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(Stäkel 1910).

, Fuss (1786/1911)

. LIX: 1739 .

. LXXV. II

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: 1755 .  
(Wolf 1860, p. 190):

71° 30.

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0,656 0,658  
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(Bru 1981,

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(Petty 1927)

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[1785 – 1816]<sup>3</sup>

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[1260 – 1387] Casaubon [1559 – 1614]<sup>5</sup>.

*Philosophical Transactions*

21]. [ .3, 1634 .

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15 1660 ., 521 [ ],

1801; Creighton 1894, .2, .747 – 748). (Heberden

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(1674b).

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 ( 1899, .2, .622). , ,  
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 16 , 6:5 , 36-  
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 [ ] 0,62 64.

**6** 64 64 **16** 40 40 **26** 25 25 **36** 16 15  
**46** 10 9 **56** 6 6 **66** 3 4 **76** 1 2

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.320 [ ]:

.385 – 386 [ .11].

.394 [ ], 14:13. :

? (1927).

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40 , 25 ,

[ .356 [ .3] ],  
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6 1671 .,  
1646 ., *De*  
*Arthritide et Lue Venerae* [ (?)  
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( , *ex sponte creatis*),  
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Houghton ,  
Houghton ,

, Aubrey

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*Times.*

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(FitzMaurice 1895).

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(1778 – 1868),

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6. (Petty 1674b, . 82 – 88):  

$$16 \quad ( < 16) \quad ( \quad )$$

$$70 \quad \sqrt{70} : a. \quad b (a, b > 16)$$

$$a : b.$$

$$16, 26 \quad 36 \quad . \quad lease$$
7. ,
8. (1844?)  

$$26,$$

$$, 10 \quad 5.$$
9. 1660 ..
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1720 ., 63 ,

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(Board of Ordnance)

1721 . ,

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. Grant (1852, . 480)

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(1716, . 456):

*Ut veram fatear, minuta secunda vel etiam dena secunda,  
instrumentis quantumvis affabre factis certo distinguere vix homini  
datum est.*

1835 ., (1852, . 169), 10"

(1731 – 1732, . 385) 1731 .

69 ( . 181) :

Forbes (1975, . 80)

1740 . 84 .

( . 174 – 179)

( . 179)

1731 – 1732, . 331 .)

( , *Phil. Trans. Roy. Soc.*



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(1829).

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2. 18 , , 1852 .
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4. ( 1735 .  
109). ( 1973, .
5. , ,  
(1720 – 1732 , b). . MacPike (1932).  
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$$s = \frac{1}{2}at^2.$$

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[1588 – 1648]

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(2013, § 2.2.3).

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(2013, § 2.2.3).

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stoole, . . .

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(1609/1992, 2015).
- (Sheynin 1974, . 107).
- 14.** (2015);
- 15.**
- 16.**
- (1610, .), . . . 1.  
(1632, .), . . . 1948.  
. . . 1.  
(1638, .), . . . 2.  
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Hermann (1991, . 80 – 81)

, Perkovitz (1999, . 38),

-c :

Klemm (1982, . 201)

1749 .

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2002). (Eckert

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(§ 1).

(§ 3), (§ 2).

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*Nuova Scienza*  
XVI XVII .

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(Hankins 1985).

1727 . 20  
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( 853).

(Scherrer 1922, . XV).

1738 .

Steele (2006)

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( 107, .423).

( 17)<sup>2</sup>. (Calinger 1996),

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*Theoria cum praxi* (

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1740 . II

1746 .

: Robins, *New Principles of Gunnery* (

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(Steele 2006).

1744 .  
. 309):<sup>3</sup> (*Opera Omnia*, . 4 , . 6,

( . . )

77),

(Truesdell 1954, . XXXVIII).

, 111,  
1200 (Calinger  
1996).

. 1773 1776 .,

1746 .

(Nowacki 2004).

XVIII . [ ]  
1763 . 25 . 1746 –  
(Eichler 1974;

Winter 1957).

(?),

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222; 259),

( 179,

(Kleinert 2002).

(Ackeret 1944).

1749 . II

Finow

1605 .,

. 1743 .

, 1746 .,

. 1749 .

(Euler, *Opera Omnia*, . 4 , . 6,

. 311 – 316).

1751 .

( 332)

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(Truesdell

1954, . LVIII – LXII).

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*Rocolini*)

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(*Opera Omnia*, . 4 , . 6, . 317):

Rocolini,

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( 338, 412, 600, 812, 813).

(Bradley 2001).

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(Steele 2006, . 282).

(Eckert 2002).

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( Finow ).

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(Opera Omnia, .4 , .6, .317).  
написал (.135):

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(Manger 1789, . 1, . 91 – 106).

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. Belidor (1737)

Mariotte  
(1718),  
(Blay  
1986).

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( 229, 233).

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(Eckert 2002).

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(Manger 1789, . 1, . 91

- 106),

(Artelt 1893) -

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, J. K. George,

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(Ackeret 1957, . LVI)

. Truesdell (1984, . 341),

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(Steele (2006),

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(Steele 2006, . 290)

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(Szabo 1979, . 219)

1783 .

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(Steele 1994).

XVIII . (

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, *Scientia*

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*Navalis* ( 111)

(Truesdell 1983, . 325)

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(Ferreiro 2007; Nowacki 2004).

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(Steele 1994, . 369)<sup>10</sup>.

25 . 1778 ..

II (Besterman 1976, . 184 – 186):

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<sup>12</sup> 1783 ..

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(Opera Omnia,  
.4, .6, .330):

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Girolamo Lucchesini,

1780 .

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(Bischoff 1885):

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XVII .,  
(1900/1924, . 177 – 180),

(1957), Bellhouse (2007)

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Fuss (1786):

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(J. Kupper [3])<sup>1</sup>.

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L. G. Du Pasquier

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Sofonea [5], Loeffel [6]

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1760 .,  
(1741 – 1766),  
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,  $N$   
(1) $N$ , (2) $N$ , ..., (k) $N$   
, ..., k-

,  $l_x, x = 0, 1, 2, \dots,$   
k. , (1), (2), ..., (k)  
1, 2, ..., k.  
 $1p_0, 2p_0, \dots, kp_0$ .

$M$   $m$   $n$  ?  
,  $M(m+n)/(m)$ ,  $(m+n)/(m)$   
 $l_{m+n}/l_m = n p_m$ .

(z)<sup>3</sup>.  $m$

,  $z$   
( $m+z$ )/( $m$ ) = 1/2.

:  
 $m$  ,  
?  $M$   $m$ ,  
 $Ma$ ,  
 $R$  [ $Ma$ ].  
 $Ma$ .  
 $R$

$$a = [(m+1)/ + (m+2)/^2 + \dots + ]R/(m).$$

$$R, n.  
a = [n/ ^n + (n+1)/ ^{n+1} + \dots + ]R.$$

(1), (2), ...

1742 4.

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5.  
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 $n^2N$  ...  $n$   
 , ...

$nN$ ,

6,  
 $1/n$ .

100  
 100  
 $N$

100 :  
 $N, nN, n^2N, \dots, n^{100}N$   
 $(100)N, (99)nN, (98)n^2N, \dots, n^{100}N$   
 $M$  :  
 100 :

$$M = (100)N + (99)nN + (98)n^2N + \dots + (1)n^{99}N + n^{100}N =$$

$$n^{100}N[1 + (1)/n + (2)/n^2 + \dots + (99)/n^{99} + (100)/n^{100}].$$

$$n^{100}N \quad 100 \quad ;$$

G,  
 100

$$M/G = [1 + (1)/n + (2)/n^2 + \dots].$$

, ,  
(1), (2), ...  $n$  ,  
.  
7.  
1841 .  
...  
8,  
8.

**2.**

,  
.  
5 %.

[ ]

$$l_m a_m = l_{m+1} R + l_{m+2} R + \dots$$

, . . . l\_m a\_m

v,

$$a_m = [vl_{m+1} + v^2 l_{m+2} + v^3 l_{m+3} + \dots] R / l_m$$

$$R = 1$$

commutation numbers<sup>9</sup>

$$a_m = N_{m+1} / D_m$$

$$D_m = l_m v^m -$$

m, N\_{m+1}

$$N_{m+1} = \sum_{k=m+1}^w D_k \quad (w \text{ is } \dots)$$

10 20

m,

n

10 20

0, 5, 10, ..., 80

5%

3500

1000

20

$m$

$z$

$z$

$m + z$

3.

10

1776

11

$R$

$S$

$u$

$S u$

(

)

$$s + ua_{xy} = R(a_y - a_{xy}).$$

$$s - \quad , a_{xy} -$$

,

,

.

-

$$, Ra_y -$$

,

$R,$

$Ra_{xy},$

,

:

$$- \quad u = 0,$$

,  $s$

$$- \quad s = 0,$$

$$- \quad s = u,$$

,

$s \quad u \quad 6\%$

15, 20, ..., 90

,

5, 10, ...

$$u = 0 \quad s = u.$$

;

( )

550

,

2

1100

1000

„

]

[

:

:

,

,

$m$  ,  
100 .

$z$  . , 6% .

$z$

$m = 5, 10, 15, \dots, 90$  , 5%  
6% ,

100 .

(?)

(1630 – 1695) 1653 . -

300 ,

14, ... , 63 .

1689 .

1726 . , ,



(?)

95

95

94

95

$m N$

1000 <sup>12</sup>

1000N

5%

50N

$n N$

$Nl_{m+n}/l_m, 50N$

<sup>13</sup>

8 1/2

<sup>14</sup>

4.

1776 ..

1785 <sup>15</sup>

$N$

$b.$

$z$

1000

$(n + 1)$ -

1000

(§ 3).

1770

( 403).

L. G. Du Pasquier [4]

A. G. Kästner (1719 – 1800) [10],

(§ 5).

5.

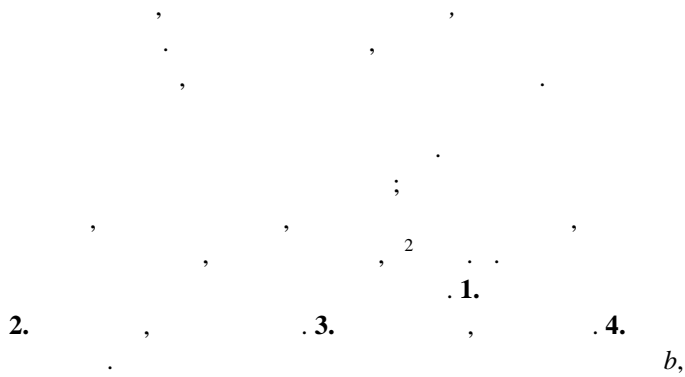
$m$   $n$ .

$b$

$b$

?

]



16

$$+ (l_{n+1}/l_n)[(l_{m+1}/l_m)(b + c) - c].$$

(?)

$l_{n+2}$

$l_{m+2}$ :

$$^2 + (l_{n+1}/l_n)[(l_{m+1}/l_m)(b + c) - c] + (l_{n+2}/l_n)[(l_{m+2}/l_m)(b + c) - c].$$

$$\begin{aligned} &^x a + ^{x-1}(l_{n+1}/l_n) + [(l_{m+1}/l_m)(b + c) - c] + \\ &^{x-2}(l_{n+2}/l_n)[(l_{m+2}/l_m)(b + c) - c] \\ &^{x-3}(l_{n+3}/l_n)[(l_{m+3}/l_m)(b + c) - c] + \dots \\ &^0(l_{n+x}/l_n)[(l_{m+x}/l_m)(b + c) - c]. \end{aligned}$$

$$, \quad l_{n+x} = l_{m+x} = 0.$$

$x$

$b$ .

$(b + c)$ :

$$\begin{aligned} F &= (1/l_n)(l_{n+1}/^2) + l_{n+2}/^2 + \dots), \\ G &= (1/l_n l_m)(l_{n+1} l_{m+1}/^2) + l_{n+2} l_{m+2}/^2 + \dots). \end{aligned}$$

$$a + Gb + Gc - Fc = 0$$

$$c = (a + Gb)/(F - G), b = [c(F - G) - a]/G, a = Fc - G(c + b).$$

L. G. Du Pasquier,

[4]:

- 1. . . . .
- 2. (Louis-Gustave Du Pasquier, 1876 – 1957), . . . . .
- 3. 1669 . . . . . ( 1895 . ( 2013, § 3.2.2). . . . .
- 4. Willem Kersseboom, 1691 – 1771 . . . . .
- 5. . . . .
- 6. 1748 . . . . . 1961 . . . . .
- 7. [8, .277], (?) [ ] . . . . .
- 8. (2013, § 7.2.2). . . . .
- 9. commutation Tetens, 1763 – 1805 (1785). . . . .

10. 1772 .  
 (1755 – 1825),  
 1773 .  
 250 . 1783 .  
 1786 ..

11. Johan Augustin Ritter (1721 – 1798)

12. ( .  
 ), . . . .

13. , ,

14. . [9]. . . .

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16. . . . .

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--- (2013), . . . . . S, G, 11.

Fuss N. (1786), Lobrede auf Herrn Leonhard Euler. *Opera Omnia*, ser. 1, t. 1, 1911. S, G, 34.

Tetens J.-N. (1785), *Anleitung von Leibrenten und Anwartschaften*.

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**Evolution of statistics in India.**  
*Intern. Stat. Rev.*, vol. 67, No. 1, 1999, pp. 13 – 34

**1.**

1.1

(1757 – 1947).

(1947)

1950 – 1960 ..

1930 – 1960 .

Roy, S. S. Bose,

, D. B. Lahiri.

, S. N.

, Pandurang

Vasadeo Sukhatme Vinayak Govind Panse.

**2.**

**2.1.**

. Godambe (1976):

*Bhangasuri*

2095

. *Nala*

. *Bhangasuri*

c

: \_\_\_\_\_

\_\_\_\_\_.

Bhadrabahu (433 – 357 .

. Mahalanobis (1954)

.) syadvada

Haldane (1957)

2.1

(370 – 283 . .),

321 –

296 . .

35 (Shamasastry 1929, . 158)

*Gopa*

[ ]

(1950)

( . 35, . 159)

VII

VIII .

[

]

**2.2.**

*Ain-i-Akbari*, 1590 . *Ain-i-*

(Jarrett 1894).

1690 .  
(?).  
Jag-Jivan  
Das, Rai Chatar-mal Sujan Rai Bhandari.

**3.**

**3.1.**

(EIC)

(1757 – 1947).



*patwaris,*

EIC.

1807 .

:

3.1

1807 .

60

15

3.2

(Buchanan 1807).

30

1816 .

, 1838 .,

Martin (1838)

3.3

2400

[...]

(on equivalent

produce as per free trade);

1848 .

- , , 1847 .,

Sykes  
(India House). 1853 . , 1 1855 . 10

1868 .,  
, 1822 1847 . W. H. Carey  
(Chaudhuri 1964), 179 917 [  
] 400 . .  
1769 – 1855 . EIC, 1858 – 1869 .

1867 – 1872 .

1881 .

Kingsley Davis (1951) ,  
[...].

1815 . W. Hamilton  
, 1828 .

(Thornton).

1869 .

W. W. Hunter  
. 1870 .

[ ?]

( , , )  
(Hunter 1875).

;  
;  
;  
;

(36 ) 240

*Imperial*

*Gazetter of India* ( , 1881).

Chaudhuri (1964):

[ ]

*(Indian Famine Commission)*

1886 .

*Agricultural Statistics*

*of British India.*

(?) 1895 .

3.4

3.5

3.6

3.2.

3.7

. 1905 .

(?),

(DGCI&S).

1906 .

*Indian Trade Journal.*

1910 . Datta . (1913).

Shirras (1919)

1850- 3.8  
 1918 . 3.9  
 1925 .  
 Visweswarayya ,  
 , 1934 .. -

(headquarters)

, . *Statistical* (1979).

4.

1947 .  
 , 1949 .  
 , 1949 .  
 (Unit).  
 , 1951 .  
 (CSO)  
 , 1950 .-  
 (survey), NSS,  
 . 1961 .

4.1.

(CSO).

;  
 ;  
 ;  
 ; *Annual*  
*Monthly Statistical Abstract*;

1954 . (NIC),  
1949 ., [ ?]  
(Unit)  
CSO. [CSO]. , CSO  
, . 1956 .  
(?) , ,  
. CSO  
, .  
1957 . [?]  
[ ?],  
4.1,  
CSO NSSO 1973 . [ ?]  
CSO B. Ramamuri, S. Subramanian,  
P. C. Mathew K. R. Nair.  
**4.2.** .  
(NIC)  
. 1950 . NIC  
. .  
( ), 1935 .  
, .  
-  
. 1950 . 1951 .  
607 . 1957 .  
NSS  
. [ .  
§ 4], 1961 .  
, .  
, .  
, .  
. .  
1971 .  
(NSSO),

NSS

[ ?]

:

[ ?]

(

).

NSS

J. M. Sengupta, D. B.

Lahiri, S. Raja Rao M. N. Murthy.

Lahiri,

NSS,

. NSS

NSS, Deming (1973)

:

**4.3.**

DGCI&S

1948 ..

1951 1961 .

R.

A. Gopaldaswami Ashok Mitra

1970 .

1946 . [ ?],

(?)

(SSB),  
CSO

NSSO

1964 .

**4.4.**

1954 .

(1953, 55)<sup>4.2</sup>

$$Y_t = Y_0 [1 + \rho [(1 + i)^t - 1]] [(i + c) / i]$$

$Y_t -$

$t, 0$

$0, i - c$   
 $, i - c$

$i$

$i$

0,3,

18%.

1955 .

(PPD),  
. Pitambar Pant,

PPD

. 1972 .

, 1974 .

*Sankhya*

*Perspective of development: 1961 – 1976. Implications of planning for  
a minimum level of living.* ( : 1961 – 1976.

).

[ ] [

] PPD

1960-

(Minhas . 1974).

, CSO

NSS.

1/P. U. 1.1 19

1954, ,

NSS,

. [...]



90 90.

12 12

).

(

12 12

1/P.U.1.1.

5.  
5.1.

, 1915 – 1931.

1893 .

1913 .

1915 .

(R 1973):

*King's College.*

\_\_\_\_\_. [...]

[...]

[...]

5.1

Acharya Brajendra Nath Seal,

1917

*Sankhya* ( . 2, 1934,

. 1).

1920 .

Annandale,

Zoological Survey of

India (

),

( 1922).  
5.2

( 1925; 1930; 1931; 1936)

$D^2$

[ ]

$$D^2 = (\mu_1 - \mu_2)'^{-1}(\mu_1 - \mu_2).$$

$$\mu_i, i = 1, 2 \quad i- \quad -1$$

(1930)

, 1936 .

$\mu$

(Rudra 1996),

(1928)

$D^2$

( 1929), . Rudra (1996),

( 1930).

$D^2$

$F$

(Bose

& Roy 1938).

D<sup>2</sup>

(1891) 5784 (1933) 87 Risley  
 11 8 20 797  
 142  
 [ ?], 133

(1928)

1920-  
 J. A. Hubback

1923 . 400  
 100 . ; 1925 .  
 8x1000 .

Hubback (1925)

(?), (1923)  
 upper air<sup>5.3</sup>.

Presidency College.

1920-

(Kiaer1895, 1897; Bowley 1906; Jessen 1926);

Presidency College,

, Subhendu Sekhar Bose Harish Chandra

Sinha,

14 1931 . Pramatha Nath Banerjea, Nikhil  
Ranjan Sen *Sankhya* ( . 1, . 124,  
[ 1931 .])  
[ ..., - ]

R. N. Mookerjee<sup>5.4</sup>.

*R. N. Mookerjee*

. 17 1931 .

*Sankhya.*

**5.2. , 1931 – 1950.**

Shewhart

(1931).

1937 ..

, 1941 .

( 59

).

[ ?]

( )

, Hotteling :

:

(1946) 7540 (1 =  
 400 ),  
 , 10  
 50 ,  
 6304 ,  
 7562

Mahalsnobis & Lahiri (1961)

Lahiri (1973)

(IPNS).

Deming (1964):

14

(IPNS), [ ] ,  
 1936 . [...] IPNS -

. [...] 5.5 ,

(1938) [?],  
 (Hansen & Hurwitz 1943) 1937 .

$D^2$

$D^2$

Bose & Roy (1938)

1930-  
Bose (1938)

S. S.

R. C. Bose

5.6

K. R. Nair

(Mahalanobis & Nair 1940; Nair 1992) Rao.

(Rao 1947)

1941 ..

?)

(Rao 1992):

5.7

75

1943 .

75 = 2

, 1940 ..

, 1948 ..

, 1965 ..

1948 ..

(RTS)

1950 .. D. Basu<sup>5.8</sup>.

1949 1963

1963 RTS  
1972 1976

1940-  
[ ]

1945 – 1946

12 , C.

Tattersall

Shewhart, 22

1947

1948 190

1953 1954

(SQC and OR)

1926 Brahmani

(Mahalanobis 1931; Mahalanobis & Chakravarti 1931)  
1868 – 1928  
(?).

1957

Hirakud,

1959 .

1960 .

1995 .

Masuyama,

1954 .

37

(CMEL)

HEC-

1950 .

1956 .

2M [Hollerith Electronic Computer], 1959 .

IBM 1401

Honeywell.

1966 .

ISIJU-1,

[?].



1950

(ISEC).

1239

50

(§ 5.2), , 1976 ..

1950-

13

1979 .

1976 .

(SQC and OR) 10

1950- (Rao 1973).

R. R. Bahadur,

D. Basu, , D. B.. Lahiri, M. Mukherjee, R. Mukherjee  
. Bahadur

1956 – 1961 ..

Basu

(

Bahadur, Basu

[ 4 ]

R. C. Bose S. N. Roy.

G. P. Patil,

T. N. Srinivasan, R. G. Laha, J. Roy, Sujit Kuwar Mitra, D. K. Roy,  
Choulhury, J. M. S. Chakrabarty.

, , complete sufficient statistics,  
conditioning and ancillarity,

– [– ] Basu  
complete sufficient statistics

, Lahiri

; M. Mukherjee

R. Mukherjee –

1950-

1950-

Kallianpur – Striebel

5.10

1955 .

Masani

(

)

1962 .

5.11

1950-

S. S. Srikhande, 1947 – 1950  
Parker R. C. Bose  
Bose

6.

(IASRI)

1929  
1940 (ICAR)  
P. V. Sukhatme. 1932  
Fergusson College  
1933 – 1936  
1936 1939  
1939 – 1940 ICAR  
1943

Sukhatme

1949

6.1

(FAO)  
1949

14 1951 Sukhatme  
FAO, Panse,  
Plant Industry,  
ICAR,

split-block [ ] replicated progeny  
(Panse & Hutchinson 1935; 1937). Panse (1940)

6.2 Panse

Panase ICAR  
10 U.  
P. 6.3

ICAR  
(IARS). 1951 . Panse  
ICAR.  
1941 . (ICCC)  
Panse ( )

(?)  
Panse. Panse & Sukhatme  
ICCC, (1948; 1951)  
Panse

patwari<sup>6.4</sup> [ ? ]  
Panse

1947 .  
1997 .  
50-

IARS § 6,  
Panse Sukhatme

Prem Narain,

6.1.

ICAR

(Adhikari 1990).

4

NSS

ICAR,  
33 16,5

(1946)

ICAR

ICAR

Adhikari

]

[

ICAR,

Panse,

. Adhikari

, Panse

:

*patwari*),

. [...]

XVIII .

. [...]

*patwari*  
6.5

Sastry (1997)

, CSO

1960 – 1961 .

1963 – 1966 .

7.

1941 .

Presidency College

1943 .

H. K. Nandi.

R. C. Bose S.

N. Roy,

designs.

R. C. Bose.

1945 .

S. N. Roy, 1950

1949 .

P. K. Bose.

H. K.

Nandi M. N. Ghosh,

1944 .,

, Presidency College

(motivated them).

K. B. Madhava

1946 .

A. Bhattacharyya B. N.

Ghosh.

[ ] . ,

. Bhattacharyya

characterization theory.

(Arnold 1994).

1948 .

M. C. Chakravarti.

. Chakravarti

Chakravarti

1953 .

11

V. S. Huzurbazar,

1940-

1950-

(?)

**8.**

:

**1960 .**

1960 .,

1964 .,

- 1972 .,

1947 .,

8.1.

1960 .

(?),

[ ?].

[ ] NSS.

NSS,

NSS.

,  
NSS,

NSS,

(Chatterjee, M. L.

Puri, P. K. Sen),

(V. P. Godambe, D. Basu,

J. N. K. Rao)

search designs,

(J. N. Srivastava).

, R. N. Bhattacharya, J.

Sethuraman, M. Ghosh, J. K. Ghosh .

8.2

Sukhatme (1965)

8.3

Sukhatme



[ ?]

(Nikhilesh Bhattacharya, S. D. Tendulkar ., ., , Pal, Chakravarti & Bhattacharya 1986; Tendulkar 1989; Minhas . 1991). Bhattacharya . (1991)

NSS 1952/1953 1983 .

8.4

[ ] , NSS. Minhas (1988) , , .

1972). (Minhas ., .)

CSO

SGC and OR .

8.5

(Wyatt 1996)

(WHO),

(IIPS)

. 1992 – 1993 .

(NFHS) 88 562

24

8.6

(IIPS, 1995).  
1970-

1980-

8.7

(PPRU)  
Research

(SURDAC)

(Survey

SURDAC

8.8

1990-

( ) Palm Top

FOD NSSO.

DGCI&S

NSS

1982

(NABS)

1998 .. 32

CSO

**9.**

[ ]

, 1930 1960 ..

**9.1**

[ ] :



Banerjea Pramatha Nath  
Basu D.  
Bhattacharya R. N.  
Bhattacharya Nikhilesh  
Bhattacharyya Anil Kr.  
Bose R. C.,  
Bose Subhendu Sekhar  
Chakravarti M. C.  
Chakraborty I. M.  
Chatterjee S. K.  
Chaudhuri S. B.  
Choudhury D. K. Roy  
Godambe V. P.  
Gopaldaswami R. A.  
Gosh B. N.  
Gosh J. K.  
Gosh M. N.  
Huzurbazar V. S.  
Kallianpur Gopinath,  
Laha R. G.  
Lahiri D. B.  
Madhava K. B.  
Mahalanobis P. C.,  
Masani  
Masuyama  
Mathew P. C.  
Minhas B. S.  
Mitra Ashok  
Mitra Sujit Kumar  
Mookerjee R. N.  
Mukherjee M.  
Mukherjee R.  
Murthy M. N.  
Nair K. R.  
Nandi H. K.  
Narain Prem  
Panse Vinayak Govind  
Pant Pitambar  
Parthasarathy K. R.  
Patil G. P.  
Puri M. L.  
Ramamurti B.  
Rao C. R.,  
Rao J. N. K.  
Rao R. Ranga

Rao S. Raja  
Roy J.  
Roy S. N.  
Sen Nikhil Ranjan  
Sen P. K.  
Sengupta J. M.  
Sethuraman J.  
Shirras G. F.  
Sinha Harish Chandra  
Srinivasan T. N.  
Srivastava J. N.  
Subramanian S.  
Sukhatme Pandurang Vasadeo  
Tendulkar S. D.  
Varadarajan V. S.  
Varadhan S. R. S.

1.1.

1.2. (1967, . 1).

3.1.

3.2.

3.3.

2400

3.4.

3.5.

3.6.

3.7.

1899 – 1906

3.8.

3.9.

( . . . 3.6. ):

4.1.

4.2.

5.1.

Rao (1993).

5.2.

5.3.

5.4.

5.5.

- 5.6. S. S. Bose . Kendall & Doig (1968).
- 5.7.
- 5.8.
- 5.9.
- 5.10. (1987).
- 5.11. (1963),
- 6.1.
- 6.2.
- 6.3. ?
- 6.4. § 3.1.
- 6.5. § 6.
- 8.1. 1960 ., 1972 .?
- 8.2. ?
- 8.3.
- 8.4.
- 8.5. 30
- 8.6. :
- 8.7.
- 8.8. ?
- 9.1. (1978, . 209 – 212).

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XIX . . 1. . . . .  
. 184 – 240.

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*Sankhya*, vol. A55, pt. 3, pp. 331 – 349. **S, G**, 82.

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VIII

. . .

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VIII/1. ( . 1, . 108 – 109)

William Emerson, *Miscellanies, or Misc. Treatise Containing Several Math. Subjects*. London, 1776

[...]¹

( . 1 – 48).

1. \_\_\_\_\_

2.

2. \_\_\_\_\_

3. \_\_\_\_\_

4. \_\_\_\_\_

3.

5. \_\_\_\_\_

6. \_\_\_\_\_

1.

4.

2.

5.

3.

6.

1. Cajori (1919, . 192)

[ ]

Taylor (1966, . 34 – 35) , [...]

. [...]

2.

3.

4.

[ ]

5.

6.

Dinges (1983, .88)

**VIII/2. ( 2, . 109 – 110)**

George Louis Leclerc Buffon, *Essai d'arithmétique morale*, 1777.

: *Oeuvr. Philosophiques*. Paris, 1954, pp. 456 – 488.

J. Piveteau et al.

: **S, G**, 16

( )

1

1778,

Gouraud (1848, .54)

1760

2

(

3

( . 4),

(1778, .76)

( .77).

1, 2, 4, ...,  $2^{n-1}$ .

. 85 – 86<sup>4</sup>:

$2^{13} = 8192, [\dots]$  13  
 8192 ,  
 14- . , 6000 <sup>5</sup>,  
 [  $2^{190\,000}$  ]  
 ]. , ,  $2^{2\,189\,999}$  ( . . ,  
 $2^{2\,189\,999} : 1$ ).

$(n + 1):(n + 2)$ , (1969) Zabell (1988 ) ,  
 ,  
 .

1. , Coolidge (1949/1990, .  
 171) ,  
 ,  
 ,  
 :  
 ,  
 . . . .

Booth (1865, . 206). . . .  
 (1733)  
 Roger (1978, . 29). . Sloan (1994). . . .  
 2. § 8  
 1762 . . . .  
 3. Coolidge (1949/1990, . 172) [ ]  
 4. [ ] , . Zabell  
 (1988 ) Coolidge (1949/1990, 13). . . .  
 5. ( ) , .

**VIII/3. ( 3, . 117 – 119)**  
 William Morgan, *Memoirs of the Life of the Rev. Richard Price.*  
 London, 1815

1.

[...] ( .  
 )  
 [ ]  
 ( . 24 – 27) [...]:  
 , ,  
 ,



[vol. 1]. London, pp. 131 – 155.

G. A. Barnard, Biographical note.

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3.

4.

1745 ( 1746) 1767 – 1768 1762  
– 1766

[...]  
[ ]  
Holland (1968, pp. 45 – 46).

**VIII/4.**

87)

Richard Price *On the Importance of Christianity,  
the Nature of Historical Evidence and Miracles.  
Four Dissertations*. London, 1767.

[...]

(1764).

(1748)<sup>1</sup> (c. 389 – 390)

[ ]

100

2.

[...]

395 – 398:

[ (?) ] ,

10

16:17 2:1.  
0,5013, . . .

3

(improbable),

1 400 000

1 600 000.

0,4647, , 0, 4895.

1 600 000

4

1 400 000

0, 5105,

, 1 600 000,

0,5352 [0,5353].

10 11

9:1 11:1,

12:1.

100 110

3:1; , , 1000 1100



2:1.

[...]

5

[ ]

( . 440 – 452 [ 440

– 442])

6

]:

*The improbability that two independent events, each of them not improbable, should both happen, cannot be greater than the odds of three to one; this being the odds that two equal chances shall not both happen, and an equal chance being the lowest event of which it can be said that it is not improbable.*

[...].

(1718/1756, . 6):

7.  
 [...] [0, 1], 8.  
 (1718/1756, . 21)

*being the lowest event* *an equal chance* 1[...].

1. Gillies (1987) Sobel (1987, . 169). Kruskal (1988). Zabell (1988a; 1988b).

2.  
 3. 16:17 16:1.  
 4.  
 5. (1756, . 329). (1718)

6. [...]  
 7.  
 8.

**VIII/5.** ( 5, . 395 – 398)  
 Anton Meyer, Note sur le théorème inverse de Bernoulli.  
*Bull. Acad. Roy. Sci., Lettres et des Beaux-Arts Belg.*,  
 t. 23, No. 1, 1856, pp. 148 – 155;  
*Essai sur une exposition nouvelle*  
*de la théorie analytique de probabilités.* Liège, 1857  
 1856 .

$$\left[ \frac{m_1}{\mu} \pm \frac{\sqrt{2(\mu - m_1)m_1}}{\mu^2} \right], \quad \mu = m_1 + m_2$$

$$\frac{m_1}{\mu} \pm \frac{\sqrt{2(\mu - m_1)m_1}}{\mu^2}$$

$$= \frac{2}{\sqrt{\pi}} \int_0^{\infty} \exp(-t^2) dt \quad (1)$$

1/μ.

$$y = f(x) -$$

$$b^1. \quad y = f(x)$$

$$= \int_a^b y dx \div \int_a^b y dx$$

, ( . 19).

f(x),

( < < | < < b).

( . 20):

$$= y dx \div \int_a^b y dx. \quad (2)$$

$$(\dots + d | \dots < b).$$

$$(\dots 20 - 21):$$

$$z = (x)$$

$$y = f(x) -$$

$$(2).$$

$$i = Pz.$$

$$= \int zydx \div \int_a^b ydx.$$

$$(\dots 21).$$

$$y = [f(x)]^s.$$

$$1/s$$

$$(1)$$

$$m \pm \frac{\dots}{\sqrt{-s[f''(x)/2f(x)]_m}} = m \pm \frac{\dots}{\sqrt{-[d^2 \ln y/2dx^2]_m}}. \quad (3)$$

1.

s.

[ (3)?]

2.

s,

1

s

3.

s =

= m

= 1.

$$(1 - )$$

$$^4 (\dots 28):$$

$$-q$$

$$\mu = p + q$$

$$(1)$$

$$(?)$$

$$\frac{p}{\mu} \pm \sqrt{\frac{2pq}{\mu}}$$

(. 30):

(1 - )

m/s

s

1/s

$$x \pm \frac{1}{\sqrt{s}} \sqrt{2x(1-x)}$$

$$= \frac{2}{\sqrt{s}} \int_0^x \exp(-t^2) dt + \exp(-x^2) \div \sqrt{2sx(1-x)}$$

1.

( )

2.

3.

$$(x)_m = x(x-1) \dots (x-m+1)$$

4.

31-

Keynes (1921).

5.

(1925).

(2013, § 4.2.3).

### VIII/6.

( 6, . 364 – 366)

John Stuart Mill, *System of Logic* (1843).

: , 1872,

1972 .

(*Coll. Works*. Toronto – London, 1974).

. , 2011

1  
.18 .3,  
.25.  
(1814/1999, .835):  
[...]

(1843, § 2)

(1843/1872, § 1),

4, (1843/1872, § 3)

(§ 4)  
5

$N$

$n/N$  ( ,  $n$  - )

(1843/1872, § 3)  
[ ]

1/6,

$$n/N \quad (N-n)/N,$$

(

.)

( 1843/1872, § 4)

[...]

( )

6.

§ 3 (1872, § 5)  
(1814).

(§ 3)

7.

[...]

:

- 1.
- 2.
- 3.

. *Coll. Works* , 1974. . . .

(§ 2)

1846 .

Strong (1978, § 3) [...]. . .

4.

?

5.

( 1843/1872, . 3, . 18, § 3):

Strong (1978, . 34)

25

[ , Venn (1866)]. . .

6.

(1764).

( [ ], 1851 .. . 3, . 18, § 4)

:

[ ],

( [ ]),

(?)

( [ ]),

[

]

(Hume 1739),

(Poisson

1837, § 63)

(Hume 1748).

7.

( , 1814/1999, . 861) ,

Double, Dulong, Larrey, Poisson (1835, . 176 – 177). . .

**VIII/7.**

( **7, . 418 – 419**)

Rudolf Hermann Lotze, *Logik. Drei Bücher*, 1874, 1880, 1912.

Nabu Press, 2010

( . 9, § 282.1) ,

:



(§ 282.4)

, , :

, ,

, P(C|E) ?

, (m + 1):(m + 2),

m

, (. 9, § 282.5)

:

, . . . - .

( ):

, ,

, ,

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**VIII/8.** - - ( **8, . 369 – 370**)  
Mathurin-Claude-Charles Gouraud, *Histoire des probabilités depuis ses origines jusqu'à nos jours*. Paris, 1848. Hachette, 2016

Todhunter (1865, . . )

, , .

, 1. ,

<sup>2</sup> (. 47)

, , ,

( . 61 – 62)

( . 62 – 63)

<sup>3</sup>, ( . 64).

( . 95 – 96),  
Condorcet (1785)

, ,

146): [ !] ( .

, ,

. [...]

(1781 – 1784)

- 1.
2. 1823 ., *Grande Encyclopédie* (1876 .).
- 3.

**VIII/9.** ( 9, .465 – 470)

Morgan William Crofton, Probability.

*Enc. Britannica*, ninth edition, vol. 19, 1885, pp. 768 – 788

( . 768) :

[ ]

769):

$$P_1 N = \sum_{i=1}^n p_i P_i \quad (. 773)$$

$$p_i P_i N = \sum_{i=1}^n p_i C_i$$

$$p_i = p_i P_i \div p_i P_i, \quad (1)$$

$p_i$

$n$

$r$

$$\frac{1}{n} \sum_{k=1}^n r^{k+1} \div \sum_{k=1}^n r^k$$

$$(r+1):(r+2) \quad n$$

(.774)

[...],

( )

[ ]

$$^3 [ ]$$

$$p = \int_0^1 x^m (1-x)^n dx \div \int_0^1 x^m (1-x)^n dx, \quad (2)$$

.. (.774)

(p + q)

(m + n)

$$C_{p+q}^p \int_0^1 x^{m+p} (1-x)^{n+q} dx \div \int_0^1 x^m (1-x)^n dx = C_{m+p}^p C_{n+q}^q \div C_{m+n+p+q+1}^{p+q}$$

Lidstone (1920, § 18)

i

(.191)

[...]

(m + n)

(2)

$$P\left(\frac{|p-m|}{m+n} < \right) \approx \frac{2}{\sqrt{\pi}} \int_0^1 \exp(-t^2) dt, = \frac{(m+n)^{3/2}}{\sqrt{2mn}}$$

§ 4

(.777)

<sup>4</sup>[...].

1/2, (.777)

N 5.

n . -

$$w = \frac{p/n}{p/n + (1-1/n)(1-p)}$$

n (.777)

6.

(.777):

$$w = \frac{pp_1}{pp_1 + (1-p)(1-p_1)} \tag{3}$$

[...] n [ ] 1, 2, ..., n

$$1 \ 2 \ \dots \ n \div [(1 \ 2 \ \dots \ n) + (1 - 1)(1 - 2) \ \dots \ (1 - n)].$$

$$= 9/10$$

1:10<sup>9</sup>.

3/4.

3/4, ..., [ ... ], ..., ,

$$1/2$$

- [ ... ], w -

$$w = \frac{ap}{ap + (1-a)(1-p)}$$

$$w = \dots = 1/2. \quad w \quad (.778)$$

[...].

(3), [ ... ], (1). [ ... ]

$$P(D/A) = w, P(D/B) = w_1, P(D) = a.$$

(.778)

$$p_1 = \frac{(1-a)w_1}{a + w_1 - 2aw_1}$$

w,

$$= \frac{wp_1}{wp_1 + (1-w)(1-p_1)} = \frac{(1-a)ww_1}{(1-a)ww_1 + a(1-w)(1-w_1)}$$

(2), m

$$1/2$$

$$w = \int_{1/2}^1 x^m dx \div \int_0^1 x^m dx = 1 - 1/2^{m+1}$$

$$1/2.$$

(.779)

$m$

$$\frac{pw}{pw + (1-p)(1-w)} = \frac{(2^{m+1}-1)p}{(2^{m+1}-2)p+1}$$

(.779)

- 1.
2. (.773) [?],
- 3.
4. Williamson (1896). . . . 10
5. (1837, § 11) 1/2,
6. (. . . . 460):
- 7.

**VIII/10. ( 10, . 399 – 401)**

John Venn, *The Logic of Chance*. London, 1866; New York, 1962  
( 1888 .)

3 , 2<sup>1</sup> ,

( 1866/1962, . 4)<sup>4</sup>

1)

; 2)

( . 82)

6  
(Donkin (1851),

( . 137):

[ ]

(.138):

.7  
(.6, .109)

:<sup>5</sup> (.185)

[...]

Jaynes (1976, .242)

(1956)

(.196)

(.197)

, (m + 1):(m + 2)

m

(.197)<sup>10</sup>:

11

(.249)

: 1)

2)

(.258)

( .16 17)

. Edgeworth (1884b, . 224)

(1920, . 2)

12

(1928, )

Jaynes (1976, . 242)

:

?

(1921, . 311)

Chrystal (1891),  
(?)

( . 326)

13

Zabell

(1989 ).

1. . Mckenzie (1981, . 236 – 237). . .

2. (Porter  
1986, . 271). . .

2006). . . (



3. [...] Mill (1843/1872, . 3, . 18, § 6)

4. . . . . 1866 .

5. . . . .

Shafer (1982). . . .

6. . 140 . Salmon (1980, . 131 –

132)

7. Salmon (1980, . 133)

8. . . . . § 3 . 2, . 25 – 26. ,

9. [ . . . ] [ . . . ]

. Zabell (1989b). . . . . [.]

10. Keynes (1921, . 30, § 14)  
. Edgeworth (1884b, . 234) ,

11. . . . . (4, . 5). . . .

12. (1827 – 1912), . . . .

13. . . . . –

(1814/1999, . 837, . . . .)

**VIII/11. ( . . . . 11, . 415 – 419)**

William Stanley Jevons, *The Principles of Science. A Treatise on Logic and Scientific Method*, vols. 1 – 2. London, 1874, 1877, 1879. Nabu Press, 2010

. . . . . , 1881; . . . . , 2011

1

Keynes (1921, . 23, § 10),

2.

( )

3. (1877, . 199)

201)

( .

(?), Wilbraham (1854),  
( . 206).

4 ( . 212)

[

].

5

0/0,  
212 – 213):

( .

$n(1-n)$

0 1,

1/2.

$pdp,$

( +  $dp$ ).

[ ]

0 1

1/2.

, 2/8

7/8

(?),

1/2.

Keynes (1921, . 20, § 7)

:

6.

12 ( )

7, . . .

$(H_i|E)$

$P(E|H_i)$

$H_i.$

( . 243):

(.251)

:

4

3

(

?

8

$$(r_i + 1) \div \sum_{j=1}^n (r_j + 1).$$

(.258):

$$(r_i + 1) \div \sum_{j=1}^n [1 + (r_j + 1)].$$

9

1/2

10, (.261)

(.267)

- 1.
- 2.
- 3.

11 (.267)

(1877, .243)

(1921, .16, § 14)

1. FitzPatrick (1960, .53 – 58) Keynes (1936).

2. Zabell (1989b, .299)

3.

Strong (1978, § 6).

4. Keynes (1921, .4, § 4).

5. (Hailperin 1996, .124).

$$\frac{(s-r)}{r/s} \quad p \quad (q-p) \quad , r \quad p/q$$

$$(p+r):(q+s).$$

1/2

---


$$p \quad 0/0.$$

$$(0+r):(0+s) = r/s.$$

(Terrot 1857, .375).

(Boole 1857/1952, .346):

1/2,

0/0.

[...]

0/0

9, .5.

6. ( . . ),

1/2, 1/2,

7. (1877, . 240)

8. Lubbock & Drinkwater-Bethune ( . . 1830, § 52).

9. Horwich (1982, . 122 – 129). . . . 1841 . . . (Werke, Bd. 12, . 201 – 204)

10. 11.

6, .7. . . .

**VIII/12.** ( . . . 12, . 413 – 414)  
Mathieu Paul Hermann Laurent, *Traité du calcul des probabilités*.  
Paris, 1873

( . ix – x).

( . 57):

1, 2, . . . ,  $i$ , . . . –  
1, 2, . . . ,  $i$ , . . .

$q_1, q_2, \dots, q_i, \dots$

$w_i$  (c. 57)

$$w_i = p_i q_i \div (p_1 q_1 + p_2 q_2 + \dots + p_i q_i + \dots)$$

( . 47):

<sup>1</sup>. [...]

( . 107)

$$P(|p - l/s| < l) = \int_{l/(s-1)}^{l/(s+1)} x (1-x)^{s-} dx \div \int_0^1 x (1-x)^{s-} dx$$

2

$$sl/ \quad sl/(s - ) \quad 1/ s$$

$$P = \frac{2}{\sqrt{\pi}} \int_0^t \exp(-t^2) dt.$$

1.

2.

**VIII/13.** ( 13, .480 – 488)

George Chrystal, On some fundamental principles  
in the theory of probability.

*Trans. Actuarial Soc. Edinb.*, vol. 11, pt. 13, 1891, pp. 421 – 439

( .421)

( .422)

( )

1.

2.

3.

( .426)

4.

( )

$N$

$pN$

( .426)

$p$ .

5.

:

$$P(W_3 | W_1, W_2) = \sum_{i=1}^2 P(H_i | W_1, W_2) P(W_3 | H_i).$$

$$i = 1, 2$$

$$P(W_1, W_2, W_3 | H_i) = P(W_1, W_2 | H_i) P(W_3 | H_i).$$

$$: 9/10.$$

( , .428)

), (Crofton 1885, .774).  
6

1 ( .429).

0, 3; 1,2; 2,1; 3,0

. 1/4; 1/4; 1/4; 1/4;  
. 1/8; 3/8; 3/8; 1/8

8 1/2.

2 ( . 430).

1,2; 2,1; 3,0

0, 1 2

. 1/3, 1/3, 1/3  
. 3/7; 3/7; 1/7

3 ( . 431).

2/3, 4/7

– 2  
4 ( . 431).

3,0; 2,1; 1,2

( !)  
( . 431 – 432):  
*M*

*rM*

*pM, qM,*

. 1/3, 1/3, 1/3  
. 1/7, 3/7, 3/7

*p, q, r = 3/6, 2/6, 1/6 1/4, 2/4, 1/4.*

5 ( . 432).



$$7/9 \cdot 2/3 \cdot 4/5$$

(.434):

$$P_1 = 7/9,$$

5,

---



---


$$P_1 = 7/9,$$

(.435)

$$P(E_i|E) = P(E_i|E)P(E_i): [P(E_i|E)P(E_i)], i = 1, 2, \dots, n,$$

$$= \{[P(E_i|E)^2]P(E_i): [P(E_i|E)P(E_i)], i = 1, 2, \dots, n.$$

(.437)

Whitworth (1867/1878, . 151),  
6/7, (. 437)

1/2.

6/7  
]

(. 438)

10

Whittaker (1920)

1 000 001  
1 000 000

(. 167)

(. 169 – 170):

$(n - p)$

$n$

?

1/2.

$$\int_0^1 x^{m+1} (1-x)^n v(x) dx \div \int_0^1 x^m (1-x)^n v(x) dx. \quad (1)$$

$s$

$(s + 1),$   
 $(s + 1)$

$(m + n)$   
 $(m + 1).$

$v(x) -$

$, + dx.$

$v(x) = 1,$

$$(m + 1):(m + n + 2). \tag{2}$$

$$(1) \quad ( \ . 169 - 170 ). \tag{2}$$

*m:(m + n).*  
J. R. Armstrong [

]

: 1)

$$. 2) \quad ( \quad )$$

$$. 3) \quad [ \quad ? ].$$

1  
3

( \ . 199 ).

2)

W. L. Thomson,  
] A. E.

Sprague

( \ . 202 ):

1, 2, \dots,

1,

1.

Govan (1920),

1893 .

3/4.

(6/7).

$$(m + 1):(m + n + 2)$$

(?).

$$(m + n)$$

$m_1$

$n_1$

$m$

$n$

$dp$

(?),

$$\frac{(m_1 + n_1 + 1)!}{m_1!n_1!} p^{m_1} (1 - p)^{n_1} dp.$$

$$\frac{m_1 + n_1 + 1}{m_1 + m + n_1 + n + 2}.$$

2,

(. 220)

:

?

1:2:1,

3:3:1,

(. 223)

:

)

(

[...].

3

(. 223)

:

$$C_{pM}^r C_{qM}^{N-r} = C_M^N p^r q^{N-r} \quad (p+q=1)$$

$$C_{pM}^r C_{qM}^{N-r} \div C_M^N = C_N^r p^r q^{N-r}$$

$$r = pN$$

$$C_N^{pN} p^{pN} q^{qN}$$

$$P = 1 \div \sqrt{2pqN}$$

$$P(x) = P \exp(-x^2/2pqN)$$

$pN$ ,

$$\int_0^{pN} x P(x) dx + \int_0^{qN} x P(x) dx$$

$$\sqrt{pqN/2} [2 - \exp(-pN/2q) - \exp(-qN/2p)]$$

$$\frac{\sqrt{2pqN}}{N}$$

- (1867/1897, . xii) ; ( . xxvi)

- 2. . Boole (1854, . 16, § 3). . . .
  - 3. . . . .
  - 4. (1904, . 2, . 567) . . . .
  - 5. . 569. . . .
  - 6. (1867/1897, . xxix)
7. . . . . Makeham (1892) Govan (1920, . 228)
8. . . . .
9. . . . .
10. Perks (1947, . 286) . . . .

**VIII/14. ( 14, . 470 – 472)**

Johannes von Kries, *Die Principien der Wahrscheinlichkeitsrechnung. Eine logische Untersuchung.* Freiberg i. B., 1886. Tübingen, 1927

[ . . . ]<sup>1</sup>. . . . , . . . .

. . . . . ( . 6):

. . . . .

. . . . . ( . 6):

. . . . .

. . . . . § 3,

. . . . . 2/3,

. . . . . 1/2.

. . . . . 4. . . . .

. 4, § 1, . 77

. . . . .

. . . . . , *contradictio in adjecto*

( . . . . . 5)

. . . . . , *i-* . . . . . *i* . . . . .

+ (6 - *i*) - 0. . . . . +, 0, +.

. . . . . , . . . . ? . . . . . ( . 118)

$p_i \neq p_i$

§ 5

$$\int_a^b (x-x_0)dx \div \int_{-\infty}^{\infty} (x-x_0)dx.$$

. 6

$$n - \frac{(m+n)}{2}$$

$$\frac{m}{n/(m+n)^5}$$

(. 133).

§ 12 . 9 ( )

(. 253).

(. 267)

1657

6:

$b,$

$$(a+b)/2. [...]$$

(. 277),

( )

$n$

$m$

$$[(m/n) - , (m/n) + ] .$$

278).

1. [...] . . .

(von Plato 1994, c. 169).

(Kamlah 1983, . 240).

(1987, c. 110):

Kamlah

2. [...] von Plato (1994)

, Kamlah (1987)

(1983, . 243)

3. ( 10, )

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No. 32265, . 44)

4.

5.

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# IX

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*Elementary Treatise on the Integral Calculus*. New York, 1877, pp. 298 – 340.

1877 .

( . 300),  
 :       $n$

? :

$$M = \frac{1}{n} \int_0^n x(n-x) dx = n^2/6.$$

. 316 ,

. 300:

$r$  :

$$M = \frac{1}{\sqrt{2}} \int_0^{\sqrt{2}} 2r \cos d = 4r/ .$$

, . 300,

$$x^2 - ax + b = 0$$

c

$$a^2 - 4b, \quad b > 0.$$

$$(0, \sqrt{2}/4)$$

$$5/6.$$

$$z = (x, y),$$

. 301.

$z$

:

$$M = \frac{\iint (x, y) dx dy}{\iint dx dy}.$$

∴

∴ 311.

∴ 315. ( )

- ( ) - log x.

( 325):

r.

$$P = \frac{c^3}{r^3} - \frac{9c^4}{16r^4} + \frac{c^6}{32r^6}.$$

∴ c/r.

∴ 322. (m + n)

m p (p + q)

$$P = \frac{(p+q)!(m+p)!(n+q)!(m+n+1)!}{p!q!m!n!(m+n+p+q+1)!}.$$

(1879 – 1889/1936)

(m/n – p/q).

(1914)

(.323).

( + )?

Seneta . (2001)

(1999)

.(1999),

.682.

.(1914), a posteriori.

.2- , .14, 3, .105 – 112.

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2009 . 150-

1959 .

2009 .

2.

XIX .

(hard)

(1865)

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changes gemmules].

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Wilson

(1975).

[ : ],

6

1.

2.

(Johansen 1922/1929, . 355):

3.

4.

5.

6.

, De Vries (1905).



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XI

. . .

, ( )

, .2. , 1923, . 102 – 125

(Seneta 1987, . 246, 253 – 255)  
( )  
(S, G, 6),

, ,  
11 1920 – 1924 .  
( 2009a).

, ,  
1990/2010).  
§ 10

(  
(2009b) 1921 . . . ,  
:  
[...]

, 1914 . (  
2013, § 16.1.3).

2000 . , ,  
www.amitys.com/phpGedview/individual.php?  
4 :

4 1895 .,  
1950 . 1919 .  
14 1921 . ,

1921 .  
 1925 .  
 1923 . ...  
 . . (2009a),  
 . . **S, G**, 35.  
 --- (2009b), . . . 1919 – 1921. . . .  
 . . . . **S, G**, 28.  
 . . (1990), . . . .  
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**. 102 – 104. § 1.**

$$\begin{matrix}
 S \\
 x^{(2)}, \dots, s_k - \\
 N
 \end{matrix}
 ,
 \begin{matrix}
 x^{(k)}, \\
 s_1
 \end{matrix}
 ,
 \begin{matrix}
 x^{(1)}, s_2 - \\
 \dots \\
 S, \\
 S =
 \end{matrix}$$

( N ),

$$= 1/2 [1/(2 - 1/s)]$$

$$= 1/2 \cdot 1/2 = 1/4$$

$$s = (s/2s)(s/(2s - 1))$$

$$P = \lim_{s \rightarrow \infty} P_s, s = \dots$$

**§ 2.**

(1), (2), ..., (k),  
 2, ..., k N

1, 2, ..., N  
 N-

$$E x_1^{h_1} x_2^{h_2} \dots x_N^{h_N} \quad (1)$$

[ ]

(1).

( )

(1)

$h^1$

[...]

( ) [

$h$ ], , [

], [

](

)

[...].

[...](

)

[ ]

. 113. § 5.

$S$

$x^{(1)}, s_2 - x^{(2)}, \dots, s_k$

$x^{(k)}$

$x^{(1)}, x^{(2)}, \dots, x^{(k)}$

$s_1/S, s_2/S, \dots, s_k/S,$

1, 2, ..., k

, ..., N-

2.

120. § 8.

3,

.

.

.

$N$

$N$

[...]<sup>4</sup>.

122, § 9.

5

(1)

. 123 – 124. § 10.

6

( $Q^2$ )

(

),

(  
[...])

[

],

1.

2.

$$Q^2 = 1.$$

$$F(1, 2, \dots, N) \quad (1, 2, \dots, N)$$

$$F =$$

1. Tchouproff Al. A. (1923).

$h$

2. (1918, . 216 – 219).

3.

( )

4.

5. Bortkiewicz (1917, c. 3): Die an der Wahrscheinlichkeitstheorie orientierte [...] Betrachtung empirischer Vielheiten möge ich Stochastik(von zielen, mutmaßen) bezeichnet werden. (

6. (1922).

(1968),

(Tchouproff) . . (1918, . ),

(1968, . 138 – 224).

--- (1922, . ),

? (1960, . 239 – 258).

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