111.

allo- β -Amyrenonyl acetate, 531.

Analgesics, synthetic, 261, 265, 267, 269.

allo- β -Amyrin acetate, 531.

3:6-Anhydrogalactose, 229.

a-cyano-, 323

a-cyano-, 323.

nitro-, 317.

4:6-diamino-5-2':5'-dichloro-, 656.

Annual General Meeting, 158.

d-Araboascorbic acid, 227.

a-Amyrin, dehydration of, with phosphoric oxide, 28.

 β -Amyrin, conversion of, into $iso \cdot \beta$ -amyradienonol, 527.

Anhydro-4-aminobenzyl alcohol, dry distillation of, 111.

Anhydro-4-amino-1-hydroxymethylnaphthalene, 111.

of, with cobalt, cupric, and ferric chlorides, 18.

2-Anilinohydroxymethyl-4:5-dihydrothiazole, 151.

Anisole, cleavage of, by Grignard reagents, 462.

Antibacterials, from Aspergillus clavatus, 415.

Antiplasmodial action, constitution and, 334.

Antimalarials, attempts to find, 615, 619.

Anionotropic rearrangement, kinetics of, 436, 443.

Anhydro-4-aminodimethylbenzyl alcohols, dry distillation of,

Anhydro-4-amino-3-methylbenzyl alcohol, dry distillation of,

Aniline, $m \cdot$ and p-nitro-, diazotised, catalytic decomposition

a-p-Anisyl- β -(2-bromo-3:4:5-trimethoxyphenyl)acrylamide, 323. a-p-Anisyl- β -(2-bromo-3:4:5-trimethoxyphenyl)ethylene,

4-Anisyl-2-methylpyrrole-3-carboxylic acid, ethyl ester, 485.

 β -Anisylpropionic acid, α -cyano, ethyl ester, and hydrazide,

 α -p-Anisyl- β -(2-nitro-3:4:5-trimethoxyphenyl)ethylene,

2:3-Anhydro-β-methyl-d-taloside, and its derivatives, 523.

A.

N-Acetomethyl-m-4-xylidide, physical constants of, 410. Aceto-2-naphthalide, 1-bromo-4-nitro-, 386. β -Acetonaphthone, ω -amino, hydrochloride, 485. Acetone, quinolylhydrazones, 618. vapour, photodecomposition of, in presence of inert gases. Acetone glucosaccharic acid, derivatives of, 67. Acetophenone, p-bromo-, and p-cyano-, hydrazones, 613. α -Acetyl-p-bromobenzyl cyanide, 613. Acetyl-1:2:5:6-dibenzfluorene, and its oxime, 557. 1-Acetyl-3:4-dihydronaphthalene, and its semicarbazone, 505. Acetylene, reaction of, with hydrogen, catalysed by metals, 373. Acetylenyl glycols, 136. N-Acetyl-5-methoxyanthranilic acid, 3-nitro, 622. 4-Acetyl-4-(2'-methoxyphenyl)-1-methylpiperidine, and its picrate, 264.
3-Acetyl-6'-methoxyrubanol, 335. 1-Acetyl-9-methyl- Δ^1 -octalin, and its derivatives, 506. 5-Acetylsulphanilamido-2:3-dimethylindole, 632. 3-Acetylsulphanilamidoethylindole, 632. 3-Acetylsulphanilamidoindole, 632. Acids, monocarboxylic, dissociation constants and strengths of, in aqueous acetone and aqueous sucrose, 411. heterocyclic, iron derivatives of, 25. long chain, with quaternary carbon atom, 152. Acridines, antiseptic activity and reduction potentials of, 360. Acridones, conversion of, into acridines, 679. Acrylonitrile, spectrum of, vibrational, 597. Activation energy, isodielectric, calculation of, 443. Address, presidential, 340. Adipic acid, a-cyano-, ethyl ester and hydrazide, 14. Adsorption, mechanism of, 477. Ajacine, 108. Aldehydes, parachors of, 380. 2'-Aldehydodiphenyl, 2-bromo-, and its derivatives, 73. Aleuritic acid, yield of, from shellac, 306. Alkyl phosphates, sulphates, and sulphites, parachors of, 385. mono. and di-sulphides and thiols, parachors of, 383. 2-Alkyl-1:4-naphthaquinones, 3-hydroxy-, 55. Aluminium chloride, action of, on phenyl ethers, 330. isomerisation of aromatic ketones with, 232. Amines, aliphatic, primary and secondary, reagent for, 314. aromatic, nuclear methylation of, 109. diazotised, reaction of, with cuprous oxide, 112. molecular compounds of, with sulphur dioxide, 243. reaction of, with halogenated unsaturated compounds, 371. Amino-acids, synthesis of, from substituted cyanoacetic esters, 13.

isoAmyl alcohol, adsorption of, at air-water surfaces, 252.

a-Amyradienol, dehydration of, with phosphoric oxide, 28.

 β -Amyratrienol, and bromo-, and their derivatives, 533.

 β -Amyrenonyl esters, oxidation products of, 256.

β-n-Amyl-β-n-heptylbutyric acid, and its derivatives, and

2-isoAmylnaphthalene, 1:3-dihydroxy-, and its derivatives, 55.

 β -Amyradienonyl acetate, conversion of, into allo- β -amyrenonyl

 β -Amyratrienyl acetate, conversion of, into β -amyradiendionyl

a-Amino-acids, synthesis of, 666.

a-cyano-, ethyl ester, 154.

a-Amyradiene, dichloro-, 30.

l- α -Amyradiene, 28.

a-Amyradienone II, 30.

α-Amyradienone III, 30.

acetate, 527.

acetate, 532

2-n-Amylaminopyridine, and its picrate, 249.

iso-β-Amyradienonol, and its acetate, 532.

esters, oxidation products of, 256.

 $d \cdot \text{ and } l$ - α -Amyratrienes, 28, 30:

Aromatic compounds, sulphonation of, by sulphur trioxide, 649.

Aryldiazonium cobaltinitrites, decomposition of, 22.

Aspergillus clavatus, antibacterial from, 415.

Atmosphere, ozone concentration in, measurement of, 1.

Atomic theory, old and new, 340.

Axerophthal, 410.

Azobenzene 2:2'-di(methylsulphide), 422.

Azobenzene-2:2'-disulphinic acid, sodium salt and dimethyl ester, 422.

Azo-compounds, from o-nitrothiophenol and its methyl ether, 421.

1:1'-Azonaphthalene, 4:4'-dinitro-, 16.

Azoxybenzene 2:2'-di(methylsulphide), 422.

Azoxysulphones, 368.

Azoxybenzene 2:2'-di(methylsulphide), 422. Azoxysulphones, 368. В. Balance sheets, 162. Barbituric acids, reaction of, with phosphorus pentasulphide, Belmacamda sinensis, constituents of, 307. Belmacamdin, 307. Belmacamgenin, 307. Benzaldehyde, Tiemann-Reimer reaction with, 74. Benzaldehyde, p-amino-, preparation of, 4. Benzene, chloro-, sulphonation of, by sulphur trioxide, 469. dichloronitro derivatives, inhibition of resonance in, 404. 4-Benzeneazo-2-bromo-1-naphthol, 539. 1-Benzeneazo-4-cyano-2-hydroxynaphthalene, 540. Benzeneazomalononitrile, p-chloro, and p-nitro, 317. 5-Benzeneazo-2-methylpyrimidine, 4:6-diamino, and 4:6-diamino-5-p-chloro and -5-p-nitro-, 317. 5-Benzeneazo-4-methylpyrimidine, 2:6-dihydroxy-5-p-chloro-, 317. 5-Benzeneazopyrimidine, 4:6-diamino-5-p-chloro- and -5-p-

cyanine bromide, 485.

Bis-2-(4-carbethoxy-3-phenyl-5-methylpyrryl)methane, 485.

aa-Bis-(β' -chloroethyl)phenylacetonitrile, 266.

Benzenediazo-N-bromocarbonamide, p-nitro-, hydrobromide, Bis-2-(4-carbethoxy-3-phenyl-5-methylpyrrole)trimethin-5-Benzenesulphonamidothiazole, 5-p-amino-, 103. Benzenesulphonyl chloride, m-nitro, preparation of, 482. 1:2-Benzfluorene, 3-hydroxy-, 559. 2:3-Benzfluorene, 1-hydroxy-, and its derivatives, 56, 57. 1:2-Benzfluorenol, 3-hydroxy-, acetyl derivative, 559. 1:2-Benzfluorenone, 3. hydroxy., and its acetyl derivative, 559. 3:4-Benzfluorenones, 450. 3:4-Benzfluorenone-7-carboxylic acid, 452. 3:4-Benzfluorenone-8-carboxylic acid, 451. Benziminazole, derivatives of, 274. Benzcyclooctatetraenes, 71, 73. Benzofuran, derivatives, synthesis of, 261. Benzoic acid, dissociation constant of, in aqueous acetone and aqueous sucrose, 411. Benzoic acid, o-, m-, and p-hydroxy-, and their alkyl ethers, thermodynamic dissociation constants of, 19. Benzo-1-naphthalide, 2-chloro-, 538. Benzo-2-naphthalide, 4-bromo-, and 4-chloro-, 539. 4-nitro-, 386. Benzophenone, dehydrogenation by, photochemically, 67. p-Benzoquinone, constitution of, and magnetic susceptibility, dehydrogenation by, photochemically, 67. 1-Benzoyl-1:2-dihydroquinaldinonitrile, 1-o- and ·m-nitro·, 327. Benzoyldiphenylbromomethane, action of Grignard reagents β-Benzoyl-α-phenylpropionitrile, 5-amino-2:4-diphenylpyrroles from, 126. β -Benzoylpropionic acid, β -4-hydroxy-, 552. Benzpinacols, photochemical formation of, 67. Benzthiazole, derivatives, reactions of, 11. Benzthiazole, 1-thiocyano-, reactions of, 11. Benzthiazyl-1-thioncarbamic acid, ethyl and methyl esters, 13. Benzyl alcohol, 4-amino-, dry distillation of, 111. Benzylamine-4-carboxylic acid, preparation of, 678. α-Benzyldeoxybenzoin, 4:4'-dibromo, 615. Benzylidenebisformamide, m- and p-nitro-, 648. Benzylidene glucosaccharic acid, diethyl ester, 67. Benzylidenemalonic acid, 4 hydroxy, acetyl derivative, ethyl ester, 552. δ-Benzylmethylamino-α-benzylvaleric acid, α-cyano-, ethyl ester, 271. γ -Benzylmethylamino- α -phenylbutyric acid, α -cyano-, ethyl ester, 270. γ -Benzylmethylamino- α -phenylbutyronitrile, and its reineckate, δ-Benzylmethylamino-a-phenylvaleric acid, a-cyano-, ethyl ester, 270. δ-Benzylmethylamino-α-φ-tolylvaleric acid, α-cyano-, ethyl ester, 271. 3-Benzyl-1-methylpiperidine-3-carboxylic acid, ethyl ester, 271.

2-Benzyloxybenzaldehyde, azlactone of, 263. 2-Benzyloxyphenylacetonitrile, 263.

2-Benzyloxyphenylpyruvic acid, 263.

chloride, 264.

bromide, 484.

4-(2'-Benzyloxyphenyl)-1-methylpiperidine-4-nitrile

α-Benzyl-γ-phenylacetoacetic acid, ethyl ester, 57.

Bis- β -aminoethylsulphone dihydrochloride, 7. αa -Bis-(β' -bromoethyl)phenylacetic acid, 268.

(+)Bis-α-carbethoxybenzyl sulphite, 90.

phenyltrimethincyanine bromide, 485.

trimethincyanine bromide, 484.

methincyanine bromide, 484.

methincyanine bromide, 484.

methincyanine, 485.

trimethincyanine bromide, 485.

trimethincyanine bromide, 485.

Bis- β -aminoethyl sulphoxide, and its dihydrobromide, 7.

-)Bis-α-carbethoxybenzyl hydrogen phosphite, 88.

Bis-2-(4-carbethoxy-3-phenyl-5-methylpyrrole)-a-isobutenyl-

Bis-2-(4-carbethoxy-3-phenyl-5-methylpyrrole)- α -p-methoxy-

Bis-2-(4-carbethoxy-3-phenyl-5-methylpyrrole)-a-methyltri-

Bis-2-(4-carbethoxy-3-phenyl-5-methylpyrrole)-α-phenyl-

Bis-2-(4-carbethoxy-3-phenyl-5-methylpyrrole)-a-phenyl-

Bis-2-(4-carbethoxy-3-phenyl-5-methylpyrrole)-a-2'-naphthyl-

Bis-2-(4-carbethoxy-3-phenyl-5-methylpyrrole)-a-ethyltri-

Bis-(2-chlorocyclohexyl) sulphite, 119. N'N''-Bis-(p-chlorophenyl)-N-(γ -diethylaminopropyl)guanidine, and its salts, 534. Bisdimethoxyindone, 367. $\alpha\beta$ -Bis(dimethylamino)propionic acid, ethyl ester, and its salts, Bis-2-(3:5-dimethylpyrrole)- α -phenyltrimethincyanine bromide, 485. Bisdinaphthaxanthen, 70. Bis-2-(3:5-diphenylpyrrole)methincyanine bromide, 484. Bis-2-(3:5-diphenylpyrrole)-a-methyltrimethincyanine bromide, 484 Bis-2-(3:5-diphenylpyrrole)-α-phenyltrimethincyanine bromide, $\alpha\alpha$ -Bis-(β' -ethoxyethyl)phenylacetonitrile, 268. $\alpha\alpha$ -Bis- $(\beta'$ -hydroxyethyl) phenylacetonitrile, 266. ethers, action of halogen hydrides on, 267. aa-Bis- $(\beta'$ -hydroxyethyl)-o-tolylacetonitrile, 267. Bishydroxyindone, constitution of, and its reactions, 366. Bisdihydroxytetraphenylethane orthosilicate, 81. Bis-1:3-indanedione. See Bishydroxyindone. aa-Bis- $(\beta'$ -methoxymethoxyethyl)phenylacetonitrile, 266. Bis-[2-methyl-3-indole]- β -carbethoxy- α -methyltrimethincyanine bromide, 487. Bis-[2-methyl-3-indole]- β -carbethoxy- α -phenyltrimethincyanine bromide, 487. $\textbf{Bis-[2-methyl-3-indole]-} \textbf{a-methyltrimethincyanine} \quad \text{sulphate,}$ Bis-3-[2-methylindole]trimethincyanine sulphate, 487. Bis-(N-pantoyl- β -aminoethyl) sulphides, 7. Bis(phenyl-p-bromophenyl-p-dimethylaminophenylphosphine)palladium, dichloro-, 283. ${f Bis}({f phenyl-p-bromophenylethylphosphine}) {f palladium}, \ dichloro-,$ Bis-(4-phenyl-1-methylpiperidyl-4-methyl)amine, 265. Bis-2-(3-phenyl-5-methylpyrrole)- α -phenyltrimethincyanine bromide, 485. $\alpha\alpha$ -Bis-(β' -vinyloxyethyl)phenylacetonitrile, 266. aa-Bis-(\beta'-vinyloxyethyl)-o-tolylacetonitrile, 267. Boron trifluoride, catalytic action of, 301. Bromine: Hydrobromic acid, reaction of, with (-)phenylalkylcarbinols, a-Bromo-ketones, action of Grignard reagents on, 462. n-Butane-1:3-diol, derivatives of, 300. 1-tert.-Butylcyclohexanol, 601. 2-Butylnaphthalenes, 1:3-dihydroxy, and their diacetyl derivatives, 55. β-n-Butyl-β-n-nonylbutyric acid, and its derivatives, and α-cyano-, ethyl ester, 154. hydro-Calycanthus floridus, sterols of, 336. (-)- α -Carbethoxybenzyloxyphosphorus dichloride and dihydrogen phosphite, 87. 3-Carbethoxycyanomethyleneamino-2-phenyl-1-ethylindole, (2-Carbethoxy-3-indolylmethyl)malonic acid, 5-bromo-, and its esters, 627. 3-Carbethoxy-4-phenyl-2-methylpyrrole-5-aldehyde, 485. [4-Carbethoxy-3-phenyl-5-methyl-2-pyrrole]-[4-dimethylamino-benzene]-α-methyltrimethincyanine bromide, 489. Bis-2-(4-carbethoxy-3-phenyl-5-methylpyrrole)methincyanine 4-Carbethoxy-3-phenyl-3-methyl-2-pyrrole]-[4-dimethylaminobenzene]trimethincyanine bromide, 489. $\hbox{$2$-(3-Carbethoxy-4-phenylpyrrole)-$2'-(3'-carbethoxy-4'-phenyl-phen$ 5'-methylpyrrole)methincyanine bromide, 485.

2-Carbethoxyskatole, and 1-hydroxy-, 628.

 β -Carboxymethoxypropionic acid, and its derivatives, 301.

nickel, for reaction of acetylene with hydrogen, 373.

Catalysts, copper and ferric chlorides as, for Sandmever

Cathodes, mercury dropping, quinaldinic acid reduction at, 427.

Carbothialdines, constitution of, 147.

reaction, 393.

Cell or Cells, electrochemical, for dielectric constant measure-1:6-Dibenzoyl sorbitol, 60. ment, 467. 2-Cetylaminopyridine, and its picrate, 249. Chelidamic acid, ferric complexes of, 25. Chemotherapy in tropical medicine, 351. Chlorine, reaction of, with nitric oxide, 388. Cholestanyl hexahydrobenzoate, 337. Chondrosamine, derivatives of, 272. Chrysene, condensation of, with succinic anhydride, 329. β -(4- or 5-Chrysenoyl) propionic acid, 329. Cinnamic acid, dissociation constant of, in aqueous acetone and aqueous sucrose, 411. Clavatin, preparation and properties of, and its derivatives, 417. Clock, laboratory, 113. Cobalt chloride, catalytic decomposition of diazonium salts with, 18. Colchicine, and its derivatives, 323, 325. purification of, by chromatography, 677. Constitution, antiplasmodial action and, 334. molecular volume and, 380. Copper chlorides as catalysts in Sandmeyer reaction, 393. Cuprous oxide, reaction of, with diazotised amines, 112. Crotonaldehyde, condensation of, with 2-methylvinylacetylene and with vinylacetylene, 140. Cyanine dyes, 670. Cvanogen :-Hydrocyanic acid, anhydrous, dielectric constant of, 77. studies on, 647. D. Deca-3:7-dien-5-yn-2:9-diol, 144. Deca-3:8-dien-5-yn-2:7-diol, 144. Deca-3:5:7-trien-1-yn-9-ol, 136. Deca-4:6:8-trien-1-yn-3-ol, 136. Dec-2-en-5-yn-4:7-diol, and its derivatives, 143. Dec-3-en-5-yn-2:7-diol, 143. • Dehydrodiferulic acid. See 1:4-Di-(3'-methoxyphenyl)butane-2:3-dicarboxylic acid, 1:4-dihydroxy-1:4-di-4'-hydroxy-. Delpheline, constitution of, and its acetyl derivative, 665. Delphinium alkaloids, 108, 665. Deoxybenzoin, 4:4'-dibromo-, and its semicarbazone, 614. 2:6-Diacetyl 4- α -acetoxyethyl β -methylglucoside 3-nitrate, 494. 4:4'-Diamidino-αβ-dicthylstilbene dihydrochloride, 614. 4:4'-Diamidino-γδ-dipheryl-n-hexane isethionate, 613. trans-4:4'-Diamidino-a-ethyletilbene, 614. 4:4'-Diamidino- α -methylstilbene dihydrochloride, 614. $\beta\beta$ -Di-n-amylbutyric acid, and a-cyano-, ethyl ester, 153. N'N''-Dianisyl-N-(γ -diethylaminopropyl)guanidine, and salts, 534. Dianisylmethylisothiourea, 534. Dianthranol, preparation of, 307. Dianthraquinone, preparation of, 307. 2:4-Diarylpyrroles, 126. Diazoaminobenzene, 4:4'-dinitro, preparation of, 398. syn- and anti-Diazocyanides, aromatic, structure of, 395. 1-Diazo-2-naphthol, 4:5-dinitro-, 9. 2-Diazo-1-naphthol, 6-bromo-, 10. Diazonium compounds, catalytic decomposition of, 18. Diazonium groups, replacement of, by nitro-groups, 22. Diazotates, structure of, 368. NN'-Dibenzenesulphonyltetramethylenediamine, NN'- $di' \cdot p$ nitro-, 248. 1:2:5:6-Dibenzfluorene, amino-9-bromo-, 3-hydroxy-, and 1:2:6:7-Dibenzfluorene, and 9-bromo., 559.

1:2:5:6-Dibenzfluorenesulphonic acid, 557.

and its derivatives, and nitro-, 557.

1:6-Dibenzoyl dimethylene sorbitol, 60.

1:6-Dibenzoyl methylene mannitol, 60.

1:2:5:6-Dibenzfluorenyl-9-acetic acid, and its methyl ester, 557.

3-Dibenzoylmethyleneamino-2-phenyl-1-ethylindole, 675.

derivatives, 557.

1:2:6:7-Dibenzfluorenol, 559.

Dibenzoyl thioether, dinitro-, 7

aa-Dibenzylacetic acid, a-cyano-, ethyl ester, and hydrazide, Dichelidamatoferric acid, and its salts, 26. Dichelidamatohydroxoferrates, 27. Dichelidamato-oxyferric acid, salts, 27. 1:4-Di-(3':4'-dimethoxyphenyl)butane-2:3-dicarboxylic acid, 1:4-dihydroxy-, dilactone, and 6:6'-dinitro-, 537. Dielectric constants of organic molecular compounds, 464. p-Diethylaminobenzaldehyde, p-di- β -chloro-, $\hat{4}90$. β-Diethylaminoethylaniline, and its salts, 622. 9- β -Diethylaminoethylharmine, and its hydrochloride, 622. β-Diethylaminoethylmethylaniline, and its dipicrate, 622. 7-Diethylaminoheptan-2:4-dione, 617. $(\epsilon$ -Diethylamino- β -pentyl)aminoanisoles, amino- and nitroderivatives, 275. 11- $(\epsilon$ -Diethylamino- β -pentyl)aminolupinane, anditstri. picrolonate, 276. 1- $(\epsilon$ -Diethylamino- β -pentyl)-5-methoxybenziminazole, and its picrate, 276. 1- $(\epsilon$ -Diethylamino- β -pentyl)-6-methoxybenziminazole, and its dipicrolonate, 274. 1-(c-Diethylamino-β-pentyl)-5-methoxy-2-methylbenziminazole, and its dipicrate, 276. 1- $(\epsilon$ -Diethylamino- β -pentyl)-6-methoxy-2-methylbenziminazole, and its dipicrolonate, 276. p-Diethylaminophenyldithiocarbamic acid, p-diethylaminophenylammonium salt, 151. y-Diethylamino- α -phenyl- α -ethylbutyronitrile, 265. 2-p-Diethylaminostyryl-3:4-dihydro-3-quinoxalone, 2-p-dichloro-, methosulphates, 492. 2-p-Diethylaminostyryl-3:3-dimethylindolenine, 2-p-di- β chloro-, methiodide, 491. 2-Diethylaminostyryl-4-methyl-3:4-dihydroquinoxalone, 2-di- β -chloro-, methochloride, 492. **2-Diethylaminostyrylpyridine**, $2-p-di-\beta$ -chloro-, ethiodide, 491. 2:6-Diethyl-p-cresol, 332. 5:5-Diethyl-2:4-dithiobarbituric acid, and 4- and 6-imino., 125. Diethyldifluorosilane, 455. $\alpha\beta$ -Diethylstilbene, 4:4'-dicyano-, 613. 5:5-Diethyl-2:4:6-trithiobarbituric acid, 125. $\beta\beta$ -Di-n-heptylbutyric acid, and its derivatives, and a-cyano., ethyl ester, 154. Dihydroclavatin phenylhydrazone, 418. Dihydroeuphol, and its esters, 251. Dihydro-a-euphorbol, and its derivatives, 252. Dihydromyrcene, chlorides, 120. halogenation of, 114. Dihydromyrcene, bromo-, 120. nitro-, 123. ar-Dihydro-2-methoxynaphthalene, 434. 9:10-Dihydrophenanthrene, 2-benzoyl derivative, and its derivatives, 560. Dihydropyrethrolone methyl ethers and semicarbazones, 645. 3:6-Dihydro-m-xylene, and its derivatives, 435. Dimethoxyadipic acid, 4:5.dichloro-2(or 3)-hydroxy-, methyl ester, 584. 2:3-Dimethoxybenzaldehyde, azlactone, 264. 6:7-Dimethoxy-1-(3':4'-dimethoxyphenyl)-1:2-dihydronaphthalene-2:3-dicarboxylic acid, and its anhydride and methyl ester, 537. 3:4-Dimethoxy-5-ethyl-7:8-dihydronaphthalene, 1-chloro-, 508. 3:4-Dimethoxy-13-ethyl-5:6:7:8:9:10:13:14-octahydrophenanthrene, and 1-chloro-, 509. 1:4-Di-(3'-methoxyphenyl) butane-2:3-dicarboxylic acid, 1:4-di-hydroxy-1:4-di-hydroxy-, derivatives of, 536. γ-3:4-Dimethoxyphenylbutyric acid, preparation of, 508. γ -4:5-Dimethoxyphenylbutyric acid, γ -2-chloro-, 508. $\gamma\gamma$ -Dimethoxy- α -phenylbutyric acid, methyl ester, 551. 4-(2':3'-Dimethoxyphenyl)-1-methylpiperidine, and its picrate, 1:2:5:6-Dibenz-9-fluorenol, and 3- and 7-hydroxy-, acetyl 4-(2':3'-Dimethoxyphenyl)-1-methylpiperidine-4-nitrile, 264. $\beta \dot{\beta}$ -Dimethylacrylic acid, α -bromo-, ethyl ester, 372. 1:2:5:6-Dibenzfluorenone, amino-, 3-hydroxy-, and 7-hydroxy-, Dimethyladenines, 321.

> 1-Dimethylaminocyclohexane, 2-isonitroso-, 315. β-Dimethylamino-2-hydroxy-4-methoxypropiophenone, and its 2-acetyl derivative, hydrochlorides, 262.

> α -Dimethylamino- $\beta\beta$ -dimethylacrylic acid, ethyl ester, hydro-

4-Dimethylamino-4'-acetamidochalkone, 622.

chloride, 373.

```
β-Dimethylamino-2-hydroxy-4-methoxypropiophenone,
 a-bromo-, and its 2-acetyl derivative, hydrobromides, 263.
2-Dimethylaminomethyl-6-methoxycoumaranone, salts, 263.
p-Dimethylaminophenyl-p-tolylazoxysulphone, 370.
2-\beta-Dimethylaminopropionyl-5-methoxyphenoxyacetic
                                                        acid.
  and its ethyl ester, hydrochlorides, 263.
```

4:6-Dimethyl 2:3-anhydro-\beta-methyl-d-taloside, 524. 2:3-Dimethyl d-araboascorbic acid, 227. 5:6-di-p-nitrobenzoyl derivative, 228.

3:5-Dimethylbenzophenone, 235.

2:3-Dimethyl 4:6-benzylidene α - and β -methyl-d-idosides, 524.

 β -($\beta\beta$ -Dimethylbutyramido)- α -phenylethanesulphonic acid. β - $\alpha\beta$ ·dihydroxy-, sodium salt, 96.

2:4-Dimethyldeca-2:7-dien-5-yn-4:9-diol, 147.

2:4-Dimethyldec-2-en-5-yn-4-ol, 146.

2:4-Dimethyldec-3-en-5-yn-2-ol, 147.

2:5-Dimethyl 4-deoxyglucosaccharic acid, and its amides and methyl ester, 516.

2:5-Dimethyl 4-deoxyglucosaccharo-3:6-lactone, and its 1-methyl ester, 516.

2:5-Dimethyl 4-deoxymannosaccharic acid, diamide, 224.

16:17-Dimethyldibenzanthrone, 99.

6:15-Dimethylisodibenzanthrone, 100.

5:6-Dimethyl diethylidene sorbitol, 520.

5:6-Dimethyl dimethylene sorbitol, 520.

Dimethyldiveratrocopyrine methosulphate, 617.

Dimethyldiveratrocopyrocyanine, 617.

Dimethylene d- and l-arabonic acids, amides and methyl esters, 521.

Dimethylene glucosaccharic acid, and its derivatives, 63. dimethyl ester, 67.

Dimethylenetetrahydroxy- $\Delta^{1:5}$ -hexadiene, 157.

Dimethylene l-idosaccharic acid, and its derivatives, 64.

2:3:4:5-Dimethylene mannitol, and its derivatives, 61.

2:3:4:5-Dimethylene mannitol, 1:6-diamino-, and its derivatives, and 1:6-dichloro-, 155.

Dimethylene mannosaccharic acid, dimethyl ester, preparation

Dimethylene mannosaccharodimethylamide, 61.

Dimethylene saccharic acids, and their derivatives, epimerisation of, 61.

1:3:2:4-Dimethylene sorbitol, and its derivatives, 520.

2:3:4:5-Dimethylene sorbitol, and its derivatives, 60.

Dimethylene l-xylonic acid, amide and methyl ester, 521.

2:3-Dimethyl d-erythronic acid, amide, 228.

2:5-Dimethyl 4-glucosaccharo-3:6-lactone, and its 1-methyl ester, 510, 642.

3:4-Dimethyl glucose, synthesis of, 496.

Dimethyl- Δ^2 -cyclohexenones, derivatives of, 435.

4:7-Dimethyl-α-hydrindone, preparation of, 235. 2:9-Dimethylhypoxanthine, 322.

2:5-Dimethyl Δ^4 -mannosaccharolactone, and its 1-methyl ester, 217, 583.

2:5-Dimethyl 2-methylglucofururonoside 3:6-lactone. See Trimethyl glucurone.

2:4-Dimethyl β -methylglucoside, preparation of, from β -methylglucoside tetranitrate, 499.

synthesis of, and its derivatives, 492, 495.

3:4-Dimethyl β -methylglucoside, and its acyl derivatives, 498. 2:6-dinitrate, 501.

preparation of, from β -methylglucoside tetranitrate, 499. [3:5-Dimethyl-2-pyrrole]-[4-dimethylaminobenzene]- α -methyltrimethincyanine bromide, 489.

[3:5-Dimethyl-2-pyrrole]-[4-dimethylaminobenzene]- α -phenyl-trimethincyanine bromide, 489.

Dimethyl-α-tetralones, preparation of, 235.

N-Dimethyl-m-xylidines, inhibition of resonance in, 408.

+)Di-p-octyloxyphosphorus chloride, 87.

Diphenylacetic acid, dissociation constant of, in aqueous acetone and aqueous sucrose, 411.

5:7-Diphenyl-4-azahydrindene methiodide, 621.

Diphenylazoxysulphone, 370. o-Diphenylbenzene-2:2"-dicarboxylic acid, 72.

a δ -Diphenylbutane, β -chloro- β -nitroso-, photolysis of, asymmetric, 452.

Diphenyl-n-butan-2-ols, di-p-bromo-, 614.

 β -($\beta\beta$ -Diphenylbutyramido)ethanesulphonic acid, $\beta \cdot \alpha \gamma \cdot di$ hydr-

dl- $\beta\dot{\beta}$ -Diphenyl- γ -butyrolactone, dl- α -hydroxy-, 96.

Diphenyl-2'-carboxylic acid, 2-iodo-, athyl ester, preparation

a:o-Diphenylcinnamic acid, di-o-bromo., 73.

N'N''-Diphenyl-N-(γ -diethylaminopropyl)guanidine, and its salts, 534. 3:4-Diphenyl-2:5-diketo-n-hexane, 3:4-dicyano-3:4-di-p-bromo-,

613.

aa-Diphenylethylene, reaction of, with phenanthraquinone, 387.

Diphenyldifluorosilane, 456.

Diphenylguanidine, derivatives of, 534.

1:1-Diphenylhept-4-en-2-yn-1:6-diol, 144. 1:1-Diphenylhept-5-en-2-yn-1:4-diol, 143.

 $\gamma \delta$ -Diphenyl-n-hexane, di-, tetra-, and hexa-bromo-, and 4:4'dicyano-, 613.

3:4-Diphenyl-n-hexan-**3-o**l, **3:4**-di-p-bromo-, 615.

1:2-Diphenylindole, and 3-nitroso-, 674.

 $(1:2-Diphenyl-3-indole)(1-ethyl-2-benzthiazole)-\alpha-azadimethin$ cyanine iodide, 676.

 $(1:2-Diphenyl-3-indole)(1-methyl-2-pyridine)-\alpha-azadimethin$ cyanine iodide, 676.

 $(1:2-Diphenyl-3-indole)(1-methyl-4-pyridine)-\alpha-azadimethin$ cyanine iodide, 676.

(1:2-Diphenyl-3-indole)(1-methyl-4-quinoline)-a-azadimethincyanine iodide, 676.

 $(1:2-Diphenyl-3-indole)(1:3:3-trimethyl-2-indolenine)-\alpha-azadi$ methincyanine iodide, 676.

Diphenylmethanes, dehydrogenation of, photochemically, 67. 2-Diphenylmethylpyrrole, 485

[5-Diphenylmethyl-2-pyrrole]-[4-dimethylaminobenzene]- α methyltrimethincyanine, 489.

aa-Diphenylpropaldehyde, β -hydroxy-, 96.

1:2-Diphenyl-n-propan-2-ol, 1:2-di-p-bromo-, 614.

2:4-Diphenylpyrrole, 5-amino-, acyl derivatives, 126.

Dipicolinatohydroxoiron, di-4-chloro-, 26.

 $\alpha\beta$ -Dipiperidinopropionic acid, ethyl ester, 372.

NN'-Disulphanilyltetramethylenediamine, and its diacety! derivative, 248.

2:6-Ditosyl 3:4-acetone α -methylgalactoside, 231.

2:3-Ditosyl 4:6-benzylidene β -methylgalactoside, 524.

2:6-Ditosyl a-methylgalactopyranoside, 230.

2:6-Ditosyl a-methylgalactoside, 231.

Dixanthyl, 9-hydroxy-, 70.

Duboisia leichardtii, alkaloids of, 480.

E.

Ehrlich reaction, 488.

Elaidic acid, methyl ester, photo-oxidation of, 242.

d-Erythronic acid, 3:4-di-p-nitrobenzoyl derivative, methyl ester, 228.

Esters, parachors of, 380.

Ethane, nitro-, preparation of, 24. Ethers, cleavage of, by Grignard reagents, 462.

6-Ethoxy-2-p-methyl- β -chloroethylaminobenzylidenethioindoxyl, 491.

2-Ethoxy-1-naphthoylpropionic acid, 553.

2-Ethoxy-6-naphthoylpropionic acid, and its 2:4-dinitrophenylhydrazone, 553.

5-Ethoxy-2-phenyl-1-ethylindole, and 3-nitroso-, 673.

 $(5-Ethoxy-2-phenyl-1-ethyl-3-indole)(1-methyl-4-quinoline)-\alpha$ azadimethincyanine iodide, 676. 4-Ethoxyquinazoline picrate, 623.

3-Ethyladipic acid, and its di-p-phenylphenacyl ester, 102. p-Ethyl-β-chloroethylaminobenzaldehyde, and its semicarb-

azone, 490. p-Ethyl-β-chloroethylaminobenzylidenecyanoacetic acid, ethyl

ester, 490. methiodide. 2-p-Ethyl- β -chloroethylaminostyrylbenzthiazole

2-p-Ethyl-β-chloroethylaminostyryl-3-methylquinoxaline methiodide, 491.

2-p-Ethyl- β -chloroethylaminostyrylpyridine ethiodide, 491. p-Ethyl-β-chloroethylaminostyrylquinoline methiodide, 491. Ethyl- β -chloroethylformal, 266.

2-Ethyl-p-cresol, 332.

α-Ethyldeoxybenzoin, 4:4'-dibromo-, 614.

9-Ethyl-1:2:5:6-dibenz-9-fluorenol, 557.

Ethyleneimine, spectrum of, absorption, infra-red, and structure, 301.

Ethyltrifluorosilane, 455.

Ethylidene glucosaccharic acid, derivatives of, 67.

4:6-Ethylidene β -methylglucoside, and its derivatives, 494, 496,

Ethyl-6'-methoxyrubanol, 3-hydroxy-, dihydrobromide, 335. 2-Ethylnaphthalene, 1:3-dihydroxy., and its diacetyl deriv-

1-Ethylcyclopentan-2-one-1-carboxylic acid, esters, 102.

N-Ethyl-p-phenetidine, 673.

 α - β' -Ethyl- α -phenylbutyrolactone, α - β' -bromo-, -chloro-, and -hydroxy., 268.

a-Ethylstilbene, 4:4'-dibromo, and 4:4'-dicyano, 614.

Ethylthiol, β -amino-, preparation of, 6.

isoEugenol, 5-bromo, 536.
Euphol, isolation of, from euphorbium, and its derivatives, 249.

Euphorbium resin, alcohols from, 249.

a-Euphorbol, isolation of, from euphorbium, and its derivatives, 249.

Ferric chloride. See under Iron. Ferulic acid, oxidation of, 535. 5-bromo-, and its ethyl ester, 536.

Fluorescence, quenching of, 541, 544.

Fluorescent substances, photochemistry of, 541, 544. Formamidodichloride, preparation and reactions of, 647. Formo-1-naphthalide, 3-nitro-, 77.

Formo-2-naphthalide, 4-nitro-, 77.

2-Formyl-1-decalone, 502.

Furan compounds, formation of, from sucrose, 667.

Furan-2-carboxylic-5-acetic acid, 670.

Galactose, conversion of, into d-idose derivatives, 522. Geranylamine, 306.

2-Geranylaminopyridine, and its picrate, 249.

 N^1 -Geranyl- N^1 -2-pyridylsulphanilamide, 249. Germanicol, and its derivatives, 285.

Glucopolysaccharides, structure of, 473.

Glucosaccharic acid, derivatives of, 65.

lactones of, and their derivatives, 510, 571, 633, 637.

Glucurone, 584.

Glycogen, analysis of, 475.

H.

Harmine methobromide, 622.

Heptadecyl-p-nitrobenzenesulphonamide, 248.

N¹-n-Heptadecylsulphanilamide, and its N⁴-acetyl derivative, 248.

Hexadecahydro-9:9'-dianthryl, 291.

Hexahydroanthracene, 291.

trans-Hexahydroanthrone, and its derivatives, 291.

1:2:3:4:12:13-Hexahydro-6:5-quinolindoles, 13-nitro-12-hydroxy-, 618.

1:2:3:5:6:7-Hexamethoxy-9:10-dihydroanthracene, 324.

cycloHexane-1:1'-pyridinium chloride, 2-isonitroso-, 314.

cycloHexanone quinolylhydrazones, 617, 618.

cycloHexene, chlorination of, 118. nitrosites, 123.

 Δ^{1} -cycloHexenylsuccinic acid, 551.

Hex-3-en-5-yn-2-ol, condensation of, with carbonyl compounds, 141.

cycloHexyl nitrite, 123.

sulphite, 2.chloro-, chloride, 119.

 α -cycloHexyl- $\Delta^{\alpha\beta}$ -butenolide, 552.

2-n-Hexylbutyric acid, and its p-toluidide, 147.

cycloHexylhydroxylamine, 123.

a-cycloHexylpropionic acid, β -formyl derivative, 552. cycloHexylsuccinic acid, and its methyl ester, 551.

1-Hexyne, condensation of, with $\alpha\beta$ -unsaturated ketones, 144. Hydroacridones, synthesis of, and their dehydrogenation, 425.

Hydroanthracenes, 286.

Hydrobromic acid. See under Bromine.

Hydrocarbons, aromatic polycyclic, 553. polycyclic, fluorescence of, quenching of, 541, 544.

Hydrocyanic acid. See under Cyanogen.

Hydrogen, reaction of, with acetylene, catalysed by metals, 373.

Hydrogen cyanide. See Hydrocyanic acid under Cyanogen.

Hydrophenanthrenes, 286.

Hydroxy-compounds, reaction of, with phosphorus and thionyl halides, effect of tertiary bases on, 85.

l-Idosaccharic acid, dimethyl dimethylene ester, synthesis of,

cis-Indane-1:2-dicarboxylic anhydride, 560.

and its ethyl ester, 561.

Indene, derivatives, 366.

Indole, sulphonamides from, 632.

Indole, 3-nitroso-, 1:2-disubstituted derivatives, condensation products of, 670.

Indoles, blue dyes from, 488.

Indole series, 624, 626, 629, 632.

Indole-3-glyoxylic acid, anil and ethyl ester, 631.

3-Indole-3'-(2'-methylindole)-α-methyltrimethincyanine iodide, 487.

Indole trimethincyanines, preparation of, 486.

 β -3-Indolylidenebutyric acid, ethyl ester, 487.

Ions, multivalent, diffusion potentials and mobilities of, 606. Iron:

Ferric chloride, as catalyst in Sandmeyer reaction, 393. catalytic decomposition of diazonium salts with, 18. reduction of, by stannous salts, 309.

K.

Ketoacetyloleanolic acid, methyl ester, preparation of, and its derivatives, 260.

7-Ketocholesteryl benzoate, 337.

5-Keto-4-deoxyglucosaccharo-3:6-lactone, enol, 637.

5-Keto-4-deoxymannosaccharolactone enol, and its hydrate and methyl ester, 582.

1-Keto-2:3-dihydropentindole, 625.

1-Keto-2:3-dihydropentindole-2-glyoxylic acid, isoamyl and ethyl esters, 625.

7-Keto-3:4-dimethoxy-13-ethyl-5:6:7:9:10:13-hexahydrophenanthrene, and its 2:4-dinitrophenylhydrazone, 510.

7-Keto-3:4-dimethoxy-13-ethyl-5:6:7:9:10:13-hexahydrophenanthrene, 1-chloro-, and its 2:4-dinitrophenylhydrazone,

6-Keto-3:4-dimethoxy-5-ethyl-5- γ -ketobutyl-5:6:7:8-tetrahydronaphthalene, 510.

7-Keto-3:4-dimethoxy-13-ethyl-5:6:7:8:9:10:13:14-octahydrophenanthrene, and its semicarbazone, 509.

7-Keto-3:4-dimethoxy-13-ethyl-5:6:7:8:9:10:13:14-octahydrophenanthrene, 1-chloro-, 509.

6-Keto-3:4-dimethoxy-5-ethyl-5:6:7:8-tetrahydronaphthalene, and its semicarbazone, 510.

6-Keto-3:4-dimethoxy-5-ethyl-5:6:7:8-tetrahydronaphthalene, 1-chloro-, and its derivatives, 509.

5-Keto-3:4-dimethoxy-5:6:7:8-tetrahydronaphthalene, 1-chloro-, and its derivatives, 508.

5-Keto-4-hydroxy-3-methoxy-5:6:7:8-tetrahydronaphthalene,

1-chloro-, and its 2:4-dinitrophenylhydrazone, 508. 4-Keto-7-methoxy-3'-isopropyl-1:4:9:10:11:12-hexahydro-1:2cyclopentenophenanthrene, 506.

8-Keto-6-methyl-6-n-amyltridecane, 153.

 γ -Keto- β -methylhexoic acid, 420.

1-Keto-3-(2'-naphthyl)indene-2-acetic acid, 558.

Ketones, aromatic, isomerisation of, with aluminium chloride, 232.

parachors of, 380.

1-Keto-3-phenyl-6:7-benzindene-2-acetic acid, 558.

1-Keto-1:2:3:4-tetrahydrocarbazole, 6-bromo-, 625.

1-Keto-1:2:3:4-tetrahydrocarbazole-2-carboxylic acid, ester, 625.

5-Keto- $\Delta^{4:9}$ -tetrahydrohydrindene, 2:4-dinitrophenylhydrazone and semicarbazone, 435.

5'- or 8'-Keto-5':6':7':8'-tetrahydro-1:2-(2':3'-naphtha)phenanthrene, 330.

γ-Lactones, unsaturated, synthesis of, 548. Lactucarium germanicum, non-saponifiable constituents of, 283.

Lectures, delivered before the Chemical Society, 183, 193, 208, 351.

Leuckart reaction, 126.

Lupinane, derivatives of, 274.

M.

Magnetic susceptibility of organic compounds, 590. -) Mandelic acid, ethyl ester, reaction of, with phosphorus and

thionyl chlorides, effect of tertiary bases on, 85. Mannitol, derivatives of, 58.

Mannosaccharic acid, lactones, 217, 221, 574, 577.

Mannosaccharodilactone, isomerisation of, with alkalis, 577.

d-Mannuronic acid, synthesis of, 587.

Medicine, tropical, chemotherapy in, 351.

Mercury organic compounds:

Mercury alkylmercaptides, parachors of, 384.

Metals, dissolving, reduction by, 430.

dl-Methionine, preparation of, and its derivatives, 666.

7-Methoxy-2-acetylcoumarone, 263.

6-Methoxy-1-acetyl-3:4-dihydronaphthalene, and its semicarbazone, 505.

5-Methoxyadipic acid, 4:5-dichloro-2:3-dihydroxy-, and its methyl ester, 584.

methyl ester, amide of, 642.

5-Methoxyanthranilic acid, 3-nitro-, 622.

4-Methoxyazobenzene-3-carboxylic acid, 623.

2-Methoxybenzaldehyde, azlactone of, 263.

3-Methoxybenzaldehyde, 5-bromo-4-hydroxy-, 4-acetyl derivative, 536.

1-Methoxy-3:4-benzfluorenone, 451.

5-Methoxybenzfurazan, 623.

3-Methoxycinnamic acid, 4-hydroxy-. See Ferulic acid.

6-Methoxy-3:4-dihydro-1-naphthoic acid, 504.

6-Methoxy-1-(3':4'-dimethoxyphenyl)-1:2-dihydronaphthalene-2:3-dicarboxylic acid, 7-hydroxy-, methyl ester, 537. 2-Methoxy-l-erythrosuccinic acid, 3-hydroxy-, derivatives of,

3-Methoxy-d- and -l-erythrosuccinic acids, 2-hydroxy-, bismethylamides, 225.

6-Methoxy-1-(4'-hydroxy-3'-methoxyphenyl)-1:2-dihydronaphthalene-2:3-dicarboxylic acid, 7-hydroxy-, dimethyl ester, 537.

3-Methoxy-2-methylmesobenzanthrone, 100.

12-Methoxy-10-methylphenanthrazine, 622.

2-Methoxynaphthalene, 4-cyano-, 540.

1-Methoxy-4-(2'-naphthoyl)naphthalene, 559.

 α -(4-Methoxyphenyl)- $\Delta^{\alpha\beta}$ -butenolide, 551.

 γ -(4-Methoxyphenyl)- $\Delta\beta\gamma$ -butenolide, 553.

1-(p-Methoxyphenyl)hept-4-en-2-yn-1:6-diol, 143.

4-(3'-Methoxyphenyl)-1-methylpiperidine-4-carboxylic acid, 4-2'-hydroxy-, lactone, 264.

4-(2'-Methoxyphenyl)-1-methylpiperidine-4-nitrile, 264.

3-Methoxy-1-phenylnaphthalene-2'-carboxylic acid, 451.

 α -(4-Methoxyphenyl)propionic acid, β -formyl derivative, 2:4-dinitrophenylhydrazone, 551.

 β -(4-Methoxyphenyl)propionic acid, β -cyano-, ethyl ester, 552. 2-(3-Methoxyphenyl)propyl alcohol, a-5-bromo-4-hydroxy-,

 γ -m-Methoxyphenylpropylacetoacetic acid, ethyl ester, 504.

4-Methoxyphenylsuccinic acid, and its methyl ester, 551.

4-Methoxyphenyl vinyl ketone, 2-hydroxy-, 2:4-dinitrophenylhydrazone, 263.

6-Methoxy-2-(3'-isopropylcyclopentan-2'-onyl)-1-acetyl-1:2:3:4-tetrahydronaphthalene, 506.

6-Methoxyquinazoline, 8-nitro-, 623.

6-Methoxy-4-quinazolone, 4-chloro-8-nitro-, and 8-nitro-, 623.

6-Methoxy-4-quinazolylhydrazine, 8-nitro-, 623.

6-Methoxy-4-quinazolyl-p-toluenesulphonylhydrazine, 8-nitro.,

6-Methoxy-4:5:6:7-tetrahydrobenzthiazole, 2-amino-, 324. 6-Methoxy-1:2:3:4-tetrahydronaphthoic acid, 505.

Methoxythreosuccinic acid, hydroxy-, dimethyl ester, 515. 5-Methoxytoluene, 3-nitro-2-amino-, 2-acetyl derivative, 622.

5-Methoxy-o-toluidine, 3-nitro-, 622.

Methyl groups, angular, introduction of, 501.

2-benzovl 3-Methyl $4-\alpha$ -acetoxyethyl β -methylglucoside, 6-acetyl derivative, 498.

a-Methylacraldehyde, preparation of, and its oxime, 98.

Methylacridans, 679.

Methylacridines, 679.

p-N-Methylaminobenzeneazo- β -naphthol, and its hydrochloride, and p-N-nitroso-, 399.

4-Methylamino-2-methylpyrimidine, 6-amino-, and 5:6-diamino-, 5-thioformyl derivative, 321.

Methyl 3:6-anhydro- α -methylgalactopyranosides, 229.

Methylaniline, p-amino, preparation of, and its diazotisation, 398, p-iodo-N-nitroso-, 399.

2-Methylanilinomethylene-1-decalone, 502.

Methylation, nuclear, of phenolic substances, 400.

2-Methylmesobenzanthrone, and its derivatives, 97.

2-Methylmesobenzanthrone, 3-amino-, 3-bromo-, 3-chloro-, 3-hydroxy-, and 3-nitro-, 100.

2-Methyl-5:6-benzcoumaran, 4-hydroxy-, and its acetyl derivative, 56.

2-Methyl-5:6-benzcoumaran-4:7-quinone, 58.

3-Methyl 4:6-benzylidene α - and β -methyl-d-idosides, 524.

2-Methyl-3-isobutylideneindolenine sulphate, 487.

 β -Methyl- β -chloroethylaminobenzaldehyde, 490.

p-Methyl- β -chloroethylaminobenzylidenecyanoacetic acid, ethyl ester, 490.

2-p-Methyl-β-chloroethylaminostyrylbenzthiazole methiodide, 491.

2-p-Methyl- β -chloroethylaminostyryl-3:4-dihydroquinazolone methiodide, 491.

2-p-Methyl- β -chloroethylaminostyryl-3:4-dihydro-3-quipoxalone methiodide, 491.

2-p-Methyl-p-chloroethylaminostyryl-3:3-dimethylindolenine methiodide, 491.

2-p-Methyl- β -chloroethylaminostyryl-4-methyl-3:4-dihydro-3quinoxalone methiodide, 492.

2-p-Methyl- β -chloroethylaminostyryl-3-methylquinoxaline methiodide, 491.

Methyl- β -chloroethylformal, 266.

a-Methylchondrosaminide, N-acetyl derivative, 273.

4-Methyldecan-2-ol, and its α -naphthylurethane, 146.

4-Methyldec-2-en-5-yn-4-ol, 146.

4-Methyldec-3-en-5-yn-2-ol, and its a-naphthylurethane, 146.

1-Methyldecylidenecyanoacetic acid, ethyl ester, 153.

a-Methyldeoxybenzoin, 4:4'-dibromo-, 614.

9-Methyl-1:2:5:6-dibenzfluorene, and its bis-1:3:5-trinitrobenzene complex, 557.

9-Methyl-1:2:5:6-dibenz-9-fluorenol, 557.

2-Methyl-3-dibutylaminomethyl-6:5-pyrroquinoline, its and salts, 618.

its 2-Methyl-3-dibutylaminomethyl-8:7-pyrroquinoline, and salts, 619.

4-Methyl-2-p-di- β -chloroethylaminobenzylidenethioindoxyl, 6-chloro-, 491

2-Methyl-3-diethylaminomethyl-6:5-pyrroquinoline, and its salts, 618.

2-Methyl-3-diethylaminomethyl-8:7-pyrroquinoline, andits salts, 619.

Methyl-p-diethylaminopropyldiveratrocopyrine, and its salts, 617.

5-Methyl-3- $(\gamma$ -diethylaminopropyl)pyrazole, and its hydrochloride, 617.

4(or 6)-Methyl-6-(or 4)-(γ -diethylaminopropyl)-1:2-(1':5'-tetrazolo)pyrimidine, and its picrate, 617.

3-Methyl-2:5-dihydroanisole, 434.

4-Methyl-1:3-dioxan, 300.

 β -Methyldodecamide, 154.

Methylene glucosaccharic acid, derivatives of, 66.

Methylene d-glucosaccharolactone, structure of, and its derivatives, 364.

2:4-Methylene sorbitol, and its derivatives, 520.

2:4-Methylene i-xylotrihydroxyglutaric acid, and its derivatives, 365.

3-Methyl d-erythronic acid, amide and methylamide, 228.

3-Methyl d-erythronolactone, 227.

2-Methyl 4:6-ethylidene β -methylglucoside, and its derivatives,

3-Methyl 4:6-ethylidene β -methylglucoside, and its derivatives, 497, 499.

and

5-chloro-,

ester, 670. Methylfurfuraldehyde, 5-hydroxy-, preparation and properties of, 667. 5-Methyl 4-glucosaccharo-3:6-lactone, 1-methyl ester, 642. Methylglucosides, methylated, separation of, by adsorption on alumina, 333. β -Methylglucoside, and its derivatives, 494, 498, 501. Methylcyclohexene, nitro-, 123. **3-Methyl-** Δ^2 -cyclohexenone, 2:4-dinitrophenylhydrazone and semicarbazido-semicarbazone, 434. Methyl n-hexyl ketone, and its derivatives, 459. 2-Methylhypoxanthine, 321. 3-Methyl d-idonamide, 525. 3-Methyl d-idose, 525. β -Methyl-d-idoside, 3-amino-, and its derivatives, 526. 2-Methyl-3-indole - 4-carbethoxy-3-phenyl-5-methyl-2pyrrole]- β -carbethoxy- α -methyltrimethincyanine, 487. [2-Methyl-3-indole]-[4-carbethoxy-3-phenyl-5-methyl-2pyrrole]- $\alpha\beta$ -trimethylenetrimethincyanine sulphate, 487. [2-Methyl-3-indole]-[4-dimethylaminobenzene]- β -carbethoxyα-methyltrimethincyanine, 489. $[2-Methyl-3-indole]-[4-dimethylaminobenzene]-\alpha-phenyl$ trimethincyanine sulphate, 489. β -7-Methyl-3-indolylidenebutyric acid, ethyl ester, 487. β -2-Methyl-3-indolylidene propionic acid, ethyl ester, 487.

5-cyano-, ethyl esters, and 5-hydroxy-, amide and ethyl

9-Methyl-1-ethynyldecalin, 1-hydroxy-, 506.

Methylfuran-2-carboxylic acid, 5-bromo-,

3-Methyl β -methylglucoside, synthesis of, and its derivatives, 3-Methyl β -methyl-d-idoside, 524.

5-Methyl-∆4-mannosaccharo-3:6-lactone, 1-methyl ester, 583.

Methylmalonic acid, $\alpha\beta$ -dibromo-, ethyl ester, 628.

2-Methyl β -methylglucoside, derivatives of, 495.

a-Methylmannuronoside, 588.

2-Methyl-3-4'-spiro-(1'-methylpiperidine)coumaran, and itspicrate, 264. 2-Methyl-3-morpholinomethyl-6:5-pyrroquinoline, and its

hydrochloride, 618. 2-Methyl-3-morpholinomethyl-8:7-pyrroquinoline, its salts, 619.

2-Methylnaphthalene, 1:3-dihydroxy-, and its diacetyl derivative, 54.

3-Methylnonan-1-ol, and its a-naphthylurethane, 146.

3-Methylnon-6-en-4-yn-3:8-diol, 144.

3-Methylnon-1-en-4-yn-3-ol, 146.

3-Methylnon-2-en-4-yn-1-ol, and its α -naphthylurethane, 146. 7-Methylocta-2:7-dien-5-yn-4-ol, and its α-naphthylurethane,

7-Methylocta-3:7-dien-5-yn-2-ol, and its α-naphthylurethane, 141.

7-Methyloctan-2-ol, and its α -naphthylurethane, 141.

7-Methyloctan-2-one, and its semicarbazone, 141. β -Methyloctoic acid, α -cyano-, ethyl ester, 153.

1-Methyloctylidenecyanoacetic acid, ethyl ester, 154. 1-Methyl-2-oximinomethylindole, 3-nitroso-, 674.

azadimethincyanine iodide, 676.

2-Methyl-3-cyclopentylideneindolenine sulphate, 487. 2-Methyl-3-piperidinomethyl-6:5-pyrroquinoline, its hydrochloride, 618.

2-Methyl-3-piperidinomethyl-8:7-pyrroquinoline, and its salts,

2-Methyl-3-isopropylideneindolenine sulphate, 487.

4-Methyl-3-isopropyl-1:9:10:11-tetrahydro-1:2-cyclopentenophenanthrene, 506. N^1 -2-(6-Methylpyridyl)- N^1 -octadecylsulphanilamide, and its

 N^4 -acetyl derivative, 249.

2-Methylpyrimidine, 4:6-diamino-, diacetyl derivative, 477. 4:5:6-*tri*amino-, 317.

4:6-dichloro-5-nitro-, and 5-nitro-4:6-diamino-, 678. 2-Methyl-6:5-pyrroquinoline methiodide, 618.

2-Methyl-6:5-(2':3-pyrro)quinoline, 618.

2-Methyl-8:7-pyrroquinoline, and its methosulphate, 618. a-Methylstilbene, 4:4'-dibromo-, and 4:4'-dicyano-, 614. Methyl-1:2:3:4-tetrahydroacridones, and their picrates, 426.

2-Methyl-3-tetrahydroisoquinolyl-6:5-pyrroquinoline, and its hydrochloride, 618.

2-Methyl-3-tetrahydroisoquinolyl-8:7-pyrroquinoline hydrochloride, 619.

6-Methylthio-5:5-diethyl-2:4-dithiobarbituric acid, 125.

7-Methyltrideca-5:8-diyn-7-ol, 147.

2-Methylvinylacetylene, condensation of, with crotonaldehyde,

Molecular theory, old and new, 340.

Naphthacene-11:12-quinone, 9:10-dihydroxy-, structure of, 366.

3:4-(1':2'-Naphtha)fluorenone 2-hydroxy-, acetyl derivative, 558.

Naphthalene, 1-amino-2-hydroxy-4-cyano, diazotisation of, 539.

1:2:3:4-tetrabromo., 1:3-dibromo-2-nitro-, 1:3:4-tribromo-2nitro-, and 4-chloro-1:3-dibromo-2-nitro-, 22.

1-bromo-3-iodo-, 2-bromo-1-iodo-, 1-chloro-3-bromo-, chloro-1-bromo-, 1-chloro-3-iodo-, and 1:3-diiodo-, 539. 1:3-dihydroxy-derivatives, 53.

1:3-dinitro-, monoreduction of, 75.

1:2:3-trinitro-, 561. 2-nitro-4-cyano-, 77.

Naphthalene series, syntheses in, 53, 55, 56.

Naphthaleneazo-β-naphthol, 3-nitro-, 538.

Naphthalene-1-azo-β-naphthol, 2-hydroxy-4-cyano-, 540.

Naphthalene-2-azo- β -naphthol, 4-nitro-, 386.

1:6-dinitro-, 10. Naphthalene-1':2-azo-1-naphthol, 4:4'-dinitro-, 17.

Naphthalene-1':2-azo-1-naphthylamine, 4:4'-dinitro-, 17.

Naphthalene-1-diazonium salts, 4-nitro-, decomposition of, by sodium acetate and sodium sulphite, 15.

Naphthalene-1:2-diazo-oxide, 4-cyano-, 540.

1:4-Naphthaguinone, 2-hydroxy-, 56.

1-Naphthol, 2-bromo-, 539.

6-bromo-, 2- and 4-bromo-6-nitro-, 2:4-dibromo-6-nitro-, 2-chloro-4-bromo-6-nitro-,2-chloro-6-nitro-, 2- and 4-iodo-6-nitro-, and their derivatives, 9.

2-Naphthol, 1. bromo-4:5-dinitro-, and 4:5-dinitro-, 9.

4-cyano-, preparation of, and its acetate, 539. 6-Naphthoylpropionic acid, 2-hydroxy-, and its 2:4-dinitrophenylhydrazone, 553.

2-Naphthyl methyl ethers, 4-amino-, derivatives of, 4-iodo-, and 4-nitro-, 451.

1-Naphthylamine, 2-bromo-, and 2-iodo-, and their derivatives, and 3-nitro-, derivatives of, 538.

2:4:dibromo-3.nitro-, and 3-nitro-, and their derivatives, 21. 3-nitro-, diazotisation of, 77.

reactions of, 21. separation of, from 4-nitro-2-naphthylamine, 75, 385. 2:3:4-*tri*nitro-, 561.

2-Naphthylamine, 1:3:4-tribromo-, 22.

1-bromo-4-nitro-, 386.

4-nitro-, bromination of, and its separation from 3-nitro-1naphthylamine, 385.

1:6-dinitro-, diazotised, decomposition of, by precipitated copper in organic solvents, 10.

γ-6-Naphthyl-Δβγ-butenolide, γ-2-hydroxy-, acetyl derivative,

1:3-Naphthylenediamine, NN'-diacetyl derivative, 21.

3-(2'-Naphthyl)indene-2-acetic acid, 559.

1-Naphthylmaleamic acid, 3-nitro-, 386.

2-Naphthylmaleamic acid, 4-nitro., 386.

4- β -Naphthyl-2-methylpyrrole-5-carboxylic acid, ethyl ester,

Nickel, catalytic, 373.

Nitric oxide. See Nitrogen dioxide.

Nitrogen dioxide (nitric oxide), quenching of fluoresence by, 541.

reaction of, with chlorine, 388.

Nitroxides, photochemical formation of, 541.

Nucleotides, chemistry of, 208.

0.

Obituary Notices:-Peter Phillips Bedson, 40. Horace Edward Brothers, 562. Frederick Daniel Chattaway, 356. David Gwynne Davies, 562.

Obituary Notices—continued. Henry George Denham, 41. John Simpson Ford, 562. George Gerald Henderson, 202. Alexander Lauder, 42. Ernest Wilson McClelland, 43. Gerald Tattersall Moody, 358. Henry Forster Morley, 43. Frank Lee Pyman, 563. Arthur Avery Read, 206. William Colebrook Reynolds, 46. Siegfried Ruhemann, 46. James McConnell Sanders, 207. George Senter, 359. George Stallard, 571. Percy Williams, 48.

Octadeca-2:4:6:12:14:16-hexaen-9-yn-8:10-diol, 139. Octadeca-3:5:7:11:13:15-hexaen-9-yn-2:17-diol, 139.

2-Octadecylaminopyridine, 249.

 $\Delta^{1:5}$ -cycloOctadiene, 1:5-dichloro-, 101.

Octa-2:7-dien-5-yn-4-ol, and its α -naphthylurethane, 140. Octa-3:5-dien-1-yn-7-ol, 136.

Octa-3:7-dien-5-yn-2-ol, 141. Octa-4:6-dien-1-yn-3-ol, 136.

trans-as-Octahydroanthracene, and ar- and 9-hydroxy-, 291.

1:2:3:4:7:8:9:10-Octahydrobenzazulene, 293.

1:2:3:4:7:8:9:10-Octahydro-5:6-benz-7-azulol, 293.

1:2:3:4:7:8:9:10-Octahydro-5:6-benz-7-azulone, and its 2:4-dinitrophenylhydrazone, 293.

n-Octane, 2-amino-, preparation and resolution of, 456. (+)-β-Octanol, reaction of, with phosphorus and thionyl chlorides, effect of tertiary bases on, 85.

Octatrienal, ethynylcarbinol from, 134.

sec.-Octyl alcohol, surface tension of aqueous solutions of, 477.

(+)- β -Octyl dihydrogen phosphite, 87.

-)- β -Octyloxyphosphorus dichloride, 87. Olefines, a methylenic reactivity in, 296.

cyclo-Olefines, parachors of, 380.

Oleic acid, methyl ester, combination of, with oxygen, 105. Organic compounds, magnetic susceptibility of, 590.

molecular, formation and structure of, 464. 3-Oximino-2-keto-6-m-methoxyphenylhexane, and its deriv-

atives, 504.

2-Oximino-5-m-methoxyphenylvaleric acid, 504.

Ozone, concentration of, in atmosphere, measurement of, 1.

Pantothenic acid, analogues of, 5, 94. N-Pantoyl- β -aminoethylthiol, 7.

Pantoyltaurine, aryl derivatives of, 94.

N-Pantoyltaurine, growth-inhibitors related to, o. Parachor of aldehydes, fatty acid esters, and ketones, 380. cycloParaffins, parachors of, 380.

Perbunan, spectrum of, vibrational, 597.

Perhydroanthracene, 292.

Pethidine, synthesis of, 265.

4-Phenacyl-4'-dimethylaminophenyl-2''-ketocyclopentylmethane, 4-amino-, acetyl derivative, 622.

Phenanthraquinone, reaction of, with ethylenes, 387.

Phenolic substances, nuclear methylation of, 400.

δ-Phenoxyvaleric acid, a amino, and a cyano, ethyl ester and hydrazide, 14.

Phenyl allyl ether, action of Grignard reagents on, 462. ethers, action of aluminium chloride on, 330.

Phenylacethydrazide, 2:4-dinitro-, 324.

Phenylacetic acid, dissociation constant of, in aqueous acetone and aqueous sucrose, 411.

Phenylacetic acid, o-bromo-, ethyl ester, 73.

 γ -Phenylacetoacetic acid, γ -4-nitro-, and its ethyl ester, 55.

Phenylacetylene, spectrum of, 595.

2-Phenylacetylfluorene, and its reduction products, 560. dl-Phenylalanine, and its phenylcarbamyl derivative, 14.

-)Phenylalkylcarbinols, reaction of, with hydrogen bromide,

 γ -Phenyl- α -allylacetoacetic acid, ethyl ester, 58.

5-Phenyl-7-(aminophenyl)-4-azahydrindenes, and their derivatives, 621.

y-Phenyl-α-isoamylacetoacetic acid, ethyl ester, 54.

 γ -Phenyl-n-amyldiethylamine, 265.

5-Phenyl-7-(p-anisyl)-4-azahydrindene methiodide, 621.

Phenyl-p-anisyl-n-butylphosphine, 281.

Phenyl-p-anisylchlorophosphine, 281.

Phenyl-p-anisylethylphosphine, 282.

Phenyl-p-anisylmethylethylphosphonium iodide, 282.

Phenyl-p-anisylmethyl-n-propylphosphonium iodide, 283.

Phenyl-p-anisyl-n-propylphosphine, 283.

Phenyl-p-anisyl-p-tolyl-p-chlorophenacylphosphonium bromide, 283.

Phenyl-p-anisyl-p-tolylphosphine, and its sulphide, 283. 3-Phenyl-6:7-benzindene-2-acetic acid, 1-hydroxy-, 559.

Phenyl-p-benzoyloxyphenyl-n-butylphosphine, and its derivatives, 281.

Phenylbromoacetic acid, liberation of bromide ions from aqueous solutions of, 90.

Phenyl-p-bromophenyl-p-anisylphosphine, 283.

Phenyl-p-bromophenylchlorophosphine, 279.

Phenyl-p-bromophenyl-p-dimethylaminophenylphosphine, and its derivatives, 279.

Phenyl-p-bromophenylethylphosphine, 279.

Phenyl-p-bromophenylphosphonic acid, 279.

Phenyl-p-bromophenyl-2- and -3-pyridylphosphines, and their derivatives, 280. a-Phenyl- $\Delta^{\alpha\beta}$ -butenolide, 550.

 $\gamma\text{-Phenyl-}\Delta^{\beta\gamma}\text{-butenolide}, \gamma\text{-}4\text{-hydroxy-, acetyl derivatives, }553.$

 γ -Phenyl- α -butylacetoacetic acids, ethyl esters, 54.

 α -Phenylbutyric acid, $\alpha\gamma$ -dicyano-, ethyl ester, 271.

a-Phenylbutyrolactone, γ-hydroxy-, acetyl derivative, 550.

dl-a-N-Phenylcarbamidoiso valeric acid, 14.

Phenyl-p-(carboxymethoxy)phenyl-n-butylphosphine sulphide, resolution of, 276.

Phenyl-p-(carboxymethoxy)phenylethylphosphine sulphide, and its derivatives, 282.

Phenyldichlorophosphine, p-bromo-, 279.

4-Phenyl-2-p-di- β -chloroethylaminostyryl-3:4-dihydro-3quinoxalone methosulphate, 492

5-Phenyl-7-(β-diethylaminoethylaminophenyl)-4-azahydrindenes, and their salts, 622

Phenyldiethylphosphine, p-hydroxy-, 281.

γ-Phenyl-aa-dimethylacetoacetic acid, ethyl ester, preparation of, 54.

5-Phenyl-7-(p-dimethylaminophenyl)-4-azahydrindene, and its hydrochloride, 621.

5-Phenyl-7-(p-dimethylaminophenyl)-4-azahydrindene, 5-p-amino-, acetyl derivative, 622

1-Phenyl-2:3-dimethylquinoxalinium iodide, 491.

m-Phenylenebis-(p-tolylazoxysulphone), 371.

-)-α-Phenylethyl ethyl sulphite, 90.

 γ -Phenyl- α -ethylacetoacetic acid, ethyl ester, 54. 1-Phenyl-2-p-ethyl- β -chloroethylaminostyryl-3-methyl-quinoxalinium iodide, 491.

 $2-\beta$ -Phenylethylcyclohexanol-1-acetic acid, ethyl ester, 292.

2-β-Phenylethylcyclohexylacetic acid, p-phenylphenacyl ester, 292.

2-Phenyl-1-ethylindole, 3-amino-, hydrochloride, 673. 3-nitroso-, picrate, 673.

(2-Phenyl-1-ethyl-3-indole)(1-ethyl-2-benzthiazole)-a-azadimethylcyanine iodide, and 2-p-chloro-, 675.

(2-Phenyl-1-ethyl-3-indole)(1-ethyl-2-quinoline)-a-azadimethincyanine iodide, 674.

 $(2-Phenyl-1-ethyl-3-indole)(1-ethyl-4-quinoline)-\alpha-azadimethin$ cyanine iodide, 675.

 $(2-Phenyl-1-ethyl-3-indole)(1-methyl-2-benzselenazole)-\alpha$ azadimethincyanine iodide, 675.

 $(2-Phenyl-1-ethyl-3-indole)(1-methyl-2-pyridine)-\alpha-azadi$ methincyanine iodide, and 2-p-chloro-, 674

 $(2-Phenyl-1-ethyl-3-indole)(1-methyl-4-pyridine)-\alpha-azadi$ methincyanine iodide, and 2-p-chloro-, 674.

 $(2-Phenyl-1-ethyl-3-indole)(1-methyl-2-quinoline)-\alpha-azadi$ methincyanine iodide, 674.

(2-Phenyl-1-ethyl-3-indole)(1-methyl-4-quinoline)-a-azadimethincyanine iodide, and 2-p-chloro-, 675.

 $(\hbox{\it 2-Phenyl-1-ethyl-2-indole}) (\hbox{\it 1-methyl-2-tetrahydrobenzthi-}$ azole)-α-azadimethincyanine iodide, 675.

(2-Phenyl-1-ethyl-3-indole)(nitro-1:3:3-trimethyl-2-indolenine)a-azadimethincyanine iodide, 675.

(2-Phenyl-1-ethyl-3-indole)(1:3:3-trimethyl-2-indolenine)-aazadimethincyanine iodide, 675.

Phenyltrifluorosilane, 455.

```
1-Phenylhept-4-en-2-yn-1:6-diol, 143.
```

1-Phenylhept-5-en-2-yn-1:4-diol, 143.

4-Phenyl-4-(α-hydroxyethyl)-1-methylpiperidine, 264.

Phenyl-p-hydroxyphenylethylphosphine, and its derivatives,

[2-Phenyl-3-indole]-[4-dimethylaminobenzene]- α -methyltrimethincyanine, 489.

γ-Phenyl-a-methylacetoacetic acid, ethyl ester, preparation of, 54.

(-)Phenylmethylcarbinol, reaction of, with phosphorus and thionyl chlorides, effect of tertiary bases on, 85.

4-Phenyl-2-p-methyl- β -chloroethylaminostyryl-3:4-dihydro-3quinoxalone methosulphate, 492.

1-Phenyl-2-p-methyl- β -chloroethylaminostyryl-3-methylquinoxalinium iodide, 491.

1-Phenyl-3-methyl-4-p-di- β -chloroethylaminobenzylidene-5pyrazolone, 491.

1-Phenyl-3(or 5)-methyl-5(or 3)-(γ -diethylaminopropyl)pyrazole, and its hydrochloride, 617.

Phenylmethyldiethylphosphonium iodide, p-hydroxy-, 281.

1-Phenyl-3-methyl-4-p-ethyl- β -chloroethylaminobenzylidene-5-pyrazolone, 490.

1-Phenyl-2-methylindole, 674.

 β -Phenyl- β -2-methyl-3-indolylidenepropionic acid, ethyl ester,

1-Phenyl-3-methyl-4-p-methyl- β -chloroethylaminobenzylidene-5-pyrazolone, 490.

4-Phenyl-1-methylpiperidine, and its picrate and 4-2'-hydroxy-, and 4-2':3'-dihydroxy-, 264.

3-Phenyl-1-methylpiperidine-3-carboxylic acid, and its derivatives, 270, 271.

4-Phenyl-1-methylpiperidine-4-carboxylic acid, esters, and their derivatives, 267

4-Phenyl-1-methylpiperidine-4-carboxylic acid, 4-2'-hydroxy-, lactone, hydrochloride, 264.

4-Phenyl-1-methylpiperidine-4-nitrile, 266.

3-1'-Phenyl-3'-methyl-4'-pyrazolylamino-2-phenyl-1-ethylindole, 675.

4-Phenyl-2-methylpyrrole-3-carboxylic acid, 5-bromo-, ethyl

3-Phenyl-1-methylpyrrolidine, and its picrate, 270.

3-Phenyl-1-methylpyrrolidine-3-carboxylic acid, ethyl esters, and its picrate, 270.

1-Phenylnaphthalene-2:4'-dicarboxylic acid, 452.

1-Phenylnaphthalene-2':3'-dicarboxylic acid, and its deriv-

γ-Phenyl-γ-2-naphthylitaconic acid, methyl ester, 557.

5-Phenyl-7-(nitrophenyl)-4-azahydrindenes, 621.

1-Phenyl-2-oximinomethylindole, 3-nitroso-, 674.

4-Phenylpiperidine, derivatives, synthesis of, 261.

3-Phenylpiperidine-3-carboxylic acid, ethyl ester, and nitroso-,

 β -Phenylpropaldehyde, β -cyano-, and its diethyl acetal, 270. α -Phenylpropionic acid, β -formyl derivative, and its 2:4-dinitrophenylhydrazone, 550.

a-Phenylpropionic acid, $\alpha\beta$ -dicyano-, ethyl ester, 271.

 β -Phenylpropionic acid, dissociation constant of, in aqueous acetone and aqueous sucrose, 411.

β-formyl derivative, ethyl ester, and its 2:4-dinitrophenylhydrazone, 552.

 β -Phenylpropionic acid, α -cyano-, ethyl ester and hydrazide,

 β -cyano-, and β -4-hydroxy-, β -4-acetyl derivative, ethyl ester, 552.

γ-Phenyl-α-propylacetoacetic acids, ethyl esters, 54.

2-Phenylpyrimidine, 4:6-diamino-, 477.

3-Phenylpyrrolidine-3-carboxylic acid, ethyl ester, 272.

2-Phenylquinazoline, 6:8-dinitro-, 623.

Phenylsuccinic acid, 4-hydroxy-, and its acetyl derivative, methyl esters, 551.

a-Phenyltaurine, and its sodium salt, 96.

Phenyl-p-tolylazoxysulphone, 370.

Phenyltrialkylammonium iodides, formation of, in methyl alcohol, 422.

a-Phenyl-β-(3:4:5-trimethoxyphenyl)acrylamide, a-p-hydroxy-,

a-Phenyl-β-(3:4:5-trimethoxyphenyl)ethylene, α-cyano-α-phydroxy-, 323.

a-Phenylvaleric acid, δ-chloro-α-cyano-, ethyl ester, 271.

 β -Phenylisovaleric acid, α -hydroxy., 96.

Phosphines, dissymmetric tertiary, synthesis of, 276. Phosphorus halides, reaction of, with hydroxy-compounds. effect of tertiary bases on, 85.

pentasulphide, reaction of, with barbituric acids, 124.

Phosphorus organic compounds, stereochemistry of, 276.

Photochemical reactions, 67, 387.

Phthalaz-4-one, 1-amino-, preparation of, 678. Phthalic acid, 3-p-amino-, 3-p-toluenesulphonyl derivative, ethyl ester, 451.

Phthalimidoacetoxymethylmalonic acid, ethyl ester, 628.

β-Phthalimidomethylmalonic acid, and bromo-, ethyl esters,

Pimelic acid, a-cyano-, ethyl ester and hydrazide, 15.

a-Piperidino- $\beta\beta$ -dimethylacrylic acid, ethyl ester, platinichloride, 372

 α -(β' -Piperidinoethyl)- α -phenylbutyrolactone, and its hydrochloride, 268.

β-Piperidino-2-hydroxy-4-methoxypropiophenone, hydrochloride, 262.

 $2-\beta$ -Piperidino-5-methoxyphenoxyacetic acid, and its ethyl ester, hydrochlorides, 263.

 $2-\beta$ -Piperidinopropionyl-7-methoxycoumarone, salts, 263.

Polyene series, 134, 136, 140, 141, 144.

Polyisoprenes, 114, 120.

autoxidation of, 242.

structure of, 600.

Polysaccharides, methylated, end-group determinations in,

Potassium organic compounds:

Potassium ferricyanide, diffusion potential and ionic mobilities of, 606.

ferrocyanide, diffusion potential and ionic mobilities of. 606.

Potential, diffusion, and mobilities of multivalent ions, 606. Propenylethynylcarbinol, condensation of, with carbonyl compounds, 141.

rearrangement of, 436, 443.

Propionic acid, dissociation constant of, in aqueous acetone and aqueous sucrose, 411.

Propiophenone, p-cyano-, hydrazone, 613.

Propylbenzylmethylamine, γ -chloro-, 270.

 β -n-Propyl- $\beta\beta$ -diisoamylpropionic acid, and its derivatives, and α -cyano-, ethyl ester, 154. Propylene, Prins reaction with, 296.

1-n-Propylisohexylidenecyanoacetic acid, ethyl ester, 154.

2-Propylnaphthalenes, 1:3-dihydroxy-, and their diacetyl derivatives, 55.

3'-isoPropyl-1:2-cyclopentenophenanthrene, and its picrate, and 4-hydroxy-, 505.

Purine nucleosides, synthesis of, 315, 318, 476, 592, 652,

Pyrethrins, spectra of, absorption, and structure, 49.

Pyrethrolone, enol, 50.

methyl ethers, isomeric, 241.

structure of, 51, 239, 642.

isoPyrethrolone, enol, and its acetate, 52.

Pyridoquinolines, amino-, bromo-, and hydroxy-, and their derivatives, 312.

 N^1 -2-Pyridyl- N^1 -n-amylsulphanilamide, and its N^4 -acetyl derivative, 249.

 N^1 -2-Pyridyl- N^1 -cetylsulphanilamide, and its N^4 -acetyl derivative, 249.

 N^1 -Pyridyl- N^1 -2-octadecylsulphanilamide, 249.

 N^1 -2-Pyridyl- N^1 -n-propylsulphanilamide, 249.

Pyrimidine, derivatives, coupling of, with diazonium salts, 315.

Pyrimidine, 4:6-diamino-2-hydroxy-, hydrochloride, 477.

Pyrimidines, synthesis of, from esters and malondiamidine,

Pyrimidines, 5-amino-, preparation of, 315.

chloro-, preparation of, 678.

Pyrimidine-2-carboxylic acid, 4:6-diamino-, 477.

Pyrroles, blue dyes from, 488.

2-Pyrrole-2'-(3'-carbethoxy-4'-phenyl-5'-methylpyrrole)- α methyltrimethincyanine bromide, 485.

[2-Pyrrole]-[4-dimethylaminobenzene]- α -methyltrimethincyanine bromide, 489.

2-Pyrrole-2'-(3':5'-diphenylpyrrole)-a-methyltrimethincyanine bromide, 484.

Pyrrole trimethincyanines, 482.

Quinaldinic acid, reduction of, at dropping mercury cathodes,

Quinazoline, 2- and 4-amino-, and the 2-(p-acetylbenzenesulphonyl) derivative, 623.

4-Quinazolylhydrazine, 623.

Quinhydrone, magnetic susceptibility of, 590. Quinine, derivatives, antiplasmodial action of, 334. isoQuinine, antiplasmodial action of, 334.

Quininol sulphate, 335.

Quinol, magnetic susceptibility of, 590. Quinoline, 8-bromo-6-amino-, and its derivatives, 312.

Quinoxaline cyanines, 489.

R.

Rays, infra-red, use of, in chemistry, 183. Reactions, ionic, in aqueous solutions, 309. Reduction, by dissolving metals, 430.

Report of the Council, 159.

Resins, natural, phenolic, constituents of, 535.

synthetic, formaldehyde-phenol, nature and formation of,

Resinols, triterpene, 28, 256, 527, 532.

Resonance, steric inhibition of, 404, 408. D-Ribobenziminazole, 339.

d-Ribonic phenylhydrazide, 339.

9-d-Ribopyranosidoadenine, 658.

9-d-Ribopyranosidohypoxanthine, 658.

6-d-Ribosidamino-5-(2':5'-dichlorobenzeneazo)pyrimidine,

4-amino-, and its 6-triacetyl derivative, 658.

6-triacetyl-5-6-d-Ribosidaminopyrimidine, and 4-amino-, thioformyl derivative, 658.

Rice starch. See under Starch.

Rotation, optical, of triterpenoid compounds, and their structure, 659.

Rubber, 114, 120.

halogenation of, 114.

Sandmeyer reaction, 18, 393. Shellac, constitution of, 306.

Silane, derivatives of, 293.

fluoro-derivatives, 293. Silicon organic compounds, 81.

Silicon ethyl and phenyl fluorides, 454.

Sodium, reduction by, in liquid ammonia, 430.

Sodium polysulphides, reaction of, with p-nitrotoluene, 4. Sorbaldehyde, ethynylcarbinol from, 134.

Sorbitol, derivatives of, 58.

Spectra, absorption, ultra-violet, of polyisoprenes, 600. Stannous salts. See under Tin.

Starch, rice, analysis of, 476.

Sterols, synthesis of substances related to, 503.

Stilbene, derivatives, preparation of, 612.

reaction of, with phenanthraquinone, 387.

Styrene, reaction of, with phenanthraquinone, 387.

Succinic anhydride, condensation of, with chrysene, 329.

Sucrose, conversion of, into furan compounds, 667.

Sugar nitrates, 492, 496, 499.

Sulphanilamide, derivatives of, 248.

5-Sulphanilamido-2:3-dimethylindole, 633.

3-Sulphanilamidoethylindole, 632.

3-Sulphanilamidoindole, 632.

Sulphonation, aromatic, by sulphur trioxide, 649.

kinetics of, 469.
Sulphur dioxide, ionic reactions in, 243.

molecular compounds of, with amines, 243.

trioxide, sulphonation of aromatic compounds by, 649.

Sulphuryl chloride, halogenation with, 119.

Surfaces, freshly-formed, properties of, 252, 477.

T.

2:3:6:7:2':3':6':7'-Tetrabenzbisfluorenylideneazine, 560. 2:3:6:7:2':3':6':7'-Tetrabenz-9:9'-difluorenyl, 560.

Tetradeca-2:4:10:12-tetraen-7-yn-6:9-diol, 139.

Tetradeca-3:5:9:11-tetraen-7-yn-2:13-diol, 139.

1:2:3:4-Tetrahydroacridone, 426. 5':6':7':8'-Tetrahydro-1:2-(2':3'-naphtha)phenanthrene, 330.

Tetrahydro-y-pyran, 4-hydroxy-, and its derivatives, 300. Tetrahydropyrethrolone methyl ethers, and their semicarbazones, 644.

Tetrahydroisopyrethrolone, enol, and its acetate, 53.

Tetrahydro-γ-pyrone, and its derivatives, 300.

1:2:3:4-Tetrahydroquinolindoles, 618.

Tetramethoxy-9-methylphenanthrenes, 325.

Tetramethoxyphenanthrene-9-aldehydes, and their derivatives. 328.

Tetramethoxyphenanthrene-9-carboxylic acids, and their derivatives, 328.

2:3:5:6-Tetramethyl d-araboascorbic acid, 227.

3:3':5:5'-Tetramethyldiphenylmethane, 3:3'-4:4'-tetrahydroxy-,

2:3:4:6-Tetramethyl glucose, analysis of, mixed with di- and tri-methyl glucoses, 473.

Tetramethyl δ -idonolactone, 525.

Tetramethyl d-idose, 524.

Tetramethyl β -methyl-d-idoside, 524.

2:2:6:6-Tetramethyltetrahydro- γ -pyrone, 338.

Tetraphenylene, spectrum of, absorption, and structure, 73.

Thebaine, degradation products of, 506.

Theophylline-7- (β) -d-arabinoside, 594. a-(Theophylline-7)-a'-hydroxymethyldiglycollic aldehyde, 595.

Thiazole-2-amide, 5-amino-, and its 5-p-acetylbenzenesulphonyl derivative, 104.

Thiazole-2-carboxylic acid, 5-amino-, 104.

Thiazole-2-nitrile, 5-amino-, and its derivatives, 104.

Thiazole-2-thioamide, 5-amino-, and its derivatives, 103.

2-Thio-3-p-anisyl-5-methyltetrahydro-1:3:5-thiadiazine, 151.

2-Thio-3-(3'-chloro-4'-hydroxyphenyl)-5-methyltetrahydro-

1:3:5-thiadiazine, 151:

2-Thio-3-p-chlorophenyl-5-methyltetrahydro-1:3:5-thiadiazine,

2-Thio-3-(p-dimethylaminophenyl)-5-methyltetrahydro-1:3:5thiadiazine, 151

2-Thio-3:5- and 4:6-dimethyltetrahydro-1:3:5-thiadiazines, 151.

5-Thioformamido-4-d-xylosidamino-2-methylpyrimidine, 6-amino-, and its 4-triacetyl derivative, 320.

2-Thio-3-(p-hydroxyphenyl)-5-methyltetrahydro-1:3:5-thiadiazine, 151.

2-Thio-3- α -naphthyl-5-methyltetrahydro-1:3:5-thiadiazine, 151. Thionyl halides, reaction of, with hydroxy-compounds, effect of tertiary bases on, 85.

Thiophenol, o-nitro-, azo-compound from, 421.

2-Thio-3-phenyl-5-(\beta-diethylaminoethyl)tetrahydro-1:3:5-thiadiazine, 151.

2-Thio-3-phenyl-5- $(\beta$ -hydroxyethyl)tetrahydro-1:3:5-thiadiazine, 151.

2-Thio-3-phenyl-5-methyltetrahydro-1:3:5-thiadiazine, 151.

 β -Thymoxyethyldiethylamine, and its salts, 677. Thyroid, biochemistry of, 193.

Tilden Lecture, 208.

Stannous salts, reduction of ferric chloride by, 309.

Tolan, 4:4'-dibromo., 614.

Toluene, p-nitro-, reaction of, with sodium polysulphides, 4. sulphonation of, by sulphur trioxide, 469.

Toluene-p-sulphon-1-naphthalide, 2:3:4-trinitro-, 561.

o-Tolylcyanoacetic acid, ethyl ester, 271.

3-o-Tolyl-1-methylpiperidine-3-carboxylic acid, ethyl ester, and

its salts, 271. 4-(o-Tolyl)-1-methylpiperidine-4-carboxylic acid, ethyl ester, and its hydriodide, 267.

4-(c-Tolyl)-1-methylpiperidine-4-nitrile, and its salts, 267.

6-Tosyl 3:4-acetone 2-methyl a-methylgalactoside, 231.

2-Tosyl 3:6-anhydro-a-methylgalactopyranoside, 232.

2-Tosyl 4:6-benzylidene α - and β -methylgalactosides, 524. β - $(\alpha$ -Tosyl- γ -hydroxy- $\beta\beta$ -dimethylbutyramido)ethanesulphonic acid, sodium salt, 96.

2-Tosyl 4-methyl 3:6-anhydro-a-methylgalactopyranoside, 232.

2-Tosyl 3-methyl 4:6-benzylidene a-methylgalactoside, 525.

2-Tosyl a-methylgalactoside, 525.

6-Tosyl 2-methyl methylgalactoside, 231.

Tosylpantolactone, 96.

2-Tosyl 3:4:6-trimethyl a-methylgalactoside, 525. 2-Tosyl 3:4:6-trimethyl β -methylgalactoside, 526. Triacetone dialcohol, and its dehydration products, 338. 2:3:4-Triacetyl α -methylmannuronoside, 588. 4-Triacetyl-d-xylosidaminopyrimidine, 5:6-diamino-, and its 5-thioformyl derivative, 655. 1:2:3:4:5-Tribenz-\(\Delta^{1:3}\) 5:7-cyclooctatetraene, 7:8-diand its bromide, 71. spectrum of, absorption, and structure, 73. 1:2:3:4:5-Tribenz- $\Delta^{1:3}$ 6:7-cyclooctatetraene-7:8-dicarboxylic anhydride, 72. Tri-(2-carbethoxy-5-furfuryl)amine, 670. Triethylamine, compound of, with sulphur dioxide, 247. Triethylammonium hydrogen sulphite, 247. Triketohydrindene, photochemical reduction of, 366. 3:4:5-Trimethoxybenzaldehyde, and its derivatives, 323, 327. 3:4:5-Trimethoxybenzanilide, 323. 1-(3':4':5'-Trimethoxybenzoyl)-1:2-dihydroquinaldinonitrile, and 1-2'-nitro., 327. 3:4:5-Trimethoxybenzyl alcohol, and its 3:5-dinitrobenzoate, 323. 3:4:5-Trimethoxybenzylmalonic acid, and its ethyl ester, 324. 3:4:5-Trimethoxyphenylacetic acid, and its derivatives, 324. β -3:4:5-Trimethoxyphenylpropionic acid, 324. 2:3:5-Trimethyl d-araboascorbic acid, 227. 1:2:3-Trimethylbenzene, 4-amino-, and its acetyl derivative, 111. 2:3:5-Trimethyl 4-deoxyglucosaccharic acid, methylamide and methyl ester, 516. Trimethylene sorbitol, constitution of, 517. 2:3:5-Trimethyl gluconic acid, phenylhydrazide, 574. 2:3:5-Trimethyl γ -gluconolactone, 574. Trimethyl glucosaccharolactones, 571. 2:3:5-Trimethyl glucose, 574. 2:3:6-Trimethylglucose, analysis of, mixed with di- and tetramethyl glucoses, 473. Trimethyl glucurone, 586. 2:3:5-Trimethylmannonic acid, amide, 576. 2:3:5-Trimethyl γ -mannonolactone, 576. Trimethylmannosaccharic acid, diamide, 222. 2:3:5-Trimethyl mannosaccharic acid, diamide and methyl ester, 576. Trimethyl methylchondrosaminides, N-acetyl derivatives, 274. 2:3:4-Trimethyl α -methyl- α -galacturonoside, 134. 2:3:5-Trimethyl methylglucofuranoside, 574. 2:4:6-Trimethyl β-methylglucoside, synthesis of, and its 3-nitrate, 492, 495. 2:3:4-Trimethyl β -methylglycuronoside, 134. 3:4:6-Trimethyl β -methyl-d-idoside, 525. 2:3:5-Trimethyl methylmannofuranoside, 576. 2:3:4-Trimethyl α -methylmannoside, 133. 2:4:5-Trimethyl saccharic acid, amide, 571. —)**Tri-\beta-octyl** phosphite, 88. Triphenylethylene, reaction of, with phenanthraquinone, 387. $2-(3:4:5-Triphenylpyrrole)-2'-(3':5'-diphenylpyrrole)-\alpha-methyl$ trimethincyanine bromide, 484. Tripicolinatoiron, 26. Tri-2-pyridylarsine, 283. Tri-2-pyridylphosphine, 283. Triterpene group, 283.

Triterpene resinols, 28, 256, 527, 532.
Triterpenoid compounds, optical rotation and structure of, 659.
6-Trityl 2:3-dimethyl d-araboascorbic acid, 227.
6-Trityl methylglucofuranoside, 573.
6-Trityl β-methylglucoside 3-nitrate, and its 2:4-diacetyl derivative, 494.
6-Trityl α-methyl-d-mannofuranoside, 576.
6-Trityl 2:3:4-triacetyl α-methylmannoside, 133.
6-Trityl 2:3:5-trimethyl methylglucoside, 134.
6-Trityl 2:3:4-trimethyl β-methylglucoside, 134.
6-Trityl 2:3:4-trimethyl α-methylmannoside, 576.
6-Trityl 2:3:4-trimethyl α-methylmannoside, 576.
6-Trityl 2:3:4-trimethyl α-methylmannoside, 133.
Tryptophan, synthesis of, 624, 626, 629.
dl-Tryptophan, and its N-benzoyl derivative, 631.

II.

Unsaturated compounds, containing ethylenic halogen, reaction of, with amines, 371.Uronic acids, synthesis of, 131, 587.

٧.

isoValeryltropëine hydrobromide, synthesis of, 482.

Velocity of reaction in solution, effect of alkyl groups on, 422. Veratrylidenesuccinic acid, 6-nitro-, 537. Vinyl halides, spectra of, absorption, infra-red, 303. Vinylacetylene, condensation of, with crotonaldehyde, 140. 3-Vinyladipic acid,3-a-chloro-, and its di-p-phenylphenacyl ester, 102. 1-Vinyl-△³-cyclohexene, 3-chloro-1-a-chloro-, 101. Vitamin-A aldehyde. See Axerophthal. Volume, molecular, structure and, 380.

X.

Xanthopinacol, pyrolysis of, 305. 9-Xanthyldiphenylcarbinol, 70. m-Xylidines, inhibition of resonance in, 408. 9-d-Xylopyranosidoadenine, 655. 9-d-Xylopyranosidohypoxanthine, 656. 4-d-Xylosidamino-5-(2':4'-dichlorobenzeneazo)-2-methylpyrimidine, 6-amino-, and its 4-triacetyl derivative, 320. 4-d-Xylosidamino-5-(2':5'-dichlorobenzeneazo)pyrimidines, 6-amino-, and their 4-triacetyl derivatives, 655, 656. 6-d-Xylosidamino-2-methylpurine, and its 6-triacetyl derivative, 320. 4-d-Xylosidamino-5-p-nitrobenzeneazo-2-methylpyrimidine, 6-amino-, 320. 6-d-Xylosidaminopurine, 655. 4-d-Xylosidaminopyrimidine-I, 6-amino-, 655. 9-d-Xylosido-2-methyladenine, 321. 9-d-Xylosido-2-methylhypoxanthine, 321.

V

Yeast ribonucleic acid, constitution of, 30, 33.