOO LONG OF A BREAK BECAUSE MAYBE WE CAN ACTUALLY GET THROUGH ALL THIS AND THEN DO MORE QUESTIONS AT THE END.

BUT KRISTIN, ARE THERE QUESTIONS THAT ARE COMING UP?

>> YES.

>> THAT I COULD ADDRESS?

>> GRETA IS DOING A GREAT JOB BUT SOME ARE SIMILAR.

HOW DO YOU ATTEMPT TO DO ANY CLEANING ON A NEGATIVE?

EITHER IF THEY'RE GLASS, WOULD YOU DO ANY DUSTING OF THEM?

IF THEY HAD A FINGERPRINT ON THEM COULD, YOU DO ANY CLEANING?

>> YES, THAT'S A GOOD QUESTION.

FIRST OF ALL, JUST LIKE PHOTOGRAPHIC PRINT PROCESSES, YOU NEED THE KNOW WHAT THAT MATERIAL IS.

LET'S SAY YOU HAVE GLASS PLATE NEGATIVES THAT ARE DIRTY, THAT HAVE SOME SORT OF DIRT AND GRIME AND YOU WANT THE DUPLICATE THEM. WOULD YOU LIKE TO TRY AND DO SOME MINIMAL CLEANING IF POSSIBLE.

YOU WANT TO DETERMINE, ARE THEY DRY PLATE, ARE THEY WET PLATE? ARE THEY COLLODIAN OR ARE THEY GELATIN?

THAT'S THE FIRST STEP TO FIRMLY UNDERSTAND WHAT YOU HAVE.

I WOULD SAY THAT YOU CAN SAFELY CLEAN THE BACKSIDE, THE NON-EMULSION SIDE OF A GLASS PLATE NEGATIVE USING A SOFT COTTON BALL, FOR EXAMPLE, REMOVING SOME OF THE DIRT IN THAT WAY.

YOU PROBABLY WANT TO AVOID CLEANING THE EMULSION SIDE, THE IMAGE SIDE OF THESE NEGATIVES BECAUSE YOU CAN CAUSE DAMAGE. YOU KNOW, THE GELATIN, IF IT'S A

GELATIN PLATE IT CAN BEGIN TO LIFT AND CRACK.

YOU CAN USE A SOFT BRUSH AND REMOVE ANY PARTICULATES IN THAT WAY, THAT SHOULD BE SAFE WITH A GELATIN DRY PLATE NEGATIVE. MAY BE PROBLEMATIC, HOWEVER, IF THERE'S FLAKING OF ANY KIND. I WOULD AVOID ANY PLATE THAT HAS THAT KIND OF A DAMAGE.

THE PLATE THAT APPEARS TO BE RELATIVELY IN TACT, WHETHER IT'S COLLODIAN OR GELATIN, YOU COULD USE A SOFT BRUSH.

ANYTHING BEYOND THAT ON THE SURFACE, I PERSONALLY WOULD AVOID BECAUSE OF THE FRAGILITY OF THESE EMMULLSES, THEY'RE VERY THIN, EMULSIONS, THEY'RE VERY THIN AND NOT NECESSARILY WELL ADHERED TO THE GLASS PLATE SUPPORT.

>> OKAY.

LYNNE HAD A QUESTION ABOUT, IS THERE ANYTHING YOU CAN DO TO STOP MAKE FLAKING.

>> THE FLAKING IS CAUSED BY EXPOSURE TO FLUCTUATING ENVIRONMENTAL CONDITIONS, SOMETIMES JUST AT THE OUTER EDGES.

THE BEST THING YOU CAN DO REALLY IS TO TRY AND HOUSE THESE COLLECTIONS IN A TABLE ENVIRONMENT.

AT LEAST MITIGATE AGAINST FURTHER FLAKING.

PLATES THAT ARE SEVERELY FLAKING SHOULD BE HOUSED FLAT AND SEPARATED FROM THE OTHER MATERIALS BECAUSE REALLY THE FLAKING IS EXASPERATED BY HANDLING.

YOU WANT TO TRY TO SET THEM ASIDE.

BUT YOU'RE TYPICALLY DOING WITH THESE NEGATIVES IS PREPARING

THEM FOR DUPLICATION,
DIGITIZATION, OR WHATEVER YOU
MIGHT BE USING IN YOUR
INSTITUTION.

THERE IS A DESIRE TO CLEAN THEM
TO THE EXTENT POSSIBLE BECAUSE
YOU WANT THE BEST POSSIBLE COPY.
IN SOME CASES IF YOU'RE DOING A
LARGE DIGITAL PROJECT, IT MAY BE
WORTH HIRING A PHOTOGRAPH
CONSERVATOR WHO COULD COME ON
SITE, EXAMINE THE NEGATIVES,
PERHAPS PROVIDE TRAINING ON
OTHER CLEANING TECHNIQUES THAT
COULD BE USED, IF THE COLLECTION
IS VERY DIRTY.

THAT WILL IMPACT ON THE QUALITY
OF THE DUPLICATE NEGATIVE OR
DIGITAL PROCESS THAT YOU'RE
USING.

>> OKAY.

NICOLE IN BOULDER MENTIONED WHAT
IF IT'S A CRACKED PIECE OF
GLASS?

GRETA RECOMMENDED DOING SOME
TYPE OF A SCAN, A CAREFUL
STORAGE.

IS THAT WHAT YOU WOULD SAY?

>> CERTAINLY THAT IS ABSOLUTELY
RIGHT.

AND IT'S REALLY REMARKABLE WHAT
YOU CAN DO NOW WITH DIGITAL
IMAGING, WHICH WAS NEVER AN
OPTION WHEN I ENTERED THE FIELD
MANY, MANY YEARS AGO.

BUT YOU CAN SCAN PIECES AND YOU
CAN CREATE A SURROGATE NEGATIVE
THAT LOOKS VERY, VERY GOOD AND
FROM THAT YOU CAN MAKE A PRINT.
YOU ALWAYS WANT TO PRESERVE THE
ORIGINAL.

THE ORIGINAL CAN BE PRESERVED IN
PERHAPS A MAT THAT WOULD HOLD
THE PIECES SEPARATE.

YOU DON'T WANT THE PIECES TO RUB
AGAINST EACH OTHER OR WRAPPED IN
ACID FREE TISSUE, SOMETHING THAT

WILL HOLD THE FRAGMENTS IN A SAFE WAY.

THERE ARE TECHNIQUES USED BY CONSERVATORS FROM TIME TO TIME TO ACTUALLY MEND BROKEN GLASS PLATE NEGATIVES.

THAT'S TYPICALLY DONE FOR THOSE NEGATIVES THAT HAVE VERY HIGH VALUE BECAUSE IT'S JUST NOT NECESSARY, YOU CAN DO AN AWFUL LOT THROUGH SCANNING.

BUT JUST WHEN YOU GET INVOLVED IN COPYING OF THESE NEGATIVE MATERIALS, DO NOT MAKE THE MISTAKE OF FOCUSING ENTIRELY ON THE COPY AND NOT PRESERVING THE ORIGINAL.

HOWEVER DAMAGED IT MIGHT BE, YOU NEED TO THINK ABOUT WHAT CAN I DO TO MINIMIZE HANDLING? AND TO PROTECT THE ORIGINAL OBJECT FROM DETERIORATION?

>> OKAY.

AND ANGELA ASKED A GREAT QUESTION, SOMETHING I DEALT WITH MY PERSONAL PHOTOGRAPHS AT HOME, PROBABLY OTHERS HAVE TOO, THAT THE NEGATIVES OFTEN HAVE SOME TACKINESS AND ASK STICK TOGETHER.

WHAT DO YOU DO IF YOU COME ACROSS A STACK OF NEGATIVES TOGETHER.

>> THAT'S OFTEN TRUE WITH A STACK OF GELATIN DRY PLATE NEGATIVES FOR EXAMPLE BECAUSE AGAIN, YOU'VE GOT THIS GELATIN BINDER THAT'S COMMERCIALY PREPARED PROTEIN THAT SWELLS UPON EXPOSURE TO HUMIDITY. SO THEY CAN ALL START TO STICK TOGETHER IN THE SAME WAY A PHOTOGRAPHIC ALBUM CAN STICK TOGETHER.

IT'S THE GELATIN AGAIN, IT'S PARTICULARLY A CHALLENGE AFTER DISASTER WHEN THINGS HAVE GOTTEN

WET.

AND IN THAT CASE, I WOULD SAY IN SOME SITUATIONS UNFORTUNATELY THERE'S NOTHING THAT CAN BE DONE.

BUT BEFORE GIVING UP ALL HOPE, THEY REALLY NEED TO BE BROUGHT TO A CONSERVATOR WHO CAN BEGIN TO INVESTIGATE HOW FIRMLY ADHERED THE GELATIN IS TO THE GLASS AND WHETHER THERE ARE TECHNIQUES THAT MAY BE USED LOCALLY OR OVERALL TO TRY AND BEGIN TO SEPARATE OUT SOME OF THESE GLASS PLATE NEGATIVES. BUT A STACK OF GLASS PLATE NEGATIVES STUCK ONE TO ANOTHER IS NOT UNCOMMON, UNFORTUNATELY AND CAN BE VERY DIFFICULT TO DEAL.

WITH THIS IS WHY AFTER A DISASTER IT'S SO IMPORTANT WHEN THINGS ARE WET TO, SEPARATE THEM WHEN YOU CAN BEFORE THEY DRY AND THEY ALL STICK TOGETHER.

>> TALK A LITTLE BIT --

>> ANGELA MENTIONED THESE ARE ACETATE NEGATIVES.

>> OKAY, SO ANGELA, YOU'RE AHEAD OF ME.

WELL, THAT'S GOOD AND BAD, I SUPPOSE.

SOMETIMES YOU CAN'T REALLY GET ACETATE NEGATIVES WET.

WHAT'S HAPPENING, THE SAME ISSUE.

IT'S THE GELATIN BINDER WHICH IS EXPANDING, BECOMING STICKY AND TACKY AND ADHERING TO OTHER SUPPORTS.

I THINK ANGELA PROBABLY KNOWS, THEY COULD ALSO BE CELLULOSE NITRATE NEGATIVES.

YOU SEE THIS MORE WITH CELLULOSE NITRATE FILM T IMAGE HERE IS CELLULOSE NITRATE AND GELATIN BECOMES VERY DETERIORATED AND

BECOMES QUITE TACKY.

WITH ACETATE THE GELATIN IS HEARTIER, BUT IF IT GETS WET IT CAN BECOME TACKY.

LIKE ANYTHING STUCK TOGETHER NEEDS TO GO TO A CONSERVATOR, BECAUSE IT'S SO TRICKY TO SEPARATE OUT THESE VARIOUS LAYERS.

LET ME, BECAUSE OF THE TIME, LET ME MOVE THROUGH ON NITRATE AND ACETATE IF THAT'S OKAY, SEE HOW FAR WE GET BECAUSE WE'RE DOING WELL, I THINK.

HOPEFULLY YOU CAN TELL US IF WE'RE GOING TO SEE GRETA IS DOING A GREAT JOB WITH QUESTIONS AND CERTAINLY WE CAN SLOW DOWN THE PACE A BIT, IF THAT WOULD BE HELPFUL.

WE HAVE A LOT TO COVER.

CELLULOSE NITRATE FILM, HERE YOU SEE CROSS-SECTION, CELLULOSE NITRATE FILM INTRODUCED OR A SKEM SCHEMATIC IN 1889, POPULAR, AVAILABLE UNTIL 1950.

IT BEGINS TO BE REPLACED WITH CELLULOSE ACETATE FILM BY THE LATE 1920s, 1930s.

THE CROSS-SECTION IS A LITTLE MORE COMPLEX, NO LONGER ONE, TWO OR THREE LAYERED STRUCTURE.

BASICALLY IT'S A FLEXIBLE FILM, CELLULOSE NITRATE, WHICH IS COATED ON ONE SIDE WITH A GELATIN EMULSION, AND ON THE OTHER SIDE AFTER ABOUT 1903, WITH THIS ANTICURL LAYER OF GELATIN THAT PREVENTS THE FILM FROM JUST ROLLING UP LIKE A PENCIL.

IF YOU HAVE VERY EARLY CELLULOSE NITRATE FILMS IN YOUR COLLECTION FROM 1890, FOR EXAMPLE, 1895, THEY MAY IN FACT BE VERY TIGHTLY CURLED BECAUSE THEY DIDN'T HAVE THAT ANTICURL LAYER ON THE BACK.

THE LAYER REFERS TO THIN LAYER APPLIED TO THE FILM TO TRY AND ALLOW THAT GELATIN TO STICK TO IT A LITTLE BIT BETTER.

WE CALL THAT THE STUBBING LAYER, TYPICALLY IN THIS CASE MIGHT BE SOMETHING LIKE CELLULOSE NITRATE COMBINED WITH GELATIN COATED ON THE FILM SUPPORT.

YOU CAN SEE IN THE SAMPLE, IN THIS SLIDE, SOME OF THE DETERIORATION PROBLEMS THIS FILM IS CURLED, MAY NOT HAVE AN ANTICURL LAYER, VERY BROWN IN COLOR, THIS IS DETERIORATION OF THE CELLULOSE NITRATE BASE. CELLULOSE NITRATE DETERIORATES, BECOMES MORE BROWN, MORE BRITTLE.

GELATIN WITH BECOME TACKY. SILVER IMAGE BEGINS TO FADE AND DISCOLOR OR MIRROR.

SO ALL OF THESE DETERIORATION MECHANISMS ARE CERTAINLY GOING ON IN THE SAMPLE THAT YOU SEE HERE.

THE CELLULOSE NITRATE IS PART OF THE CHRONOLOGY WE TALKED ABOUT IN GREAT DETAIL FROM GLASS TO FILM.

IT WAS THE FIRST FLEXIBLE FILM SUPPORT.

IT WAS LIGHT AND DURABLE AND THERE ARE MANY DIFFERENT FORMATS FOR FILM BASED MATERIALS WHICH YOU MAY HAVE IN YOUR COLLECTION. WHAT'S WONDERFUL REALLY, WHAT WAS SO GREAT ABOUT THIS MATERIAL IS THAT IT COULD BE ROLLED.

SUDDENLY YOU DIDN'T HAVE TO TAKE ONE IMAGE AT A TIME AND RELOAD THE CAM ARE WITH ANOTHER SHEET GLASS.

WE TAKE ALL OF THIS WITH OUR IPHONES FOR GRANTED THCH IT WAS MAIJ MAJOR CHANGE IN THE WAY PHOTOGRAPHS WERE MADE.

SUDDENLY PHOTOGRAPHY WAS
AVAILABLE TO THE MARKET AND THE
MASSES TO, MAM AMATEUR
PHOTOGRAPHERS WHO COULD TAKE
MULTIPLE IMAGES AT ONE TIME.
FILM IS BECOMING FASTER, CAPTURE
SPEED, ENLARGE.

PHOTOGRAPHERS CHANGING
SIGNIFICANTLY WITH THE
INTRODUCTION OF SILVER GELATIN
DEVELOPING ON PAPERS AND
CELLULOSE NITRATE FILM AT THE
TURN OF THE CENTURY.

THIS IS A WONDERFUL IMAGE,
ACTUALLY YOU CAN SEE FROM THE
SMITHSONIAN.

UNFORTUNATELY, CELLULOSE NITRATE
FILM DOES DETERIORATE.

IN MANY WAYS I ALREADY MENTIONED
BUT TO REVIEW AGAIN, THE BASE,
THE CELLULOSE NITRATE BASE
BECOMES BRITTLE, DISCOLORED AS
YOU SEE HERE THE GELATIN LAYER CAN
BECOME VERY TACKY, SOFT AND
BEGIN TO STICK TO ITS ENCLOSURE.
SO IF YOU HAVE CELLULOSE NITRATE
FILMS IN A COLLECTION OF PAPER
BASED ENVELOPES FOR EXAMPLE, AS
THEY DETERIORATE THEY MAY BECOME
ADHERED TO THE INTERIOR OF THAT
ENVELOPE.

AND THE SILVER IMAGE
SIMULTANEOUSLY BEGINS TO FADE
AND DISCOLOR.

THE SILVER, CELLULOSE NITRATE
BASE AS IT DETERIORATES IS
GIVING OFF MANY DIFFERENT
CHEMICALS THAT ARE ACTUALLY
ATTACKING THE SILVER IMAGE
CAUSING IT TO FADE AND DISCOLOR.
WE CALL THIS DETERIORATION,
ALMOST AUTO CATALYTIC, ONCE IT
STARTS IT JUST BEGINS TO
CONTINUE.

IT CAN BECOME VERY DIFFICULT,
VERY QUICKLY.

WE OFTEN REFERRED TO THE STAGES

OF DETERIORATION WHEN WE TALK ABOUT NITRATE AND ACETATE FILM. IN STAGE ONE WITH CELLULOSE NITRATE FILM AS YOU CAN SEE HERE NO, DETERIORATION.

ACTUALLY IN VERY GOOD CONDITION. THERE ARE MANY, MANY CELLULOSE NITRATE NEGATIVES OUT IN COLLECTIONS.

THEY'RE IN VERY GOOD CONDITION. FOR THAT REASON, IT CAN BE VERY DIFFICULT TO IDENTIFY ONE FROM ANOTHER BECAUSE WE OFTEN USE DETERIORATION CHARACTERISTICS TO HELP IN DISTINGUISHING ONE FILM FROM ANOTHER.

STAGE TWO IS HERE AS YOU SEE IN THESE EXAMPLES, THE NEGATIVES BEGIN TO YELLOW AND BEGIN TO MIRROR.

THAT MIRRORING, THAT IRIDESCENCE YOU SEE FORMING IN THE DARK AREAS IS THE SAME DETERIORATION PROBLEM THAT WE SAW WITH SILVER GELATIN DEVELOPING OUT PRINTS. YOU'RE BEGINNING TO SEE THE DEGRADATION OF A SILVER IMAGE IN STAGE TWO DETERIORATION.

STAGE THREE, NOW WE'RE BEGINNING TO SEE THAT THE GELATIN IS BECOMING STICKY SO THAT GELATIN LAYER BEGINNING TO STICK TO ITS ENCLOSURE, THE SILVER CONTINUES TO DETERIORATE AND YOU START TO SMELL SOMETHING THAT SMELLS LIKE NITRIC ACID, STRONG ODOR.

BUT IT'S A STRONG ODOR THAT YOU CAN DETECT AND THAT IS CERTAINLY AN INDICATION THAT THE NEGATIVES ARE DETERIORATING.

IN STAGE FOUR, THE FILM IS BECOMING MUCH MORE DEGRADED. THE IMAGE CONTINUES TO FADE. THE GELATIN BINDER LAYER IS TACKY AND THE BASE IS BECOMING DETERIORATED, IT'S YELLOWING, BECOMING BRITTLE AS YOU CAN SEE

IN THIS EXAMPLE HERE.

FINALLY, STAGE FIVE, THE FILM
BASE ITSELF BEGINS TO DEGENERATE
IN TO A BROWN POWDER.

OBVIOUSLY YOUR GOAL IS TO TRY
AND MITIGATE AGAINST THIS DAMAGE
AND TO TRY AND PREVENT THIS KIND
OF DETERIORATION.

UNFORTUNATELY, A LOTS OF IT HAS
OCCURRED, PARTICULARLY WITH
MOTION PICTURE FILM AS YOU SEE
EXAMPLES HERE.

THIS IS VERY, VERY COMMON
BECAUSE THERE'S A LOT OF
CELLULOSE NITRATE IN THAT VERY
SMALL CANISTER THAT IS CLOSED
UP, THAT ISN'T BREATHING AND SO
THE DETERIORATION PRODUCTS BEING
GIVEN OFF BY THE CELLULOSE
NITRATE FILM ARE BUILDING UP AND
ATTACKING.

INHERENTLY UNSTABLE T FILM IS
DETERIORATED, GELATIN
DETERIORATING AND THE IMAGE IS
DETIER RAYING AS WELL.

YOUR GOAL, DETERIORATING AS
WELL.

YOUR GOAL IS TO PREVENT THIS
ADVANCED DETERIORATION THROUGH
PROPER STORAGE.

WE'LL TALK MORE ABOUT STORAGE
AND ENVIRONMENT AT THE NEXT
WEBINAR.

BUT IT'S IMPORTANT TO MENTION
HERE THAT THE BEST WAY THE
PRESERVE THESE MATERIALS IS
THROUGH GOLD STORAGE.

LOW TEMPERATURE STORAGE IN A
CONTROLLED ENVIRONMENT,
CONTROLLED HUMIDITY ENVIRONMENT
WILL LOW DOWN THE RATE OF
DETERIORATION BECAUSE THESE
MATERIALS ARE INHERENTLY

UNSTABLE.

WHAT'S CHALLENGING IS
DEGRADATION PRODUCTS GIVEN OFF

BY THE FILM WILL ALSO ATTACK
PAPER COLLECTION MATERIALS AS
WELL.

THEY NEED TO BE SEPARATED IN
SOME WAY OR ANOTHER'S.

RECOGNIZE THAT NOT ALL CELLULOSE
NITRATE FILM IS DETERIORATED.
YOU DON'T NEED TO IMMEDIATELY
DISPOSE OF ALL CELLULOSE NITRATE
FILM BUT SHOULD IDENTIFY IT AND
SEGREGATE IT, WORK TOWARD COLD
STORAGE.

YOU SHOULD THINK ABOUT
DUPLICATING THOSE MATERIALS THAT
ARE READILY USED.

IT IS CONSIDERED A HAZARDOUS
MATERIAL AND YOU WANT TO GO BACK
AND REVIEW THE SLIDE
PARTICULARLY AND THINK ABOUT
SOME OF THE ISSUES THAT I'VE
LISTED HERE BECAUSE YOU NEED TO
SORT OF REVIEW YOUR FIRE CODES,
YOUR LOCAL FIRE CODES, YOUR
INSTITUTIONAL INSURANCE POLICIES
AND CONSULT WITH LOCAL OFFICIALS
IF YOU HAVE CELLULOSE NITRATE
FILM ON THE PREMISE.

SO IT MAY BE VERY IMPORTANT IN
THIS CASE TO HIRE A CONSULTANT
WHO CAN WORK WITH YOU, LOOK AT
NEGATIVE MATERIALS, BEGIN TO
DETERMINE WHAT YOU HAVE AND WHAT
YOU NEED TO DO IT AND PROTECT YOUR
COLLECTION.

AND THE NATIONAL FIRE PROTECTION
NUMBER 40 IS GOOD TO PURCHASE
AND READ CAREFULLY AND TALKS
ABOUT THE DANGERS OF NITRATE
FILM AND PROTECTION OF THESE
MATERIALS.

CERTAINLY COOL STORAGE IS A
PRIORITY BECAUSE THE
LOW-TEMPERATURE STORAGE
ENVIRONMENTS WILL SLOW DOWN THE
DETERIORATION OF THIS MATERIAL.
YOU ALSO WANT TO BE CAREFUL IN
HANDLING THE CELLULOSE FILM AND

USE GLOVES BECAUSE IT'S GIVING OFF NITRIC ACIDS AND BE CAREFUL IF YOU'RE WEARING CONTACTS, BE SURE YOU'RE IN A WELL-VENTILATED SPACE BECAUSE THERE ARE CERTAIN HEALTH HAZARDS IN HANDLING THE MATERIALS IN ADDITION TO THE DETERIORATION PROBLEM WE'RE SPEAKING ABOUT.

IN COMPARISON, YOU HAVE NITRATE FILM INTRODUCED IN 1889 BUT BY 1925 YOU SEE SAFETY-BASED FILM OR CELLULOSE FILM AND IT'S FLAMMABLE AND THAT'S IMPORTANT TO REMEMBER WHEN IT'S BADLY DETERIORATED IT CAN IGNITE AT LOW TEMPERATURES.

IT WAS OBVIOUSLY A GREAT CONCERN AND THE CAUSE OF MANY HORRIBLE FIRES IN THE CLEVELAND CLINIC AND MOTION PICTURE FILM HOUSES THROUGHOUT THE COUNTRY AND AROUND THE WORLD.

IT WAS QUICKLY REPLACED WITH CELLULOSE ACETATE FILM BASED WITH THE PRODUCTION OF AMATEUR FILM IN 1945 AND UNFORTUNATELY WHERE AS THIS MATERIAL'S NOT AS MUCH AS A HEALTH HAZARD IT TOO HAS ITS OWN SET OF DETERIORATION PROBLEMS WHICH IS SHRINKAGE OF THE FILM BASE AS YOU SEE HERE. THERE'S BEEN A LOT OF RESEARCH ON ACETATE AND NITRATE FILM AND A LOT DONE BY THE IMAGE PERMANANS INSTITUTE AND IT GIVES YOU BASIC INFORMATION ON THE MATERIALS BOTH PRINT AND NEGATIVE TERMS AND ALSO RECOMMENDATIONS FOR STORAGE IN TERMS OF TEMPERATURE AND ENVIRONMENTAL CONDITIONS.

AND I WILL TALK MORE ABOUT THAT NEXT WEEK.

SO THERE'S ACETATE FILM STILL BEING MANUFACTURED KNOWN BY MANY AS SAFETY FILM.

IT WAS INTRODUCED TO REPLACE NITRATE BECAUSE OF THE HAZARDS ASSOCIATED WITH NITRATE FILM. THE TRANSITION IS GRADUAL HOWEVER.

IF YOU HAVE COLLECTIONS THAT DATE TO THE 1930s, FILM-BASED MATERIAL THEY MAY BE NITRATE. THEY MAY NOT BE ACETATE BUT BY THE 1940s YOU BEGIN TO SEE PRIMARILY ACETATE FILM IN COLLECTIONS.

IT'S A GENETIC TERM FOR SIMILAR PLASTICS AND MAY BE ACETATE BUTTERATE AND IT'S IMPORTANT TO KNOW THE CATEGORY AND LIKE NITRATE FILM IT'S AVAILABLE IN A VARIETY OF FORMATS

THE DIFFERENCE IS THE BASE. CELLULOSE NITRATE NOW WE'RE DEALING WITH CELLULOSE ACETATE. THE FILM AS IT DETERIORATES IT SHRINKS AND YOU CAN IMAGINE AT LOOKING AT THE CROSS SECTION IF THE FILM IS SHRINKING IT CAUSES THE GELATIN AND ANTI-CURL LAYER WHICH IS ALSO GELATIN ON THE BACK WHICH MAKES IT LOOK CHanneled.

THERE'S ALSO ADDITIVES THAT CAN BEGIN TO CRYSTALIZE OUT OF THE FILM OVER TIME.

YOU'LL READ ABOUT PLASTICIZER FORMATS AND EVEN THE FORMATS CAN HELP YOU TIME TO TIME IN DATING THE MATERIALS.

IN TERMS OF DETERIORATION THE CRYSTAL AND BUBBLES REFER TO THE DETERIORATION OF THE CHEMICALS AND THE SMELL OF VINEGAR IS THE SMELL OF EASTER OR EASTER EGGS AND IF YOU SMELL AND THAT IT'S A FILM-BASED COLLECTION YOU HAVE CELLULOSE ACETATE AND THAT'S WHAT YOUR SMELLING AND YOU WANT TO GET TO THE POINT WHERE THE FILM ISN'T DETERIORATED.

IF IT'S NOT DETERIORATED YOU
WON'T HAVE THAT VINEGAR SMELL.
THE SMELL OF ACIDIC ACID.
UNLIKE THE CELLULOSE NITRATE
IMAGE THEY NOT FADE AND
DISCOLOR.

IT'S KNOWN AS A WEAK ACID AND
NOT STRONG ENOUGH TO ATTACK
SILVER IMAGES.

SO THE IMAGES APPEAR TO BE IN
RELATIVELY GOOD CONDITION BUT
THE BASE HAS DETERIORATED.

HERE'S ANOTHER EXAMPLE OF AN
IMAGE THAT'S BEGINNING TO
CHANNEL AND DISTORT.

LIKE THE CELLULOSE NITRATE FILM
WE TALK ABOUT STAGES OF
DETERIORATION WITH CELLULOSE
ACETATE FILM AS WELL AND YOU CAN
SEE THEM HERE IN THIS PARTICULAR
IMAGE.

AND I THINK WHAT YOU'RE SEEING
HERE IS THE BEGINNING OF
DETERIORATION OF THE ACETATE
FILM WHERE IT APPEARS FLAT AND
IN RELATIVELY GOOD CONDITION BUT
YOU SEE IN THE NEXT NEGATIVE
IT'S A LITTLE MORE CURLED AND
BEGINNING TO LIFT AT THE EDGES.
THAT'S THE SECOND STAGE OF
DETERIORATION AND AS IT
PROGRESSES THE ACETATE IS
SHRINKING MORE AND MORE AND THE
CHANNELING IS MUCH MORE
PROGRESSIVE AND YOU SEE MORE
CRYSTALS FORM NEP SILVER IMAGE
DOESN'T DETERIORATE AND IN THIS
IMAGE YOU SEE THE BLUE DYE, THE
ANTI-HALATION DYE AND THIS IS
ACCELERATED BY EXPOSURE TO POOR
ENVIRONMENTAL CONDITIONS AND IT
CAN HAPPEN QUICKLY.

THERE'S IMPORTANT RESEARCH DONE
BY THE IMAGE PERMANANCE
INSTITUTE AND NATIONAL CONGRESS
AND NATIONAL ARCHIVE AND OTHER
RESEARCH INSTITUTESING AT

ACETATE FILM DEGRADATION AND BEGINNING TO TRACK THE LEVEL THERE'S A CERTAIN POINT WHERE IT BEGINS TO INCREASE AT A CATASTROPHIC SPEED AND IT'S IMPORTANT IN TRYING TO DETERMINE WHERE YOUR COLLECTION IS ON THE CHART.

IDEALLY YOUR CONDITION IS STILL IN GOOD CONDITION AND CAN HOUSE IT IN A GOOD ENVIRONMENT AND PREVENT THE CATASTROPHIC CHANNELING.

SOME CAN BE DONE BY USING THE AD STRIPS OR ACETATE DETECTOR STRIPS.

THEY ALLOW YOU TO BEGIN TO DETERMINE WHEN A FILM HAS BEGAN TO DETERIORATE BEFORE YOU SEE SOMETHING VISUALLY APPARENT.

IT'S A COLOR -- HE'S A PH-DETECTING PAPER.

AND I DON'T HAVE TIME TO GO INTO THAT AND HOW TO USE THEM BUT SUFFICE TO UNDERSTAND THEY ARE AVAILABLE TO YOU AND IF YOU HAVE A MOTION PICTURE COLLECTION OR A COLLECTION OF ACETATE FILM AND PAPER ENCLOSURES STILL IN RELATIVELY GOOD CONDITION YOU WANT TO DETERMINE THEIR EXTENT OF DETERIORATION AND WHERE THEY ARE ON THE GRAPH, YOU CAN BUY THESE DETECTOR STRIPS AND FOLLOW THE DIRECTIONS AND MONITOR THE COLOR CHANGE WHICH HAPPENS PRETTY QUICKLY.

YOU SEE IT HERE COMPARED TO THE PENCIL AND BEGIN TO PREDICT THE LIFE EXPECTANCY OF YOUR COLLECTION AND THE ENVIRONMENT IN WHICH IT MUST BE HOUSED TO PRESERVE IT WHICH IS USUALLY A LOW-HUMIDITY ENVIRONMENT.

AND THE STRIPS ARE INCREDIBLY IMPORTANT FOR FORCING THE MECHANISM ASSOCIATED WITH THE

FILM.

FINALLY THERE'S A WHOLE OTHER SECTION BUT I'M GOING TAKE A BREAK FOR A FEW QUESTIONS IN A MINUTE.

I ALSO WANTED TO MENTION THAT IN 1951 WE SEE THE INTRODUCTION OF

POLYESTER FILM INTRODUCED IN 1951 AND STILL USED WITH MANY PHOTOGRAPHIC PROCESSES. IT HAS HIGH-CHEMICAL AND PHYSICAL STABILITY AND USED IN A VARIETY OF FORMATS.

YOU HAVE AN EVOLUTION FROM CELLULOSE ACETATE TO NITRATE TO FILM AND LET ME SAY SOMETHING ABOUT IDENTIFICATION AND THEN I'LL TAKE QUESTIONS.

THAT'S TO SAY THAT AGAIN THERE'S EXCELLENT INFORMATION AVAILABLE FROM ALL OF YOU ON THE WEB.

THIS IS SOMETHING FROM THE NORTHEAST CONSERVATION CENTER WHICH IS A LEAFLET ON THE IDENTIFICATION OF FILM-BASED MATERIAL AND IT BEGINS TO DISTINGUISH THE DIFFERENT MATERIALS AND HOW TO IDENTIFY THEM USING DIFFERENT DATES AND DIFFERENT DETERIORATION MECHANISMS.

SIMILARLY, THE NATIONAL PARK SERVICE HAS DEVELOPED ANOTHER SCHEME.

THIS IS HARD TO SEE, YOU HAVE TO GO ONLINE.

I DID IT AS A SCREEN SHOT BUT I CAN'T EVEN READ IT ON MY SCREEN AT THIS POINT, IT'S ANOTHER FLOW CHART.

ANOTHER SYSTEM FOR IDENTIFYING ONE FILM FROM ANOTHER.

THIS IS INTERESTING BECAUSE IT ASKS A SERIES OF QUESTIONS.

IS IT THIS OR IS IT THAT.

IT CAN HELP YOU DETERMINE IF YOU

HAVE ACETATE OR NITRATE OR
POLYESTER FILM.

DATING WILL HELP YOU AS WITH
ALBUMIN AND FROM 1935 TO 1960
MAY MORE LIKELY BE CELLULOSE
ACETATE.

SO DATING IS SOMETHING TO
CONSIDER.

AND ON SOME NEGATIVES THEY'RE
PRINTED ON THE OUTER EDGE.
THEY MAY SAY NITRATE OR SAFETY
FILM AND THAT CAN HELP YOU
DIFFERENTIATING ONE PROCESS FROM
ANOTHER.

THERE'S ALSO ALL KINDS OF
REFERENCES FOR MOTION PICTURE
FILM NOTCH CODES AND SOMETIMES
THE NOTCH CODES YOU SEE WILL
REFER TO DATES AND FILM TYPE.
SO EDGE PRINTING CAN BE USEFUL.
DETERIORATION IS YOUR BEST BET.
IF I HAD YOU ALL IN A ROOM AND
SEE YOUR FACES I'D ASK YOU TO
RAISE YOUR HANDS -- WE SHOULD
HAVE DONE A POLL.

LET'S DO THAT.

I'LL DO QUESTIONS NEXT WEEK.

WHAT IS THIS, NITRATE OR
ACETATE.

THIS IS A LITTLE COMPLICATED AND
I TOLD YOU IN THE LABEL SO IT'S
CLEAR.

THIS IS ACETATE FILM.

IT'S CHANNELING AND
DETERIORATING AND WHAT'S
CONFUSING IS MOST ACETATE FILM
DOES NOT BECOME BROWN OR
DISCOLORED AS YOU SEE HERE.
THIS HAS DETERIORATING IN WAYS
THAT IS SOMEWHAT UNCOMMON.
THE CHANNELING OR THE WRINKLING
IS CHARACTERISTIC OF ACETATE
FILM.

SO DETERIORATION WILL BE
SOMETHING TO CONSIDER.

FINALLY, WE'LL TALK ABOUT
STORAGE BUT I WANT TO BE SURE

YOU'RE AWARE OF THE FACT THE THE NATIONAL PARK SERVICE HAS CREATED ALL KINDS OF VIDEOS AND ONLINE INFORMATION ABOUT THE STORAGE OF THESE MATERIALS OR THE PROPERLY OTHER TO OF THE MATERIALS USING COLD STORAGE. HOW TO DIFFERENTIATE THEM AND HOW TO HOUSE THEM PROPERLY. THIS IS A WONDERFUL ONLINE RESOURCE WITH FILMS AND INFORMATION THAT I THINK WILL BE VERY HELPFUL TO YOU AS YOU REVIEW SOME OF THE INFORMATION THAT WE COVERED IN THE WEBINAR TODAY.

FUNDAMENTALLY YOU ALWAYS NEED TO ALWAYS THINK ABOUT THESE MATERIALS AND THE IMPORTANCE OF PRESERVING THEM BECAUSE THE NEGATIVE IS OFTEN CONSIDERED WHAT'S MOST IMPORTANT IN THE COLLECTIONS.

THERE'S ONLY ONE NEGATIVE FROM WHICH MANY PRINTS MAY BE MADE. ALONG WITH THE NEGATIVES ARE THE FACTUAL ITEMS THAT WERE MADE BY ANSEL ADAMS AND REVEAL ABOUT THE ARTIST'S INTENT AND THE PHOTOGRAPHER'S WORKING PROPERTIES.

SO THE PRESERVATIONS IS CRITICAL.

IT'S SOMETHING THAT CAN BE DIFFICULT BECAUSE OF THE NUMBERS AND THEIR INHERIT INSTABILITY. WE BEGIN TO SEE DEGRADATION PROBLEMS WITH NEGATIVES THAT YOU DON'T SEE WITH PHOTOGRAPHIC PRINT MATERIAL.

WITH THAT, LET ME TURN IT OVER TO KRISTEN AND SEE WHAT QUESTIONS HAVE EMERGED.

ONE THING I'M FINDING -- ONCE AGAIN I WISH I CAN SHOW YOU MY SCREEN AND I CAN SEE GRETA'S ANSWERING AS QUICK AS SHE CAN

AND NOW LET ME SEE WHAT I CAN HELP WITH.

>> WELL, I JUST WANTED YOU -- WHEN YOU TALK ABOUT NITRATE SO ARE GETTING YOU WALKED INTO TO THE MOTION PICTURE PART OF THE FIELD AND SO I JUST WANTED TO ALSO REMIND PEOPLE THAT WE WILL BE PLANNING A CARE OF AUDIO-VISUAL MATERIALS COURSE FOR NEXT FALL SO STAY TUNED FOR THAT.

WE CAN GET MORE IN DEPTH. SEEMS LIKE A FEW MORE QUESTIONS ARE COMING IN ABOUT CELLULOSE NITRATE ITEMS -- NEGATIVES, VERSUS A WHOLE ROLE OF FILM AND THE GREATER VOLUME OF A CANISTER VERSUS A NEGATIVE AND WHAT YOU NOON BY "SEPARATE THOSE OUT."

>> I JUST PUT ON -- ANOTHER FINAL THOUGHT, BUT ALMOST A FINAL THOUGHT WHICH WAS ANOTHER -- I HOPE YOU ALL ARE ABLE TO GO BACK TO THE SLIDES.

I KNOW YOU CAN AND GATHER THE WEBSITES BUT HERE'S MORE INFORMATION ON MOTION PICTURE FILM AS IT RELATES TO DATES AND POPULARITY DETERIORATION PROBLEMS AND A LOT OF RESEARCH HAS BEEN FOCUSED ON MOTION PICTURE FILM GIVEN IT'S VALUE AND IMPORTANCE.

IT IS TRUE IN TERMS OF HEALTH AND SAFETY ISSUES AND FLAMMABILITY AND DEGRADATION PROBLEMS, THE MOTION PICTURE FILM IS MORE CHALLENGING BECAUSE THERE'S SO MUCH MORE FILM IN THAT CLOSED CANISTER.

WHERE AS WHEN YOU HAVE A COLLECTION OF FILL-BASED SHEET FILM, FOR EXAMPLE, IN PAPER END CLOSURES THERE'S NOT AS MUCH FILM.

IT STILL WILL DETERIORATE IN

MANY OF THE SAME WAYS BUT NOT THE RATE BECAUSE OF THE BULK AMOUNT OF FILM TOGETHER AND IT'S IN AN ENCLOSED ENVIRONMENT AND NOT ABLE TO BREATHE AND WHEN HAVE YOU SHEET FILM IN PAPER ENCLOSURES THERE'S MORE BREATHE ACT AND THE DEGRADATION RATE MAY BE SLOWER BUT A LOT OF THAT HAS TO DO WITH THE ENVIRONMENT TOO. YOU TAKE THE COLLECTION AND PUT IT IN THE ATTIC IT'S GOING DETERIORATE QUICKLY AND BECOME A CHALLENGE.

IN TERMS OF SEPARATING, WHAT DO I MEAN BY THAT?

A FEW THINGS.

ONE IS IF YOU HAVE CELLULOSE NITRATE IN YOUR COLLECTION HAVE YOU TO RECOGNIZE IT'S NOT ONLY DETERIORATING BUT GIVING OFF NITROUS OXIDES AND ACIDS THAT CAN ATTACK ADJACENT MATERIAL AND EVEN CAUSING THE SHELVING, THE CABINETRY TO RUST AND DETERIORATE.

IT'S IMPORTANT TO BEGIN TO SEPARATE OUT THOSE MATERIALS AND HOUSE THEM IN THE BEST POSSIBLE ENVIRONMENT POSSIBLE THAT YOU HAVE AVAILABLE TO YOU BUT NOT ADJACENT TO OTHER COLLECTION MATERIAL.

THE EXCEPTION IS IF YOU CAN POSSIBLY MOVE TOWARDS COLD STORAGE.

YOU THEN WOULD SIMPLY SEPARATE THE MATERIALS, ACETATE AND NITRATE.

IT'S NOT NECESSARY TO DISTINGUISH THEM BUT TAKE ALL THE FILM MATERIAL AND PUT IT INTO COLD STORAGE OR COOL STORAGE AND THEN SEPARATION IS NOT SUCH A CRITICAL PROBLEM.

IT'S ALL COMPOUNDED -- IT'S REALLY DIFFICULT.

THIS COULD BE THE FOCUS OF AN ENTIRE WEBINAR WITH INDIVIDUALS WHO HAVE ENORMOUS EXPERTISE IN THIS AREA BUT AGAIN THE CHALLENGE IS FIRE CODES, FIRE PROTECTION, BEING SURE YOU'RE INSURANCE POLICIES ARE VALID IF YOU HAVE NITRATE MATERIALS ON YOUR PREMISE.

ALL THOSE HAVE TO BE INVESTIGATED AND YOU CAN BRING IN A CONSULTANT TO WORK WITH YOU AND CONSULTING WITH THE LOCAL FIRE DEPARTMENT EVEN TO TALK ABOUT THESE MATERIALS.

THEY NEED TO BE AWARE YOU HAVE THEM ON THE PREMISE AND THE OTHER FINAL THOUGHT THAT I WILL LEAVE YOU WITH IS AS THE MATERIALS DETERIORATE THEY BECOME MORE DANGEROUS, MORE PROBLEMATIC.

SO CELLULOSE NITRATE IN GOOD CONDITIONS IS NOT AS MUCH OF A PROBLEM AS THE NITRATE FILM THAT'S BADLY DETERIORATED. THAT'S MUCH MORE DIFFICULT AND PROBLEMATIC.

DOES THAT HELP?

>> YES, IT DOES.

AND THE REFERENCES YOU PROVIDE TODAY THROUGHOUT THE IPI MEDIA STORAGE GUIDE ARE ALL LINKED ON OUR WEBSITE AND THERE'S BEEN GREAT INFORMATION SHARING ABOUT THIS ISSUE SO IT'S WRITTEN IN VERY APPROACHABLE WAYS TO ENCOURAGE PEOPLE TO CHECK OUT THE SITED MENTIONED.

THERE'S GOOD INFORMATION AVAILABLE TO US NOW.

>> THIS IS ONE FIELD OF PHOTOGRAPH CONSERVATION AND THERE'S PHOTOGRAPHS ALL OVER THE WORLD AND WE'RE AWARE OF THAT AND WORKING WHERE WE CAN TO PRESERVE THE MATERIALS AROUND

THE WORLD BUT THE FIELD HAS
RECOGNIZED HOW VITALLY IMPORTANT
IT IS TO MAKE THE INFORMATION
UNDERSTANDABLE AND BASIC AND BE
AWARE OF THE CHALLENGES YOU FACE
AND WE HAVE TO FOCUS ON
REALITIES AND PRACTICAL SOLUTION
AND THERE'S EXCELLENT PRACTICAL
RECOMMENDATIONS FOR SHORT AND
LONG-TERM PRESERVATION.

>> I'M SEEING SOME QUESTIONS
ABOUT COLD STORAGE AND FREEZER
STORAGE IN THAT THERE'S THE
NATIONAL PARK SERVICE RESOURCE
YOU MENTIONED IS VERY GOOD AND
APPROACHABLE ABOUT THAT AND GETS
INTO THE SPECIFICS YOU'LL NEED
AND ON THE ONLINE COMMUNITY HAD
THAT TOPIC AND THIS IS VERY
SIMPLISTIC BUT YOUR BASIC
APPLIANCE FREEZER OR
REFRIGERATOR CAN SOMETIMES SOLVE
AN ISSUE AND THEY WALK YOU
THROUGH ALL THE STEPS.
IT CAN BE VERY APPROACHABLE FOR
ANY TYPE OF INSTITUTION, ANY
SIZE INSTITUTION.

SO THERE WAS ANOTHER
CONVERSATION GOING ABOUT THE
STICKINESS AS PART OF THE
DETERIORATION YOU TALKED ABOUT
AND PEOPLE HEARD THE TERM STICKY
SHED IN MATERIALS OF FILM.

>> STICKY SHED -- I DON'T WANT
TO GET OUT OF MY LEAGUE --

>> MAYBE CLARIFY THAT POINT.

>> IT HAS MORE TO DO WITH
MAGNETIC MEDIA.

IT'S A TERM USED BUT WE DON'T
NECESSARILY TUESDAY FOR
PHOTOGRAPHIC MATERIAL.
FOR PHOTOGRAPHIC MATERIAL
THERE'S DETERIORATION OF THE
BINDER LAYER.

GELATIN IS THE COMMERCIALY
PREPARED PROTEIN THAT SWELLS
UPON EXPOSURE TO MOISTURE AND

THAT IS DETERIORATION FOLLOWING
WHEN MATERIALS GET WET, STUCK
TOGETHER AND WITH CELLULOSE AS
THE BASE DETERIORATES IT ATTACKS
THE GELATIN TO CAUSE IT TO BE
TACKY AND STICKY.

SOMEONE ONLINE I'M SURE CAN
ADDRESS THAT FAR BETTER THAN I
CAN.

>> OKAY.

AND THOUGH CONSERVATORS MAY HAVE
METHODS TO REVERSE OR STABILIZE
SOMETHING THAT'S BECOME STICKY
IS NOT SOMETHING YOU'D DO
WITHOUT THE HELP OF A
CONSERVATOR.

>> I THINK AND ANOTHER IMPORTANT
MESSAGE IS WHEN THE THINGS ARE
ALL HAVE BECOME ADHERED AND
STICKY AND DETERIORATED, SOME
INSTITUTIONS START IMMEDIATELY
START THROWING THEM AWAY.

I WOULD URGE YOU NOT TO DO THAT
AND BRING IN A CONSULTANT TO SEE
WHAT CAN BE SAVED.

THERE ARE TECHNIQUES -- NOT IN
ALL CASES BUT THERE ARE
TECHNIQUES TO TRY TO PRESERVE
THE IMAGE OR OBJECT.

IT'S A DIFFICULT PROBLEM AND
VERY DIFFERENT FROM CELLULOSE
ACETATE FILM WHEN IT
DETERIORATES THOUGH ONE OF THE
PARTICIPANTS MENTIONED ACETATE
FILMS STICKING TOGETHER.

IT CAN HAPPEN BUT FOR THE MOST
PART THE GELATIN IS IN
RELATIVELY GOOD CONDITION AND
THE DETERIORATION OF THE BASE
AND THE PLASTICIZER CAUSING AND

PHYSICAL DISTORTION.

>> IT CAN BE RADICALLY FLOWED.
I'M LOOKING FOR THE LINK FOR THE

WEBINAR.

COLD STORAGE IS IMPORTANT TOO.

>> AND THE OTHER THING I'M
LOOKING AT LOOKS LIKE ONE OF OUR
PARTICIPANTS IS CREATING A
DATABASE OF THE LINKS.

THAT'S COULD BE A GREAT THING.

>> IT'S ON OUR SITE.

>> THEY'RE ALL LINKED TOGETHER.

>> IT'S ALL LINKED AND ALL THE
GREAT RESEARCH YOU TOLD US ABOUT
AND PUT ON THE COURSE WEBSITE IS
UNDER THE TOPICS MENU IN THE
CONNECTING TO COLLECTIONS DOT
ORG.

IT IT'S BETTER FOR PEOPLE TO
CREATE THEIR OWN DATABASE AND
KEEP IT HANDY, THAT'S GREAT.
BUT REMEMBER WE'RE CONSTANTLY
IMPROVING AND FINDING LINKS AND
CAN BE A READY RESOURCE.

>> WE ONLY HAVE TWO MORE OF
THESE LEFT AND WE'LL TRY TO
ANSWER AS MANY QUESTIONS AS WE
CAN BUT SOME IMAGES OF PROBLEMS
BECAUSE I'LL TRY TO START NEXT
WEBINAR WITH SOME OF THE IMAGES
WE RECEIVE AS A REVIEW OF WHAT
WE DISCUSSED AND PINPOINTING
SOME QUESTIONS YOU HAVE ABOUT
YOUR OWN COLLECTIONS.

>> OKAY.

MIGHT WE CAN GET ONE MORE
QUESTION BEFORE YOU HAVE TO GO
AND I WANT TO TELL EVERYONE
ABOUT THE HOMEWORK.

IT WILL BE SIMILAR TO LAST
WEEK'S HOMEWORK WHERE YOU THINK
YOU CAN IDENTIFY NEGATIVES IN
YOUR INSTITUTIONAL COLLECTION OR
PERSONAL COLLECTION, GIVE MORE
INDICATION OF WHAT KIND OF
NEGATIVES YOU HAVE AND WHAT
WOULD BE CONCERNS YOU HAVE AND
WHY AND I'LL PULL UP THE LINK
HERE AND IF YOU HAVE ATTENDED
WITH A COLLEAGUE TODAY, PLEASE

LET US KNOW WHO THEY ARE SO WE
CAN GIVE THEM CREDIT FOR
ATTENDING.

IF YOU ATTENDED BY YOURSELF,
DON'T WORRY, WE KNOW WHO YOU
ARE.

WE SAW YOU LOG IN.

LET'S SEE IF I HAVE ANOTHER
QUESTION OVER HERE.

>> GRETA, YOU'RE DOING A GREAT
JOB AND EVERYONE OUT THERE, I
HAD MENTIONED WHEN HEATHER WAS
ON THIS AS PART OFFIER EXAM AN
GRETA WILL BE FINISHING HER
STUDY AND RECEIVING HER MASTERS
IN SCIENCE IN AUGUST AND SEEMS
HEATHER AND GRETA HAVE DONE A
FANTASTIC JOB IN ADDRESSING A
LOT OF QUESTIONS IN A VERY
SUCCINCT WAY.

THANK YOU, GRETA, FOR BEING
ONLINE.

>> AND MAYBE SOMETHING YOU HAVE
AT HOME FROM YOUR PERSONAL
COLLECTION WOULD BE FINE OR
SOMEONE YOU KNOW.

A FAMILY MEMBER

>> AND CINDY, IF NOT MAYBE YOU
COULD JUST TELL US THAT AND DO
ANOTHER.

LOOK AT YOUR PHOTOGRAPHIC PRINT
AND ALBUM.

WE DON'T WANT TO CREATE WORK
THAT'S NOT GOING HELP YOU.

MOST INSTITUTIONS HAVE
NEGATIVES.

IT'S INTERESTING, FROM FINE ART
MUSEUMS TO HISTORIC HOUSES AND
THEY ARE A CHALLENGE BECAUSE
THERE ARE MANY OF THEM.

>> GREAT.

OKAY.

WELL, IF I HAVE MISSED SOMEONE'S
QUESTION OR GRETA DIDN'T GET TO
IT TODAY SEND A SUMMARY TO
DEBBIE AND WE'LL DO OUR BEST TO
WE'VE IT INTO THE FUTURE

WEBINARS BUT I WANT TO THANK
EVERYONE FOR THEIR TIME AND
ATTENTION AND AGAIN WE'LL MEET
NEXT TUESDAY AT 1:00 FOR ANOTHER
WEBINAR GETTING MORE INTO THE

PREVENTIVE CONSERVATION ASPECT
OF THE SERIES.

THANK YOU FOR YOUR TIME AND
THANK YOU, DEBBIE, FOR THE GREAT
INFORMATION.

>> IT'S MY PLEASURE.

IT'S A LOT OF FUN.

I WISH I CAN SEE EVERYONE.

I'M ENJOYING IT.

THANK YOU, KRISTEN, GRETA,
JENNIE AND MIKE FOR YOUR
SUPPORT.

SEE YOU NEXT WEEK, TUESDAY,
1:00, EASTERN STANDARD TIME.

>> EXCELLENT.

THANKS EVERYONE.

HAVE A GREAT DAY.