



0131棉花品質檢驗——分論

0131.02棉纖維之色澤

●A COLORIMETER FOR USE WITH DISC MIXTURE.

Nickerson, Dorothy: J. Opt. Society America, 21:10, P.640-642, October 1931.

Summary

Describes an instrument for use in measuring color of agricultural products — hay, cotton, etc.

此研究農產品如牧草，棉花等之色澤之儀器。

●A NOTE ON COTTON FIBRE COLOR.

Nickerson, Dorothy: Textile Colorist 52: 636, P.805-807 (Woolworth Bldg., 233 Broadway, New York) Dec. 1931.

Summary

Describes some of the color measurements of cotton made in the Division of Cotton Marketing, U. S. Bureau of Agricultural Economics.

本文述美國農部農業經濟局棉花貿易組研究棉花色澤之方法。

●COTTON FIBER QUALITY, ITS MEASUREMENT IN RELATION TO STANDARDIZATION AND

UTILIZATION.

Nickerson, Dorothy: American Dyestuff Reporter, 21:1, P.4-9. Jan 4, 1932.

Summary

The author discusses "the color variations of the raw stock, and the necessity for considering these variations in relation to finished cotton goods."

作者討論原棉色澤之差異，及其對於紡織成品之關係。

●COLORIMETER AND METHOD EMPLOYED IN THE COLOR TESTING OF COTTON.

Nickerson, Dorothy: Southern Textile Bulletin 42:19, P.9. July 9, 1932.

Summary

Paper presented at 35th annual meeting of the American Society for Testing Materials, Atlantic City, N. J. June 20-24, 1932.

Description of construction and use of a "colorimeter..... developed by the color laboratory of the Bureau of Agricultural Economics in cooperation with the Koppfel & Esser Co."

本文為 Nickerson 氏發表之論文，述色度計之構造及用法，該色度計為農業經濟局色澤實驗室所發明。

●STUDIES OF STABILITY OF COLOR IN RAW COTTON, A PRELIMINARY REPORT.

Nickerson, Dorothy, and Milstead, L. D.
22p., multigr. Washington, D. C., U. S. D. A. Bureau of Agri. Econ. 1933.

Summary

The chief points are that:

- (1) Upland cottons at time of opening were fairly constant in brightness;
- (2) Upland cottons at time of opening varied greatly in amount of creaminess or chroma;
- (3) The creamier cottons held their brightness better than did the whiter cottons;
- (4) In most cases there seemed to be a high correlation between amount of rainfall and change in brightness.

美國高原棉在棉包打開時色澤之顯明程度比較固定，但其乳白色之程度相差甚為顯著，而乳白色者其光澤比較白色者為能經久，雨量之多少似與棉花色澤之程度有關。

0131.03 棉纖維之長度

●棉纖維之室內研究法

總信梅譯：(Gladys G. Clegg, M. Sc. 原著)上海商品檢驗局

民國二十五年

內容概要

本文之目的為證明原棉之變異及說明測驗若干變異之方法。

A. 原棉之變異：—

- (1) 棉纖維之發育與組織
- (2) 單纖維物理性質之變異

B. 混合品質試驗：—

- (1) 打樣
- (2) 長度分析，棉絲圖
- (3) 從棉絲分析圖測量棉絲之長度

- (4) 有效長度之測驗
 - (5) 飛花百分率之測驗
 - (6) 短絨百分率之測驗
 - (7) 製陪氏棉絲圖應注意防範事項
 - (8) 每單位長度之纖維重量
 - (9) 不成熟纖維之計數
- C. 利物浦棉花協會試驗棉花之檢查：—
- (1) 製表資料
 - (2) 棉之分類
 - (3) 前述試驗之價值

●FIBER LENGTH IRREGULARITY.

Ahmad, Nazir & Navkal, Hariráo; India. Ind. Cent. Cotton Com. Technol. Bul. (Series B), 16, 10 p., tables. 1933.

Summary

“Article discusses relation of irregularity of staple to spinning properties of cottons. It is stated that the spinning capacity of a cotton is due to 3 sets of factors:—

- (1) The physical and chemical properties of its fibers.
- (2) The mechanical treatment to which it is subjected in the cleaning and carding processes.
- (3) The appropriateness of settings, speeds, twists, and drafts in the flyframes, and the ring-frame.

It is claimed that the long fiber in a sample of cotton cannot affect the spinning results greatly, since they do not ordinarily make up over 10% of the sample. However, the short fibers act entirely differently and are a detriment to optimum results. As a measure of irregularity, K, the percentage ratio of the weight of all those fibers in a representative sample whose individual length

are less than three-fourths of the modal length, to the weight of the sample is chosen. Two objections to the coefficient of variability of length based on the mean length are given as follows:

- (1) In calculating it, use must be made of the relative percentages of the long as well as the short fibers which is considered undesirable.
- (2) The statistics is a mathematical abstraction which is not readily grasped by the practical cotton man." - C. M. Conrad.

本文敘棉纖維之整齊度與紡紗之關係，並列舉影響紡紗能力之三種因子：

1. 棉纖維之物理的及化學的性質。
2. 清花與梳棉時之機械處理法。
3. 裝置，速度，迴轉度，以及棉紡機上之拉力等之適宜與否。

在一棉條中夾有之長絨對於紡紗之影響甚微，因在普通情形下，長絨只佔全部棉條之一成也。但短絨則不然，其影響頗大。棉纖維之不整齊度以K代表之，K即等於較主體長度短四分之三之棉絲重量與棉條全重之百分比率。

棉絲長度之變異係數所以不根據平均長度計算者，其故有二：

1. 在計算平均長度時，長絨及短絨皆包括在內，此為不必者，因長絨之百分率(如前所述)並不重要也。
2. 平均數為一種統計數字，在實際量長度時並不需要。

●COTTON PULLING MACHINE

American Wool and Cotton Reporter 46: 11, p.57.

March 17, 1932.

Summary

"Developed by William Smith, principal of the New Bedford Textile School. The purpose of this device is to lay the fibres parallel for the sorting or stapling machine when carrying on research in

regard to cotton and in tests to determine the varying lengths or fibers in one lot of cotton."

此為William Smith所發明之一種梳棉機，可使棉絲梳直，以便使用長度分析機測其長度。

●A METHOD FOR MEASURING THE LENGTH OF COTTON HAIRS.

Balls, W. Lawrence: The Fine Cotton Spinners' & Doublers' Association, Ltd., Manchester - Experimental Department, (MacMillan & Co.) 1921.

Summary

This handbook gives a full discussion for the theory and practice of Balls' Sledge Pattern Cotton Fiber Sorter. (With illustrations).

1. Introductory - different methods for measuring the cotton fiber.
2. Historical note.
3. The "sledge" or portable model of cotton sorter, description, operation.
4. Degree of precision and experimental errors.
5. The preparation of cotton for sorting.
 - a. The draw-box and its uses.
 - b. Manipulation of the sliver.
6. Index.

(Structure of "Microbalance," p.40.)

此小冊為哈爾氏棉絲長度分析機之說明書。書中對於其所發明之長度分析機之原理，及使用方法均有詳細之說明。

1. 緒論——各種棉纖維長度測量方法概況。
2. 發明之經過。
3. 分析機之構造及使用法。
4. 該機分析之正確程度與試驗之發展。
5. 分析棉纖維之採用法，及棉條之製法。

(關於天秤之構造 p.40.)

**●THE STAPLING OF COTTONS.
LABORATORY METHODS IN USE
AT THE SHIRLEY INSTITUTE,
1931.**

Clegg, Gladys G.: Shirley Institute Memoirs, Vol. II, 1. (British Cotton Industry Research Association). 1932.

Summary

This pamphlet gives a full description for the laboratory methods of the Shirley Institute, esp. the operation of the Baer Sorter. (with illustrations and photographs).

1. Introduction.
2. Variability of Cotton as a Raw Material - Development and Structure of the Cotton Hair.
3. The "Combined Stapling Test" - Sampling - Length Sorting - The Staple Diagram - Measurement of Lint Length from the Sorter Diagram - Measurement of "Effective Length", "Percentage Dispersion" and "Percentage Short Hairs" - Sorted Hair Weights for Unit Length - Immaturity Count.
4. An Examination of Cottons Obtained from the Liverpool Cotton Association. Tabulated data (table II) Classification of Cottons - Value of the proposed test.

此小冊對於英國秀蘭學院所採取之棉絲分析方法有詳細之敘述，尤其對 Baer Sorter 之使用法最詳（附釋例及圖表）。

1. 原棉之變異程度——纖維之發育與組織。
2. 混合品質試驗——拆樣，取樣——長度分析——棉絲圖表——自棉絲圖表測量棉絲之長度——有效長度，飛花百分率，及短絨百分率之求法——單位長度之纖

- 維重量——未成熟纖維之計算。
3. 利物浦棉業會送來棉樣之檢驗。
- 試驗結果表——棉花之分類——此試驗方法之價值。

●MACHINE TESTS FIBRE FEATURES.

Cotton Trade Journal 12:44, p.4, (New Orleans, La., U. S. A.) Nov. 5, 1932.

Summary

"The Suter-Webb Sorter, developed recently, enables the operator accurately to measure the length and relative length uniformity in a single sample. This Sorter consists of two sets of metal combs mounted on a turntable." Method of using the sorter is described. (Also in Cotton Digest 5:5, Nov. 5, 1932, p.8, and in Southern Textile Bul. 43:10, Nov. 3, 1932, p.9.)

本篇謂新近發明之休特氏棉絲長度分析機 Suter-Webb Sorter 能使試驗者得確知一棉樣內棉絲長度，及長度之整齊度。該分析器之使用方法亦述及。

**●LES DIAGRAMMES DE FIBRES.
UNE METHODE ET DES APPAREILS NOUVEAUX.**

Deltour, L.: Revue Textile, 29:3, p.313. (61, Avenue Jean - Jaures, Paris, France.) March 1931.

Summary

Fiber Staple Tester.
"Apparatus for the determination of the mean length of a bundle of fibres is described.... The theory of the method is explained in detail and a method of obtaining a schematic representation of staple diagrams from a knowledge of the maximum, minimum, and mean length is

described."

—J. Text. Inst. 22:8, August 1931, p.A410.—

此一測定棉絲平均長度之器具；對於其使用之原理，及棉絲圖表之製作法，均有詳細之敘述。

● FEDERAL STANDARDS FOR FARM PRODUCTS.

(Federal standards and certification have greatly facilitated future trading in Agricultural Commodities.)

Olsen, Nils A.: Commercial Standards Monthly 8:2, p.35-38. (Nat. Bur. of Stand. U. S., D. Com.) August 1931.

Summary

Mentions cotton standards and cotton futures act and fiber-sorting machine.

敘述美國棉花標準，棉花期貨法，及棉絲長度分析機。

● A NEW TYPE OF COTTON SORTER.

Pressley, E. H.: Jour. Amer. Soc. Agron. 25 (2): 88-98, illus. Feb. 1933.

Summary

Contribution from the Department of Plant Breeding, University of Arizona, Tucson.

A sorter, constructed by the writer, "upon which combed samples of unginned cotton may be sorted," is illustrated and its use described.

此為 Pressley 氏發明之一種長度分析機，可以用之測量好棉之長度，對於其用法及構造俱有詳細之說明。

● THE MEASUREMENT OF FIBRE LENGTH.

Sever, W.: Textile Manufacturer 58:690, p.217-218, June 1932.

Summary

Abstract of paper read at the Textile Institute Conference, May 19, 1932, at Leamington Spa., England.

"It will be the object of this paper to indicate one or two.... practical applications and to describe a simple instrument which has been devised for the measurement of fibre length."

本文之主旨為指明一二種棉絲長度測定之實際應用法，並解釋一簡單之量棉絲長度器具。

● REGULARITY IN TEXTILES. PT. II. RAW COTTON.

Turner, H. A.: Textile Weekly 7:164, p.235-238 (49, Deansgate, Manchester, England.)

April 24, 1931.

Summary

Discusses the characteristics of raw cotton and includes a description of the Baer Sorter and its use.

本文敘述原棉之特性，內述及 Baer Sorter 之使用法。

● SELECTING THE RAW MATERIAL APPLYING INHERITED SKILL.

Textile Weekly 11(272):299, illus.

May 19, 1933.

Summary

Illustrates method of stapling cotton. Photographs from the U. S. Department of Agriculture.

解釋測量棉絲長度之方法。(美國農部測量棉絲長度之照片)

● SCIENTIFIC COTTON STAPLING. APPLICATION OF MODERN METHODS.

Textile Weekly 11(273):333, illus.

May 26, 1933.

Summary

Illustrates and discusses the Baer

tapling apparatus.

解釋Baer Sorter之使用法。

●THE SUTER-WEBB COTTON FIBER DUPLEX SORTER AND THE RESULTING METHOD OF LENGTH VARIABILITY MEASUREMENTS.

Webb, R. W.: American Society Testing Materials Proc. 32 (Pt.11), 764-771, illus. 1932.

Summary

Discussion: p.772-774.

Paper read at 35th annual meeting held at Atlantic City, New Jersey, June 20-24, 1932.

Webb 氏在美國 American Society for Testing Materials 宣讀之論文，述其新發明之長度分析機。

031.04 棉纖維之粗細度

●中國棉花之粗細問題

程養和：國際貿易導報 6:9

民國二十三年九月

內容概要

作者用纖維量測定法研究中國美種棉及中棉之固度，並比較之。

- (一) 棉花粗細與紡紗支數之關係(表二)
- (二) 測驗棉花粗細之方法。
- (三) 由纖維量上所見中棉粗細之差(中棉纖維量記錄表)
 - (甲) 纖維粗細之區別
 - (乙) 同一商業名稱中纖維粗細之差別。
 - (丙) 籽色相異之棉纖維粗細之差別。
- (四) 由纖維量上所見中國美種棉粗細之差別(美種棉纖維量表)

●HILFSMITTEL ZUR BESTIMMUNG DER FEINHEIT VON EINZELFASERN.

Krauter, G.: Monatschrift für Textil-Industrie 47(11):215-216, illus. Nov. 1932.

Summary

Hair-weight determination apparatus.

"A bundle of cotton hairs is prepared by means of the usual type of staple drawing apparatus (e.g. the Zweigle instrument), and then transferred to a device for counting. This consists essentially of 2 brass rods, 7 cm. long, which are placed parallel to each other and separated by a distance slightly less than the length of the hairs. The rods are covered with adhesive bands with the adhesive material on the outer surface. One end of the group of hairs is attached to the top of one rod and the hairs are then stretched across the gap and their other ends fixed to the top of the other rod. The hairs are counted with the aid of a microscope or by means of some suitable counting device. A glass plate is then placed under the hairs in contact with them and a second plate of exactly the same size is placed above. The two plates are fixed together by means of clips, and the projecting portions of the cotton hairs on each side are burnt with a sharp pointed flame. The resulting sections of hairs between the plates are equal in length to the plate width. The whole may be weighed and the weight of the hair obtained by subtracting the weight of the plate and clips from the total, or the hairs may be removed and weighed on a suitable balance.

本文敘述纖維重量測定器之施用法：

將棉花一束用普通之棉花纖維長度分析機梳平直之，然後將此梳直之纖維置於新發明之數棉器內，此機有兩平行鋼桿各長七公分，其距離比纖維略短，鋼桿上有膠質帶，將纖維之兩端黏於兩桿上使不彎曲，後用指大鏡計算數目，再用同等大之玻片二將纖維夾好，用夾子將玻片外兩端之纖維燒去之，先連玻片秤之，然後再減去玻片之重量，即為棉絲之重量；或將棉絲取出單獨秤之亦可。

●MEASUREMENT OF FIBRE AND YARN DIAMETERS BY DIFFRACTION METHOD.

Matthew, J. A.: Textile Institute, Journal 23:3, p.T55-T70, illus. charts, tables. March 1932.

Summary

"The present paper describes a form of the eriometer, developed in connection with work on flax fibres."

此為 Matthew 氏所發明之 eriometer, 以迴光鏡測定棉絲或紗之直徑, 本文對此儀器加以詳盡之說明。

●MEASUREMENT OF FIBER AND YARN DIAMETERS BY DIFFRACTION METHOD.

Matthew, J. A.: Jour. Textile Inst. 24(1): T54-T56, illus. Jan. 1933.

Summary

Modifications of methods previously discussed in author's paper with above title.

本文為對上述儀器之使用法加以修正。

●MEASUREMENT OF FIBER DIAMETERS BY THE DIFFRACTION METHOD.

McNicholas, H. J. & Curtis, H. J.: Bureau of Standards Journal of Research 6:4, p.717-734, illus. (Bureau of Stand. U. S. D. Com., Washington) April 1931.

Summary

"In the present paper a new construction of Young's instrument (the eriometer) is described, and a critical study is made of the accuracy and adaptability of the instrument in the averaging of a wide range of diameters as distributed in a group of fibers. Sources of error and

limitations of the method are discussed."

Wool fibers were used in this study.

本篇對於新發明之測量測定法 (Young's instrument) 作詳細說明, 並對於該儀器之測定粗細不等之纖維所得之平均數之精確度, 及施用之便利, 均加以深切之研究; 同時更敘述误差之來源, 及施用時之限制等, 本試驗所用之材料為羊毛。

●THE DETERMINATION OF SAMPLE SIZE FOR DIAMETER MEASUREMENTS IN COTTON FIBER STUDIES.

Pope, O. A.: Journal of Agricultural Research, 43:11, p.957-984. Dec. 1, 1931.

Summary

"The evidence secured from this experiment indicates that a sample size of 100 measurement of width and thickness will provide a safe margin of statistical significance for the determination of differences."

本試驗證實在測定纖維之長度時, 取樣一百次為計算其差異顯著否之最低限度。

0131.05 棉纖維之強度

●STRENGTH AND VARIETY IN COTTON FIBRES.

Bowman, F. H.: The Structure of the Cotton Fibre. Chapter XI. (MacMillan & Co., Ltd., St. Martin's Street, London). 1908.

Summary

The first part of Chapter XI gives the testing result of strength of different cotton fibers (tables) on a lever machine with a sliding weight, which was especially constructed for the author (Bowman), also Charles O'Neil's result on different lasses of cotton (tables).

“To make a fair comparison of the relative strength, it is necessary to compare the breaking strains with the relative diameters of the respective fibres,” p.267.

此為Bowman氏書中之一章，前半部述該氏與Charles O'Neil氏試驗數種棉樣之結果，據謂比較不同品種之強度時，應與棉絲之直徑同時比較。

● A COMPARISON OF SOME METHODS OF TESTING THE BREAKING STRENGTH OF SINGLE COTTON FIBERS.

Harirao Navkal, & K. R. Sen.: Indian Central Cotton Comm. Techn. Lab. Technological Bul. Series B. No.5. January 1930.

Summary

This paper deals with the merits and demerits of 3 types of instruments of testing the breaking strength of single cotton fibers, viz. the hydrostatic (O' Neill's), the balance, (Baratt's), and the pendulum (Balls' Magazine Hair Tester).

Various results are given for the different instruments. It is shown that the mean obtained by Baratt's higher than that obtained by the other two, of which O'Neill's gives the higher value. Results obtained at the Technological Laboratory for 39 cottons tested on both the instruments are given.

The errors of these 3 instruments are discussed in details. It is concluded that the value got by the Baratt's Tester is much greater than that got by the other two, both of which seem to agree fairly well if a large number of readings are taken and if CaCl₂ solution is used instead of H₂O in the O'Neill's Tester.

本文敘述三種單根纖維強度測定器，討論其得失，試

驗方法係用三十九種印度棉以三種棉絲強度測定器試之，即 O'Neill's, Baratt's 及 Balls' 三種，對於三種儀器之差異有詳細之討論，結論謂 Baratt's 者試得之結果較其他二種為高。

0131.06 棉纖維之撚曲度

● 中棉撚度檢驗方法之研究

實業部上海商品檢驗局農作物檢驗組

上海商品檢驗局業務報告第四編研究，第一章農檢組棉花研究報告，第五節 p.33

民國二十三年一月

內容概要

1. 研究說明——研究之目的凡三：研究加蓋水與蛋白質時對於棉絲撚度之影響一也，研究應觀察一棉絲之何部二也。
2. 研究方法：
 - (1) 先測定一棉絲各段之撚曲而後加蓋水與蛋白質再測定之
 - (2) 將各種棉樣之棉絲在顯微鏡下數其各段之撚曲數
3. 研究結果：
 - (1) 纖維着水後撚曲減少，但乾後復原
 - (2) 中棉撚曲數之分佈情形細絨與粗絨不同

● 中棉纖維撚曲數之檢驗方法之研究

程養和：國際貿易導報 6:4 p.185

民國二十三年四月

內容概要

1. 研究目的：作者指出撚度研究之重要及外人研究之結果不適用於中棉故欲研究：
 - (a) 中棉是否亦將觀察纖維中段。
 - (b) 假定一觀察中棉的適當範圍。
2. 作者證明觀察時加蓋水蛋白質之必要。
3. 中棉撚度「間距」之觀察，求撚曲在全根纖維中之分佈。
4. 觀察結果：全根纖維上撚度最多之處不在中間而在離中間左右各 4285—6000 u 之處，如以曲線表示之則成一“M”字形而以兩端之撚曲數為最低。
5. 作者討論：
 - (1) 中棉較細之棉類以百根計其中部五十根之撚曲數與平均數相差無幾。
 - (2) 較粗者中部之撚曲數較平均數為高。
6. 未附檢驗撚度應取方法。