INDEX OF SUBJECTS, 1939.

A.

Acetals, formation of, from ketones, 1135.

Acetaldehyde, combustion zones of, 1703.

Acetaldehyde-ammonia, decomposition of, in acid solution, 968.

Acetanilide, N-chloro-, rearrangement of, in chlorobenzene, 1774.

Acetoacetanilide, association of, 484.

copper derivative, 488.

Acetoacetethylanilide, and its metallic derivatives, 488. Acetoacetomethylanilide, metallic derivatives, 488. Acetoaceto-m-toluidide, cupric derivative, 488. 5-Acetoacetyl-2-isopropenylcoumarone, 6-hydroxv-,

5-Acetoacetyl-2-isopropylcoumaran, 6-hydroxy-, 936.

1-Aceto-2-naphthalide, 3-iodo-1-nitro-, 346.

Acetone, bromination of, at low temperatures, 1573. in aqueous acetic acid, 1353.

condensation of, with o-cresol, 1421. condensation products of, with cresols, hydroxy-

quinol, and pyrogallol, 195.

vapour pressure of, effect of alcohols on, 1135.

3:4-Acetone 1:6-anhydrogalactopyranose, 389.

3:4-Acetone β -1:6-anhydrogalactose, derivatives of,

Acetophenone, bromination of, in aqueous acetic acid, kinetics of, 1353.

depolarisation potential of, 546.

δ-methylthiosemicarbazone, 1050.

photolysis of, 590.

Acetophenone, 2:3;6-trihydroxy-, and its triacetyl derivative, 1925.

4-iodo-3-nitro-, 1952.

Acetophenones, polyhydroxy-, Gattermann's reaction with, 949.

Acetylcarbazole, trichloro-, and its acetyl derivative,

6-Acetylcoumarin-3-carboxylic acid, 5-hydroxy-, and its ethyl ester, 134.

8-Acetylcoumarin-3-carboxylic acid, 7-hydroxy-, and its ethyl ester, 951.

1-Acetyl-2:3-dihydroindeno(2':3':2:3)indole. 3-nitro-2hydroxy-, 2-acetyl derivative, 1535.

6- and 8-Acetyl-2:2-dimethylchromans, oxy-, and their derivatives, 1259.

3-Acetyl-8-ethylcoumarin-6-carboxylic acid, 5-hydroxy-, methyl ester, 301.

6-Acetyl-8-ethylcoumarin-3-carboxylic acid, 5-hydroxy-, 950. 1-Acetylindeno(2':3':2:3)indole, and its nitro-deriv-

6-Acetyl-7-methylcoumarin-3-carboxylic acid, 5-hydroxy-, 950.

N-Acetyl- β -methylglucosaminide, 125.

Acetyl-2-isopropylcoumarans, 6-hydroxy-, 935. Acids, dibasic, acid salts, ionic equilibria in, 1850.

carboxylic, esterification of, 838, 840.

fatty, esterification of, 593. fatty higher, ammonium salts, instability of, 230. organic, dissociation constants of, 446.

Acraldehyde, combustion zones of, 1703.

Acridine derivatives, 476.

5-Acridylaldehydo-p-ethylaminoanil, 4.

Address, presidential, 707.

Adhesion in detergence, 573.

Adsorption, measurement of, technique for, 139. relative effect of inhibitants on, 1750.

Agar-agar, studies on, 1844.

Alcohols, inactive, resolution of, by means of tartranilic esters, 638.

Aldehydes, aromatic, photochemical reaction of, with phenanthraquinone, 1430. cyclic, $\alpha\beta$ -unsaturated, reactions of, 264, 1531.

oxidation of, 1703, 1711.

Aldines, 968. Alginic acid, structure of, 1880.

Aliphatic compounds, higher, 615, 974.

Alizarin-3-sulphonic acid, 4-bromo-, potassium salt, 818.

Alkali hydrogen fluorides, 111.

p-Alkoxybenzoic acids, mesomorphism and polymorphism of, 420.

p-Alkoxycinnamic acids, mesomorphism and polymorphism of, 420.

Alkyl bromides, hydrolysis of, in acetone, effect of mercuric bromide on, 1872.

carbonates, physical properties of, 75.

properties of, in dipolar and non-polar liquids,

groups, polar effects of, 1150. halides, identification of, 1442.

2'-Alkylmesobenzanthrones, synthesis of, 948.

3'-Alkylmesobenzanthrones, synthesis of, 944.

Alkylbenzenes, dipole moments of, 1144.

Alkylglutaric acids, dissociation constants of, 446. Alkylcyclohexanes, dipole moments of, 1144.

1-Alkylthiobenzthiazoles, conversion of, into 1-thio-2alkyl-1:2-dihydrobenzthiazoles, 473.

S-Alkylthiourea picrates, 1443.

Aluminium chloride, as reagent for condensation of β -ketonic esters with phenols, 1250.

Amidines, trypanocidal activity of, 1253.

Amidoximes, trypanocidal activity of, 1253.

Amine nitrites, aromatic, preparation and decomposition of, 419.

Amines, aliphatic, photolysis of, 17.

secondary, preparation of, 1787.

diazotisation and nitrosation of, 401, 419, 1089.

tertiary, reaction of, with polyhalogeno-paraffins, 644.

Amino-acids, syntheses of, 1564.

Aminonitro-compounds, detection in, of m-orientation,

Ammines, formation of, in non-aqueous solutions,

Amminotributylarsinepalladium, dichloro-, 1634.

Ammonium hydroxide, reaction of, with metallic salts in alcoholic solution, 1337.

salts, quaternary, formation of, in benzenenitrobenzene mixtures, 1378.

Ammonium organic compounds, quaternary, form-2-p-Anisyloxyphenylarsonic acid, 1723. ation of, from dihalogenoparaffins in acetone 2-p-Anisyloxyphenyldichloroarsine, 1723. solution, 412. N-p-Anisylphthalimide, 3-chloro-, 136. Ammonium 4:5-(o)-phenanthrolineaurocyanide, γ -o-Anisylpropyl 3:5-dinitrobenzoate, 789. Annual General Meeting, 679. Amphiporine from marine worms, 1365. Anthranilic acid, ethyl ester, hydrolysis of, by alkalis, Amphiporus lactifloreus, amphiporine from, 1365. n-Amyl alcohol, equilibrium constant for isotropic γ -9-Anthranylbutyric acid, 268. hydrogen exchange in aqueous mixtures of, 61. Anthraquinones, peri-hydroxy-, synthesis of, with boric acid. 398. -)- β -n-Amyl alcohol, and its tartranilate, 639. 4'-Amylaminoazobenzene-4-sulphonic acid, and its Anthraquinone series, halogenation in, 816. potassium salt, 1384. Anthraquinone-2-sulphonic acid, 4-bromo-1-hydroxy-, isoAmylaniline, p-amino-, and its dihydrochloride, 818. 1385.Anthrarufin-2:6-disulphonic acid, tetrabromo-, and its n-Amyl deuteralcohol, Raman spectrum and vapour potassium salt, 818. pressure of, 61.
N-iso Amyldiazoaminobenzene, 4'-nitro-, 1385. Apigenin, synthesis of, 91. Apple pectin, araban component of, 454. trans-p-n-Amyloxycinnamic acid, polymorphism of. Araban, and its acetate, 452. 425. from citrus pectin, 1865. methylated, 458. isoAmylphloroglucinol, 1603. a-Amyradienol, and its esters, 1305. Arabic acid, constitution of, 744, 1724. a-Amyrane, dihydroxy-, and its diacetyl derivative, Arabo-ascorbic acid, methyl ethers of, 246. Aromatic compounds, nuclear reactivity of, 1383. β -Amyrane, dihydroxy-, and its diacetyl derivative, effect of substitution on, 1720. 1047. with benzene chains, absorption spectra and a-Amyranonyl benzoate, 1077. structure of, 1170. a-Amyrenedione, 1305. Arsenic, determination of, in inorganic and organic iso-a-Amyrenonol, and its acetate and benzoate, compounds, 284. Arsenobenzene, configuration and dipole moment of, $iso-\beta$ -Amyrenonol, and its acetate, 1047. β -Amyrin, thio-compound from, and its oxidation Arsines, ditertiary, synthesis of, 610. products, 755. 1-4'-Arsonobenzeneazo-2-octylaminonaphthalene, 3. Analysis, organic qualitative, 1442. β -p-Arsonophenylpropionic acid, and its sodium salt Aneurin, possible precursor of, 443. and derivatives, 156, 157. Anhydroacetonebenzil, action of hydrogen chloride on, Artabotrine, and its derivatives, 995. Artabotrinine, and its hydrochloride, and nitroso-, 3:4-Anhydro-l-galactose, derivatives of, from agar, 1844. Artabotrys suaveolens, alkaloids of, 991. 3:6-Anhydro- β -methyl-d-galactoside, 1848. Aryl o-alkoxystyryl ketone di bromides, synthesis of Anils, geometrical isomerism of, 1392. flavones from, 94. phototropy of, 1457. Arylaminophthalic acids, derivatives of, 134. Anilines, halogeno-, and nitro-, dissociation constants 2'-Arylmesobenzanthrones, synthesis of, 948. of, 1137. Arylsulphonylbenzisothiazolones, preparation and re- β -Anilinocrotonic acid, β -p-amino-, acetyl derivative, actions of, 760. and β -p-bromo, ethyl esters, 565. Aryltrimethylammonium iodides, formation of, in Anilino-2-p-dimethylaminoanilomethylquinoline, methyl-alcoholic solution, 1345. amino-, acetyl derivative, methiodide, 492. Asymmetric induction, intramolecular, 1536. 4-Anilino-2-p-dimethylaminostyrylquinoline, and Atoms, quadricovalent, stereochemistry of, 426. p-amino-, acetyl derivative, methiodides and Atomic weights, report on, 351. methochlorides, 491. table of, 356. 8-Anilino-\(\psi\)-indoxylspirocyclopentane, Axerophthylideneacetone, ozonolysis and reduction of, 7:9-dinitro-. 1563. β-Anilino-a-methylcrotonic acid, β-p-amino-, acetyl 1-Azabicyclo[1:2:3]octane, and its derivatives, 677. derivative, ethyl ester, 565. cis-p-Azoanisole, 1314. 4-Anilino-2-methylquinoline, and 4-p-amino-, acetyl Azobenzene, decomposition of diazo-perbromides derivative, and their metho-salts, 491. from, 1067. 3-Anilinophthalanil, 137. Azobenzene, 2:2'-dihydroxy-, chromic compounds of, 3-Anilinophthalhydrazide, 138. 2-Anilinothiobenzobenzenesulphonylamide, and 5-4:4'-dihydroxy-. See p-Azophenol. cis-Azobenzene, p-iodo-, 1315. chloro-, 762. 2-Anilinothiobenzo-p-toluenesulphonylamide, 762. mono- and di-nitro-derivatives, 1313. Anionotropy in cyclic systems, 567, 1408. cis-Azobenzenes, spectra of, absorption, 1315. 3-p-Anisidino-N-p-anisylphthalimide, 137. 5-p-Anisidino-7-ethoxyacridine, 3-amino-, nitro-, and their derivatives, 478. cis- and trans-Azobenzenes, crystal structure and configuration of, 232. and dipole moments of, 531. 3-p-Anisidinophthalhydrazide, 139. cis-Azo-compounds, 1309, 1315. Anisole, preparation of, 1169 o-Azophenol methyl ether, 1314. o-Anisoyl-2-methoxy-3-naphthoylmethane, bromo-, 1682. picrate of, 1314. o-Anisoyl-p-toluoylmethane, 5-bromo-, and bromo-5cis-m-Azotoluene, 1313. bromo-, 95. - -- Anisylbutyric acid, and its methyl ether, 789.

 $1-\beta$ -o-Anisylethyl-2:6-dimethylcyclohexan-1-ol, 788.

 $1-\beta$ -o-Anisylethyl-2:6-dimethylcyclohexene, 787.

p-Azophenols, isomeric, dipole moments of, 535. p-Azotoluene, dipole moment of, 533. Azoxybenzene, tetrachloro-4:4'-dinitro-, 1313. oo'-diiodo-, 1315. 5-Azoxy-4-methoxyphthalic acid, methyl ester, 1162. B.

Bacteria, growth of, physical chemistry of, 1683, 1692. Bacterium lactis aerogenes, growth of, effect of magnesium on, in media containing phosphate, 1692. growth and population of, in synthetic media, 1683. Balance sheets, 696.

Balanites ægyptica, sapogenin of, 800.

Bally's reaction, 944.

Barium hydroxide, second dissociation constant of, 349.

Bases, aromatic, complex formation by, with polynitro-compounds, 98, 972.

Bassia, bassic acid from species of, 1124.

Bassic acid, and its derivatives, 1124.

Bebeerine, constitution of, 1157.

Benzanilide, N-bromo-, rearrangement of, in chlorobenzene, 1096.

1:2-Benzanthracene, preparation of, 804.

(1:2-Benzanthranyl-10-methyl)malonic acid, and its ethyl ester and sodium salt, 805.

N-(1:2-Benzanthranyl-10-methyl)piperidine, and its hydrochloride, 805.

1:2-Benzanthranyl-10-methylpyridinium chloride and picrate, 805.

 β -(1:2-Benz-10-anthranyl) propionic acid, 805.

1:2-Benzanthraquinone-5-carboxylic acid, and its methyl ester, 269.

1:2-Benz-5-anthroic acid, and its derivatives, 270. Benzanthrones, 944, 948

Benzene nucleus, reactivity of, 1383.

Benzene, halogeno-derivatives, viscosity of, 1342. halogenonitro-derivatives, reactions of, with aromatic thiols, 1094.

nitro-, sulphonation of, by sulphur trioxide, 1372. nitroso-, substituted derivatives, absorption spectra of, 1807.

Benzene series, restricted rotation and molecular dissymmetry in, 460.

Benzeneazocholesterylaminonaphthalenes, 3.

Benzeneazo-o-cresotic acid, copper salts, 835.

Benzeneazo- β -naphthol, o-hydroxy-, chromic, ferric, nickel, and zinc compounds of, 830.

o-iodo-, and its trans-methyl ether, 1314.

5'-nitro-2'-hydroxy-, chromic compounds of, 831.

Benzeneazo-β-naphthols, dipole moments of, 534.

cis-Benzeneazo-a-naphthyl methyl ether, 1314.

Benzeneazophloroglucinol, 4-hydroxy-, tetramethyl ether, 1314.

Benzeneazosalicylic acid, copper and nickel salts, 835. Benzeneazostearoylaminonaphthalenes, 3.

Benzenediazocyanides, o-chloro-, 1802.

Benzenediazonium chloride, reactions of, with metals,

Benzenesulphonamide, 3-amino-4-hydroxy-, p-hydroxy-, 3-nitro-4-amino-, and its acetyl derivative, and 3-nitro-4-hydroxy-, 609.

Benzenesulphonyl chloride, 3-nitro-4-amino-, acetyl derivative, 609.

1-Benzenesulphonylbenzisothiazolone, and 4-monoand 4:6-di-chloro-, 761

6-Benzenesulphonyl-2:3-diphenylquinoxaline, 905.

2-Benzenesulphonyloxybenzisothiazole, 761.

Benzhydryl carbonate, 313.

Benzhydrylamines, bromo-, chloro-, and iodo-, and their derivatives, 1959.

4-substituted, optical rotation of, 1958.

Benzhydryl-2:9-diphenylfluorenol, 1-hydroxy-, 395.

Benzil hydrazone, nickel complex of, 260. oxime-hydrazones, metallic complexes of, 257.

structure of, 1614.

Benzil acetone azine, and its nickel complex, 261. Benzil benzaldehyde azine, 262.

Benzil-p-dimethylaminoanil, and its oxide, 1429.

6:7-Benzoflavone, synthesis of, and 2'-hydroxy-, and its acetyl derivative, 1681.

Benzoic acid, esters, alkaline hydrolysis of, 1780.

halogeno- and nitro-derivatives, Benzoic acid. dissociation constants of, 640.

Benzophenone, photolysis of, 590

Benzophenoneanil, dipole moment of, 1392.

Benzoquinone derivatives, action of alcoholic methylamine on, 1446.

6-O-Benzoylæsculetin, 1267.

Benzoyl-5-bromo-o-anisoylmethane, and bromo-, 95. β -Benzoyl- α -(6-bromo-3:4-methylenedioxyphenyl)-

propionitrile, 97.

2-Benzoyl-3:6-diphenylbenzoic acid, and 2-p-bromo-, 394.

Benzoylformyloxindole phenylhydrazone, absorption spectrum of, and of its derivatives, 189

Benzoyl-2-methoxy-3-naphthoylmethane, 1682.

6-Benzoyloxy-7-methoxycoumarin, 1267.

Benzoylphenylbenzoic acids, 396 1-Benzoyl-2-phenylfluorenone, 395.

Benzthiazole derivatives, reactions of, 470, 473.

 β -p-Benzylbenzoylpropionic acid, 268. Benzyldimethyltelluronium bromide, 166.

a- and β -Benzylglucosaminides, derivatives of, 277.

Benzylidene chloride, condensation of, with o-xylene,

Benzylidene-p-dimethylaminoaniline, 2:4-dinitro-, 772. 2-Benzylidene-3-ketoquinuclidine, and its phenylhydrazone, 1243.

4:6-Benzylidene β -methylgalactoside, 1248.

Benzylmalonic acid, o-bromo-, 796.

6-Benzyloxyacetophenone, 2-mono- and 2:5-di-hydroxy-, 1924.

1-p-Benzyloxybenzylidenecoumaran-2-one, derivatives, 1005.

4'-Benzyloxyflavone, 1005.

4'-Benzyloxyflavonol, 1005.

6-Benzyloxy-4-methoxycoumarone-2-carboxylic ethyl ester, 931.

5-Benzyloxy-3-methoxy-2-formylphenoxyacetic and its ethyl ester, and its dinitrophenylhydrazone,

1-Benzyl-2-pyridoneimine sulphate, 1857.

1-Benzylisoquinoline, synthesis of, and its 2:4dinitrophenylhydrazone, 361.

2-Benzylthio- β -naphthathiazole, 476.

Benzylisothiourea, o-bromo-, and m-chloro-, pierates, 1443.

alloBergapten, synthesis of, 930.

Betabacterium vermiformé, dextran synthesised by, 585.

Betacoccus arabinosaceous hæmolyticus. See Leuconostoc dextranicum.

Betulic acid, and its derivatives, 1269.

cis-trans-Bisbenzeneazobenzenes, 1315.

Bisbenzeneazodiphenyls, 1315.

2:2'-Bisbenzenesulphonylcarbamyldiphenyl disulphide, and 4:4'-dichloro-, 762.

Bis(carbethoxyacetyl) peroxide, preparation of, 1112.

Bis-(2:5-dichlorophenylthio)ethane, 1067.

3:3'-Bisdiallylaminobenzylideneazine, 1094.

3:3'-Bisdibenzylaminobenzylideneazine, 1094.

1:10-Bis-(4:5-dihydro-2-glyoxalinyl)decane, hydrochloride, 1257.

Bis-(3:4-dimethoxybenzyl)succinic acid, esters, 1240.

 $a\delta\text{-Bis-}(3\text{:}4\text{-dimethoxyphenyl})\text{-}\beta\gamma\text{-di}(\text{hydroxymethyl})\text{-}$ butane, and its derivatives, 1240.

2:2'-Bis-p-dimethylaminostyryl-4:6'-diquinolylamine dimethiodide, 492.

Bisethylenediaminocobaltic chlorides, dichloro-, isomeric, 1490.

2:5-Bismethylamino-1:4-benzoquinone, 1450.

4:5-Bismethylamino-1:2-benzoquinone, 1453.

di

2:5-Bismethylamino-3-methoxy-1:4-benzoquinone,

3:6-Bismethylamino-4-methoxy-2:5-toluquinone, 1452. 5:6-Bismethylamino-4-methoxy-2:3-toluquinone, 1455. Bis-(1-methyl-2-quinoline)azamethincyanine iodide.

Biology, use of isotopes in, 1213.

Bis(phenyldi-n-butylarsine) dichloropalladium, and dichloro-, 1631.

pp'-Bis-(2-pyridylamino)diphenylsulphone, 1202.

pp'-Bis-(2-quinolylamino)diphenylsulphone, 1202. 2:2'-Bis-p-toluenesulphonylcarbamyldiphenyl disulphide, 761.

Bis(triphenylphosphine)- μ -dichlorodipalladium, chloro-, 1632.

Bis(triphenylphosphine) di chloropalladium, 1631.

Blanc rule, 850.

Boiling-point, Burnop's function for, 292.

Brilliant-green leuco-cyanide, phototropy of, in solution, 1457.

Bromine, addition of, to olefines, 224, 1515.

Bromine chloride, addition of, to olefinic compounds,

Bromine compounds, radioactive, preparation of, 1278. Brucine, 603.

n- and iso-Butaldehydes, combustion zones of, 1703. Butane, inflammation of, in air, 344.

Butein, synthesis of, 1018.

p-Butoxymethylaniline, and its picrate, 1170.

n-Butyric acid, equilibrium of, with sodium chloride and water, 742.

d-n-Butyric acid, ay-diamino-, and its derivatives,

isoButyric acid, equilibrium of, with potassium isobutyrate or sodium chloride and water, 742.

6-Butyryl-4-methylcoumarin, 5-hydroxy-, and its derivatives, 1252.

n-Butyl bromide, exchange reaction of, with bromine, 1279.

isoButyl bromide, exchange reaction of, with bromine, 1836.

5-n-Butylamino-7-ethoxyacridine, 3-amino-, acetyl derivative, and 3-nitro-, 478.

N-tert.-Butyldiazoaminobenzene, 4'-nitro-, 1385.

isoButylenediaminodichloropalladium, 1757.

iso Butylene diaminostilbene diaminopalladoussalts,

tert.-Butylglyoxal, and its hydrazone, and its nickel complex, 261.

C.

Cadmium chloride, equilibrium of, with cobalt and nickel chlorides and water, 646.

with cobalt, nickel, and sodium chlorides and water, 653.

Calcium carbonate, adhesion of, to quartz in detergents, 573.

Calycanine, 514.

Calycanthine, and its derivatives, 510.

Camphene hydrochloride, exchange of deuterium and of radioactive chlorine between hydrogen chloride

Camphor, addition of magnesium iodide to, 1961.

Carbazole-3:6-dicarboxylic acid, 1954.

2-δ-Carbethoxybutylcycloheptanone, and its derivative, 186.

3-Carbethoxy-8-ethylcoumarin-6-carboxylic acid, 5hydroxy-, methyl ester, 301.

 β -Carbethoxylævulic acid, ethyl ester, thiophen derivatives from, 1116.

N-Carbobenzyloxy- α - and - β -methylglucosaminides,

N-Carbobenzyloxytetra-acetyl glucosamine, 125.

Carbon rings, fused, 842, 850.

Carbon oxides, heats of adsorption of, on manganese oxide, 859.

Carbonates, thermal stability of, 310.

Carbon-carbon linkings, force constant, internuclear distance, and dissociation energy for, 884.

Carbonyl compounds, reactions of, with aliphatic diazo-compounds, 181.

Carborundum, adhesion of, to quartz in detergents,

Carbostyril, derivatives, compounds of, with polynitro-compounds, 1858.

3-(2'-Carboxyanilino)phthalanil, 6-chloro-, 138.

o-Carboxybenzeneazo- β -naphthol, chromic, nickel, and zinc compounds, 834.

p-Carboxybenzeneazo-β-naphthol, copper, chromic, and ferric salts, 834.

5-Carboxy-3-methoxy-2-ethoxydiphenyl ether, 1166.

1-Carboxymethylcyclohexane-1-succinic their derivatives, 84.

Carcinogenics, growth-inhibitory properties of, 802.

1- Δ^3 -Carene 5:6-epoxide, and its derivatives, 1496. Carvone, addition of magnesium iodide to, 1961.

Caryophyllene, additive compound of, with maleic anhydride, 1853.

constitution of, 537.

Caryophyllene oxide, 539.

Catalysis, 1203.

acid, in non-aqueous solvents, 1096, 1774.

relative effect of inhibitants on, 1750. Cellulose, carbonisation of, 67.

methylated, methyl glucose derivatives from, 249. methylation of, in air and nitrogen, 1885.

in inert atmospheres, 1899.

4-Cetylaminoazobenzene-4'-arsonic acid, 3.

Cetylaniline, and its hydrochloride, and N-nitroso-, 4. N-Cetyldiazoaminobenzene, 4-nitro-, 1386.

trans-p-Cetyloxycinnamic acid, polymorphism of, 425.

Chalkones, 91, 94, 96, 1004.

Chemiluminescent compounds, organic, 836.

Chemotherapeuticals, lipophilic, synthesis of, 1.

Cherry gum, constitution of, 558.

Chitosamine, configuration of, 271.

Chlorine, addition of, to olefinic compounds, 1509. energy of oxygen bond to, 1332.

isotopes, radioactive, investigation of cis-transinterconversion with, 1490.

radioactive, exchange of, 1188.

Chlorine trioxide, heat of decomposition of, 1332.

Chlorosulphinic acid, esters, 99.

Chlorosulphonic acid, esters, 99. Cholanic acid, 3-hydroxy-, acetyl derivative, methyl ester, 541.

Cholestane, 5-chloro-3:6-dihydroxy-, 6-chloro-3:5-dihydroxy-, and 3:5:6-trihydroxy-, benzoyl derivatives, 1359.

Cholestane-3:5-diol, 6-hydroxy-, acetyl derivative, 1081.

Cholestane-3:6-dione, 1082.

Cholestane-3:6-dione 2:5-oxide, and its bisdinitrophenylhydrazone, 1082.

Cholestane-3:5:6-triols, stereochemistry of, 1078.

Cholestan-5-ol-3-one, 2-mono- and 2:2-di-6-hydroxy-, and 6-hydroxy-, acetyl derivatives, 1081.

Cholestan-5-ol-6-one, 3-hydroxy-, acetyl derivative, 1083.

Cholestan-6-ol-3-one 2:5-oxide, 1082.

Cholestan-3-one 2:5-oxide, 6-hydroxy-, acetyl derivative, 1082.

 Δ^4 -Cholestene, 3:6-dihydroxy-, 3-benzoyl derivative, 1359.

 Δ^4 -Cholesten-6-ol-3-one, 1081.

△4-Cholesten-3-one, 6-hydroxy-, acetyl derivative, Cholesteryl chloride, thermolysis of, 1019. α - and β -Cholesteryl benzoate oxides, reactions of, 1356. N-Cholesterylaniline, N-nitroso-, 4. Cholesterylquinine, and its hydrochloride, 2. Chromium sesquioxide, heat of adsorption of gases on, trioxide (chromic anhydride), decomposition of, 56. oxides, 55. magnetic susceptibilities of, 1433. Chromium ions, complex, racemising properties of, Chromones of naphthalene series, 1679, 1681. Chrysin, synthesis of, 91. Cichoriin, 1266. Cinchona alkaloids, modified, 240, 1294. 8-Cinnamoyl-2:2-dimethylchroman, 5:7-dihydroxy-, α-Cinnamylidenediethyl ketone, and its 2:4-dinitrophenylhydrazone, 1563. Citronellylideneacetic acid, 1544. Citrus araban, 1865. β -cycloCitrylideneacetaldehyde semicarbazone, 1556. cycloCitrylidenecrotonaldehyde, and its derivatives, 1559. Coal, bituminous, carbonisation of, 67. Cobalt chloride, equilibrium of, with cadmium and copper chlorides and water, 646. with cadmium and sodium chlorides and water, 653. Cobalt ions, complex, racemising properties of, 1937. Coke, from bituminous coal and from cellulose, analyses and crystallography of, 71. Compounds, co-ordination, cis-trans-interconversion of, 1490. optically active, racemisation of, 1937. Constitution and physical properties, 1862. Co-ordination compounds. See under Compounds. Copper :-Cupric chloride, equilibrium of, with cobalt chloride and water, 646. Cornus florida, betulic acid from, 1267. Coumarone-5-carboxylic acid, 4-hydroxy-, and its methyl ester, 1427. Cracking, mechanism of, 375. o-Cresol, condensation of, with acetone, 1421. m- and p-Cresols, condensation of, with acetone, 195. Croton tiglium, nucleoside from seeds of, 1784. Crotonoside, 1784. Croweacic acid, structure and synthesis of, 442. Croweacin, structure and synthesis of, 439. Croweacin, dibromo-, dibromide, 442. isoCroweacin, 441. d-Cryptol p-nitrobenzoate, 265 trans-d-Cryptol, reactions of, 264. cis- and trans-Cryptols, and their derivatives, 1531. d-Cryptol- α -naphthylurethane, 266. d-Cryptone, reactions of, 264. semicarbazone, 266. dl-Cryptone, and its derivatives, 1531. Crystallisation, low-temperature, 972. Cumene, 3-bromo-, and 3-bromo-4-amino-, and its acetyl derivative, 1302. Curare alkaloids, 1157. l- α - and - β -Curcumenes, and their derivatives, 1504. β-Curcumenol, and its derivatives, 1509. l- β -Curcumenol, and its derivatives, 1509 β -Curcumenylic acid, and its derivatives, 1509. Cyanines, preparation of, 143. Diazo-compounds, aliphatic, 4'-Cyanines, preparation of, 1008. Cvanogen:

Hydrocyanic acid, tetrapolymer, constitution of, 492.

1979 Cyclic compounds, anionotropy and prototropy in, 567. D. Dahlia variabilis, yellow colouring matter of, 1017. Damson gum, constitution of, 1482. Decadeuterofluorene, and its picrate, 430. Decadeuteropyrene, and its picrate, 430. Decane bis-(NN'-diphenylcar bonamidine), 1256. Decanebis-(N-cyclohexylcarbonamidine), and its dihydrochloride, 1256. Decane-1-carbonitrile-10-carbonamide, 1256. Decane-1:4-dicarbonamidine dihydrochloride, 1256. Decane-1:10-dicarbonamidoxime, and its derivatives, Decarboxylation, mechanism of, 809. a-Decodimyristin, 1520. β -Decodimyristin, 1142. 2-Decylaminopyridine, 1856. p-n-Decyloxybenzoic acid, polymorphism of, 424. trans-p-n-Decyloxycinnamic acid, polymorphism of, 425. 1-Decyl-2-pyridoneimine sulphate, 1856. Dehydro- β -amyrenyl acetate, 1047. Dehydroelliptone, 1103. Dehydrogenation, palladous chloride as agent for, 872. Dehydromethyl-linalool, 438. Dehydrotetrahydrosumatrol, synthesis of, 1601. Deoxy- β -naphthoin, 200. Derris elliptica, l-elliptone from, 1099. Derris malaccensis, l-a-toxicarol from, 812. Detergence, adhesion in, 573. Deuterium atoms, optical activity due to hydrogen atoms and, 431. exchange of, 1188. symmetrically placed with hydrogen, molecular dissymmetry due to, 1960. Deuterium chloride, generator for, 1194. oxide, exchange reaction of, with cis- and transglutaconic acids, 1673. Dextran, from Betabacterium vermiformé, 585. from Leuconostoc dextranicum, 581. 3:6-Diacetylcoumarin, 5-hydroxy-, 134. 3:8-Diacetylcoumarin, 7-hydroxy-, 951. 5:5'-Diacetyl-3:3'-dimethyldiphenylmethane, 2:4:6:2':4':6'-hexahydroxy-, 1585. 3:6-Diacetyl-8-ethylcoumarin, 5-hydroxy-, 950. 6:6'-Diacetyl-2:2:2':2'-tetramethyl-8:8'-dichromanyl-methane, 5:7:5':7'-tetrahydroxy-, 1593. 8:8'-Diacetyl-2:2:2':2'-tetramethyl-6:6'-dichromanylmethane, 5:7:5':7'-tetrahydroxy-, 1586. m-Dialkylaminobenzaldehydes, preparation of, 1092. m-Diallylaminobenzaldehyde, and its derivatives, Diamino-compounds, detection in, of m-orientation, 4-Diisoamylaminoazobenzene, 4'-nitro-, 1384. 4-Diisoamylaminoazobenzene-4'-sulphonic acid, and its potassium salt, 1384. Diisoamylaniline, preparation of, and its picrate, 1386. Diisoamylaniline, p-amino-, hydrochloride and benzoyl derivative of, 1384. 1:5-Dianilinonaphthalene, 1115. 3:6-Dianilinophthalanil, 137. 3:6-Dianilinophthalhydrazide, 139. 3:6-Di-p-anisidino-N-p-anisylphthalimide, 138. Diarylamines, colour reaction for, 1808. 1:3-Diazalines, cyclic, 1057

carbonyl derivatives, 181.

Diazocyanides, 1796.

aromatic, decomposition of, 864, 1792, 1796, 1805.

reactions of, with

```
Diazonium chlorides, reactions of, with esters and
  nitriles, 1792
ω-Diazo-o-phenylacetophenone, 1840.
10:10'-Di-(1:2-benzanthranyl) methane, 804.
1:2:3:4-Dibenz-9-anthrone, 493.
1:2:5:10-Dibenz-9-anthrone, 269.
3:4:8:9-Dibenzo-5:10-diazapyrene, synthesis of, 1114.
2:3-Dibenzoyl 4:6-benzylidene \beta-methylgalactose, 1249.
2:3-Dibenzoyl \beta-methylgalactoside, 1249.
m-Dibenzylaminobenzaldehyde, and its derivatives,
  1094.
Dibenzyl-4:4'-dicarbonamidoxime, and its dihydro-
  chloride, 1256.
2:6-Dibenzyloxyacetophenone, 1924.
Dibenzylsulphidodiethylbromogold, 766.
Dibenzylsulphidodimethyliodogold, 766.
Dibenzyltoluidines, complex compounds of, with
  polynitro-compounds, 1861.
4-Diisobutylaminoazobenzene, 4'-nitro-, 1385.
4'-Diisobutylaminoazobenzene-4-sulphonic acid, and
  its potassium salt, 1385.
Diisobutylaniline picrate, 1386.
Dissobutylaniline, p-amino-, hydrochloride and benz-
  oyl derivative of, and p-nitroso-, and its hydro-
  chloride, 1385.
{\bf 3:6\text{-}Di\text{-}(2'\text{-}carboxyanilino)} phthalanil,\ 138.
4-Dicetylaminoazobenzene, 4'-nitro-, 1385.
Dideuteracetylene, polymerisation of, 429.
\alpha\beta-Di-(3:4-dimethoxybenzyl) butyrolactones, and their
  dibromo- and dinitro-derivatives, 155.
a\beta-Di-(3:4-dimethoxybenzyl)succinic acids, and their
  salts and derivatives, 154.
3:4-Di-(3':4'-dimethoxybenzyl)tetrahydrofuran, 1056.
a\delta-Di-(3:4-dimethoxyphenyl)-\beta\gamma-di(hydroxymethyl)-
butane, and a-hydroxy-, 1056.
Di-(5-ethoxy-3-carboxy-2-methyl-4-thienyl)-4'-hydr-
  oxy-3'-methoxyphenylmethane, 1117.
\textbf{Di-}(5-ethoxy-3-carboxy-2-methyl-4-thienyl) \textbf{phenyl-}
  methane, 1117.
2:2'-Diethoxydiphenyl ether, 1165.
Diethyl ether. See Ethyl ether.
m-Diethylaminobenzaldehyde, and its derivatives,
4-p-Diethylaminoethylamino-6-acetamidoquinaldine
  hydrochloride, 566.
5-\beta-Diethylaminoethylamino-7-methoxyacridine,
  amino-, 478.
4-\beta-Diethylaminoethylaminoquinaldine, 6-nitro-, 566.
2:2'-Diethyl-3:4-benzoxathiacyanine iodide. See (2-
  Ethyl-3:4-benz-1-benzoxazole)(2-ethyl-1-benz-
  thiazole) methin cyanine iodide.
2:2'-Diethyl-5:6-benzoxathiacyanine iodide. See (2-
  {\bf Ethyl\text{-}5:} 6\text{-}benz\text{-}1\text{-}benzoxaz{\color{red}{\bf o}}le) (2\text{-}ethyl\text{-}1\text{-}benz\text{-}
  thiazole) methin cyanine iodide.
                                                       (2-
2:2'-Diethyl-5:6-benzthiacyanine
                                     iodide.
                                                See
  Ethyl-1-benzthiazole)(2-ethyl-5:6-benz-1-benz-
  thiazole) methin cyanine iodide.
1:1'-Diethyl-2:4'-cyanine iodide, 1012.
2:1'-Diethyl-5:6:5':6'-dibenzoxa-2'-cyanine
  See (1-Ethyl-5:6-benz-2-quinoline)(2-ethyl-5:6-benz-
  1-benzoxazole) methincyanine iodide.
(Diethyl ether)tetraethyldibromogold,
```

NN-Diethylethylenediaminodiethylgold bromide, 767.

quinoline)(2-ethylbenzoxazole)methincyanine iod-

2:2'-Diethylselenathiacyanine iodide. See (2-Ethyl-

1-benzthiazole)(2-ethyl-1-benzselenazole)methin-

(1-Ethvl-4-

NN-Diethylenediaminotetraethyldibromodigold, 767.

Diethylnitrosoamine, photolysis of, 12.

ide.

cyanine iodide.

2:1'-Diethyloxa-4'-cyanine iodide. See

2:1'-Diethylthia-4'-cyanine iodide, 1012.

Diguanidonaphthalene dinitrates, 255, 256.

```
1:1'-Diguanyl-4:4'-dipiperidyl dihydrochloride, 256.
cis-3:4-Dicyclohexylcyclopentanol, 1413.
\gamma-9-(9:10-Dihydro)anthranylbutyric acid, 268.
\beta-9-(9:10-Dihydro)anthroylpropionic acid, 268.
Dihydroartabotrine methine, 996.
Dihydrobassic acid, and its methyl ester, and its
  acetonyl derivative, 1127.
Dihydrobetulic acid, and its derivatives, 1271.
Dihydrocaryophyllene \alpha- and \beta-oxides, 539.
Dihydrocaryophyllene aldehyde, and its semicarb-
  azone, 539.
cis- and trans-Dihydrocryptols, and their derivatives,
 519.
l-Dihydro-α-curcumenylamine, and its acetyl deriv-
  ative, 1506.
Dihydrodunnione, diacetyl derivative, 1526.
Dihydroeremophilone, hydroxy-, constitution
Dihydroniquidine, and its salts and derivatives, and
  nitroso-, 245.
epi-C_9-Dihydroniquidine, and its salts, 245.
Dihydro-a-picrotoxinic acid, 1265.
Dihydroquillaic acid, and its derivatives, 1134.
Dihydroquinidine, oxidation of, 1298.
Dihydroquinidine, bromo- and iodo-derivatives, and
  their derivatives, 242.
Dihydro-epi-C<sub>9</sub>-quinidine, iodo-, 246.
11:12-Diketocholanic acid, derivatives of, 540.
Diketodihydronucidine perchlorate, 608.
4:7-Diketo-7-p-methoxyphenylheptoic acid, and its
  methyl ester, 1745.
\delta \eta-Diketo-\eta-(6-methyl-2-naphthyl)heptoic acid, 798.
2:4-Diketo-3-methyltetrahydrothiazole-2-benzylidene-
  hydrazone-5-acetic acid, 1050.
2:4-Diketo-3-methyltetrahydrothiazole-2-a-phenyl-
  ethylidenehydrazone-5-acetic acid, 1050.
Diketonucidine, action of, bromine on, 603.
4:7-Diketo-octoic acid, preparation of, and its methyl
  ester, 1747.
4:7-Diketo-7-phenylheptoic acid, ethyl and methyl
  esters, 1744.
2:4-Diketo-3-phenyltetrahydrothiazole-2-benzylidene-
  hydrazone-5-acetic acid, 1050.
2:4-Diketo-3-phenyltetrahydrothiazole-2-cyclohexyl-
  idenehydrazone-5-acetic acid, 1049.
2:4-Diketo-3-phenyltetrahydrothiazole-2-3'-methyl-
  cyclohexylidenehydrazone-5-acetic acid, 1050.
2:4-Diketo-3-phenyltetrahydrothiazole-2-\alpha-phenyl-
  ethylidenehydrazone-5-acetic acid, 1049
2:4-Diketo-3-phenyltetrahydrothiazole-2-isopropyl-
  idenehydrazone-5-acetic acid, 1049.
2:4-Diketotetrahydrothiazole-2-benzylidenehydrazone-
  5-acetic acid, 1049.
2:4-Diketotetrahydrothiazole-2-3'-methylcyclohexyl-
  idenehydrazone-5-acetic acid, 1049.
2:4-Diketotetrahydrothiazole-2-a-phenylethylidene-
  hydrazone-5-acetic acid, 1049.
2:4-Diketotetrahydrothiazole-2-isopropylidenehydr-
  azone-5-acetic acid, 1049.
3:5-Dimethoxyacetophenone, 2-hydroxy-, benzoyl de-
  rivative, 1926.
3:6-Dimethoxyacetophenone, 2-hydroxy-, and its
  benzoyl derivative, 1924.
4:6-Dimethoxy-3-acetoxy-2-methylcoumarone, 925
3:5-Dimethoxy-1-anisylidenecoumaran-2-one,
  bromo-, 93.
\alpha \gamma-Dimethoxy-d-araboglutaric acid, \beta-hydroxy-, di-
  amide and methyl ester, 753.
\alpha \gamma-Dimethoxy-l-araboglutaric acid, \beta-hydroxy-,
  amide and methyl ester, 750.
 \beta \gamma-Dimethoxy-l-araboglutaric acid, \alpha-hydroxy-, di-
  amide and methyl ester, 755.
 cis-Dimethoxyazobenzenes, 1314.
```

2:3-Dimethoxybenzene, 1:4:5-trihydroxy-, 1454.

- 3:5-Dimethoxybenzoic acid, 2-bromo-, and its methyl ester, 283.
- 2:3-Dimethoxybenzoquinone, 5-hydroxy-, 1454.
- 2:5-Dimethoxy-6-benzyloxyacetophenone, 1924.
- Di-(5-methoxy-3-carboxy-2-methyl-4-thienyl)phenylmethane, 1117.
- 4:6-Dimethoxycoumarone, and its picrate, 923.
- 4:6-Dimethoxycoumarone-2-carboxylic acid, ethyl ester, 924.
- 5:5'-Dimethoxy-3:3'-diacetyldiphenyl, 2:2'-dihydroxy-, 1926.
- 3:6-Dimethoxydibenzoylmethane, 2-hydroxy-, 1925.
- 5:6-Dimethoxydibenzoylmethane, 2-liydroxy-, 960.
- 4:7-Dimethoxy-9:10-dihydrophenanthrene-1- β -propionic-2-carboxylic acid, 1402.
- 6:7-Dimethoxy-1-(3':4'-dimethoxyphenyl)-1:2:3:4tetrahydronaphthalene-2:3-dicarboxylic acid, their esters, 1239.
- 5:7-Dimethoxy-2:2-dimethylchroman, 6-cyano-, its derivatives, 1261.
- 2:3'-Dimethoxy-1:2'-dinaphthoylmethane, 1682.
- 4:4'-Dimethoxydiphenylamine, 2:2'-diamino-, and its 2:2'-diacetyl derivative, 160.
- 3:3'-Dimethoxydiphenyl-5:5'-dialdehyde, 4:4'-dihydroxy-, 1927.
- 5:6-Dimethoxyflavone, synthesis of, and 2-hydroxy-, and its dibenzoyl derivative, 956.
- 5:8-Dimethoxyflavone, 1925.
- 4:6-Dimethoxy-7-formylcoumarone, 923.
- 4:6-Dimethoxy-7-formylcoumarone-2-carboxylic acid, ethyl ester, 924.
- 4:7-Dimethoxy-2'-formyl-3'-keto-1:2-cyclopentenophenanthrene, 1401.
- 3:5-Dimethoxy-2-formyl-4-methylphenoxyacetic acid, and its derivatives, 924.
- 3:5-Dimethoxy-2-formyl-6-methylphenoxyacetic acid, and its ethyl ester, 2:4-dinitrophenylhydrazone, 924.
- 3:5-Dimethoxy-2-formylphenoxyacetic acid, and its derivatives, 923.
- 4:7-Dimethoxy-3'-keto-1:2-cyclopentenophenanthrene, and its oxime, 1399.
- 4:7-Dimethoxy-3'-keto-1:2-cyclopentenophenanthrene, 2'-isonitroso-, 1401.
- 4:6-Dimethoxymethylcoumarans, 925.
- 4:6-Dimethoxy-7-methylcoumarone-2-carboxylic acid, and its ethyl ester, 924.
- 1:2-Dimethoxynaphthacene-11:12-quinone, 9:10-dihydroxy-, 401.
- o-(1':5'-Dimethoxy-2'-naphthoyl)benzoic acid, 400.
- Di-(1-methoxy-2-naphthoyl)methane, 1682.
- 4:7-Dimethoxyphenanthrene-1- β -propionic-2-carboxylic acid, and its methyl ester, 1401.
- 4:6-Dimethoxyphenyl $\alpha\beta$ -dibromo- β -p-anisylethyl ketone, 5-bromo-2-hydroxy-, 93.
- 4:6-Dimethoxyphenyl $a\beta$ -dibromo- β -3:4-dimethoxyphenylethyl ketone, 5-bromo-2-hydroxy-, 93.
- 4:6-Dimethoxyphenyl $a\beta$ -dibromo- β -phenylethyl ketone, 5-bromo-2-hydroxy-, 93.
- 1-(3':4'-Dimethoxyphenyl)-2:3-dihydroxymethyl-1:2:3:4tetrahydronaphthalene, and its anhydride, 1240.
- 4:6-Dimethoxyphenyl p-methoxystyryl ketone, bromo-2-hydroxy-, 93.
- 5:7-Dimethoxy-8- β -phenylpropionyl-2:2-dimethylchroman, 1260.
- 3:5-Dimethoxyterephthalic acid, 2:6-dichloro-, 282.
- 2:5-Dimethoxy-p-terphenyl, 1286. 4:7-Dimethoxy-1:2:3:4-tetrahydrophenanthrene-1- β propionic-2-carboxylic acid, 1402
- 9:10-Dimethoxy-1:4:9:10-tetraphenyl-9:10-dihydroanthracene, 494.
- 3:4-Dimethoxytoluene, 2:5:6-trihydroxy-, 1457.
- 3:5-Dimethoxy-p-toluic acid, 2:6-dichloro-, and its derivatives, 282.
- 3:4-Dimethoxytoluquinone, 6-hydroxy-, 1457.

- 2:4'-Dimethoxytriphenylcarbinol, 35.
- Dimethoxytriphenylmethyls, properties and stability of, 33.
- 2:2'-Dimethoxytriphenylmethyl chloride and peroxide,
- 2:4'-Dimethoxytriphenylmethyl bromide, chloride, and peroxide, 36.
- Dimethyl telluride, formation of, by micro-organisms,
- 4:6-Dimethyl 3-acetamido- β -methyl-d-altropyranoside.
- 4:6-Dimethyl 2-acetamido- β -methyl-d-glucopyranoside,
- aγ-Dimethylallyl chloride, hydrolysis of, 1748.
- Dimethylamine, thermal decomposition of, 499.
- 4-Dimethylaminobenzenesulphonic acid, 3-nitro-, and its sulphonanilide, 1702.
- o-Dimethylaminobenzoic acid, methyl ester, preparation of, 461.
- o-Dimethylamino- $\beta\beta$ -dimethyl- α -isopropylstyrene, 462. 2-Dimethylaminodiphenyl, 1200.
- 2- and 4-Dimethylaminodiphenyl ethers, 1200.
- Dimethylaminodurene, nitro-, preparation of, 984.
- o-Dimethylamino- β -methyl- α -ethylstyrene, picrate, 463.
- Dimethyl amino-methylhexoside, derivatives of, 273. o-Dimethylaminophenyldiethylcarbinol, and its perchlorate, 463.
- o-Dimethylaminophenyldiisopropylcarbinol, 462.
- 2-Dimethylamino-m-xylene picrate, 1386.
- Dimethyl 3:6-anhydrogalactonamides, 1848.
- 2:4-Dimethyl 3:6-anhydrogalactonic acids, methyl esters, 1848.
- 2:4-Dimethyl 3:6-anhydro-d-galactose anilide, 1848. 2:4-Dimethyl 3:6-anhydro- α -methyl-d-galactoside,
- 1847. 2:4-Dimethyl 3:6-anhydro- β -methyl-d-galactoside,
- 1848. Dimethylaniline, o-chloro-, picrate, 1386.
- Dimethylanilines, nuclear-substituted, preparation of, 1199.
- Dimethylaniline-p-sulphonic acid, action of nitrous acid on, in sulphuric acid, 1701
- 9:10-Dimethylanthracene, 9:10-di-chloro-, and -hydroxy, diacetyl derivative, 805.
- 2:3-Dimethyl l-arabinose, and its derivatives, 753.
- 2:4-Dimethyl d-arabinose, and its anilide, 752.
- 2:5-Dimethyl l-arabinose, 751.
- Dimethyl arabo-ascorbic acids, 248.
- 2:4-Dimethyl d-arabonamide, 753.
- 2:4-Dimethyl l-arabonamide, 750.
- 2:5-Dimethyl l-arabonamide, 751.
- 2:5-Dimethyl γ -l-arabonolactone, 751.
- 2:5-Dimethyl l-arabonophenylhydrazide, 751.
- 1:1'-Dimethyl-2:2'-azacyanine iodide. See methyl-2-quinoline)azamethincyanine iodide.
- 9:10-Dimethyl-1:2-benzanthracene, 9:10-di-bromo- and -hydroxy-, and its diacetyl derivative, 806.
- 2:2'-Dimethyl-3:4-benzoxathiacyanine. See (2-Methyl-3:4-benz-1-benzoxazole)(2-methyl-1-benzthiazole)methincvanine.
- 2:4-Dimethylbenzthiazolone, 472.
- Dimethylbromogold, 766.
- Dimethyl-*n*-butylamine, and its salts, 1789. $\beta \gamma$ -Dimethyl- $\Delta \beta$ -butylene, α -bromo-, 437.
- 5:9-Dimethyldecadienic acids, and ethyl ester of $\Delta^{3:8}$ compound, 1548.
- 5:9-Dimethyldecenoic acids, and their esters, 1547.
- 5:9-Dimethyldecoic acid, 4-bromo-, ethyl ester, 1547. Dimethyldeuteramine, preparation and properties of,
- 5:5'-Dimethyl-2:3'-dicoumaronyl, 3-hydroxy-, acetyl derivative, 280.
- Dimethyldiphenyl ethers, 2-amino-, and 2-nitro-, 1722.

```
Index of Subjects.
1982
3:4-Dimethyldiphenylamine, 4'-amino-, and its hydro-
                                                           1:1'-Dinaphthyl, 2:2'-diamino-, preparation of, 1115.
  chloride, 1160.
                                                           Dinaphthyl sulphides, nitro-, 1095.
4:4'-Dimethyldiphenylamine, 2:2'-diamino-, and its
                                                           aa-Di-1"-naphthyl-3:4:2':1'-naphthaphthalide, di-4"-
  2:2'-diacetyl derivative, 160.
                                                             hydroxy-, 400.
2:2'-Dimethyl-4:6'-diquinolylamine, and its dimeth-
                                                           2:3-Di-\beta-naphthylquinoxaline, 200.
  iodide, 492.
                                                           Dinitro-compounds. See under di Nitro-compounds.
\eta\lambda-Dimethyl-\Delta\beta\delta\zeta×-dodecatetraen-\alpha-ol, 1552.
                                                           4-Di-n-octylaminoazobenzene, 4'-nitro-, 1385.
4:2'-Dimethyl-3'-ethylchromono-7':8':6:5-a-pyrone,
                                                           1:3-Dioctyloxybenzenedisulphonic acid, and its deriv-
                                                             atives, 1833.
4:8-Dimethyl-6-ethylcoumarin, 7-hydroxy-, 134.
                                                           Dipalladium derivatives, bridged, structure of, 1622.
2:5-Dimethyl-4-ethylresorcinol, 951.
                                                           Dicyclopentadiene, cracking of, 375.
2:4-Dimethylgalactonic acid, derivatives of, 1737.
                                                             kinetics of formation of, in paraffin, 374.
3:4-Dimethylgalactonic acid, amide and lactone, 1871.
                                                             solubility of, in paraffin, 371.
2:4-Dimethyl galactose, and its derivatives, 1736.
                                                           a-Dicyclopentadiene, polymerisation of, 1761.
3:4-Dimethyl galactose, 1869.
                                                           endoDicyclopentadiene, gaseous, kinetics of formation
4:6-Dimethyl d-galactose, and its derivatives, 1488.
Dimethylgoldacetylacetone, 766.
                                                           Diphenic acid, preparation of, 855.
3:5-Dimethylcycloheptanone, and its semicarbazone,
                                                           Diphenic acid, 4:4'-dinitro-, salts and esters of, 1541.
                                                             4:6:4'-trinitro-, resolution of, 98.
\beta\gamma-Dimethyl-\Delta\beta-hepten-\zeta-one, and its semicarbazone.
                                                             4:6:4':6'-tetranitro-, methyl ester, complex formation
  437.
                                                               of, with hydrocarbons, 972.
\textbf{2:6-Dimethyl} cyclo \textbf{hexanone-2-carboxylic} \quad \textbf{acid,} \quad \textbf{ethyl}
                                                           Diphenyl, 3-hydroxy-, 122.
  ester, 1301.
                                                             3-nitro-, 1291.
1:2-Dimethylcyclohexylacetic acid, methyl ester, de-
                                                           Diphenyl ethers, containing ethoxy and methoxy
  hydrogenation of, 88.
                                                               groups, 1165.
1:1-Dimethylisoindole, 3-amino-, and its picrate, 1818.
                                                              selenide, 2-amino-, and 2-nitro-, preparation of, 152.
                                                             sulphide, 5-chloro-2-nitro-, 904.
Dimethyliodogold, 765.
2:3-Dimethyl d-mannosaccharic acid, 1885.
                                                           Diphenyl-3-acenaphthylcarbinol, 308.
2:3-Dimethyl d-mannuronic acid, 1885.
                                                           Diphenyl-3-acenaphthylmethane, 309.
Dimethylmesidine, preparation of, 984.
                                                           Diphenyl-3-acenaphthylmethyl, 307.
2:3-Dimethyl methyl-l-arabinoside, 754.
                                                           Diphenyl-3-acenaphthylmethyl bromide, chloride, and
2:4-Dimethyl methylgalactosides, 1736.
                                                              peroxide, 309.
3:4-Dimethyl \beta-methylgalactoside, and its 2:6-di-
                                                           Diphenyl-2-acetic acid, preparation of, 1840.
  nitrate, 1870.
                                                           Diphenylamine, 2:2'-diamino-, and its 2:2'-diacetyl
4:6-Dimethyl \alpha-\beta-methyl-d-galactoside, 1488.
                                                           derivative, 160. Diphenylamines, 2:2'-diamino-, and their diacetyl
2:3-Dimethyl methyl-d-mannuronide, 1885.
2:4-Dimethyl mucic acid, derivatives of, 1737.
Dimethylnitrosoamine, photolysis of, 12.
{\bf 1:12-Dimethyloctahydrophenanthrene-1-carboxylic}
  acid, and its methyl ester, 1301.
3':7-Dimethyl-1:2-cyclopentenophenanthrene, and its
  derivatives, 799.
```

Dimethylphenoxarsines, 10-chloro-, 1723.

dinitrobenzoate, 1043.

derivatives, 1043.

derivatives, 1043.

chloro-, 786.

oxy-, 400.

460.

dinitrophenylhydrazone, 1043.

1:7-Dimethyl-2-quinolone, 1861.

2-(Dimethylphenoxy)phenylarsonic acids, 1723.

2-(Dimethylphenoxy)phenyldichloroarsines, 1723.

1:12-Dimethyl-7-isopropyloctahydrophenanthrene-1-

carboxylic acid, synthesis of, and its methyl ester,

2:3-Dimethyl-4-isopropylcyclopentanol, and its 3:5-

2:3-Dimethyl-4-isopropylcyclopentanone, and its 2:4-

d-2:3-Dimethyl-4-isopropyl- Δ^2 -cyclopentenol, and its

d-2:3-Dimethyl-4-isopropyl- Δ^2 -cyclopentenone, and its

ammonium iodide, synthesis and resolution of,

2:3-Dimethylquinoline, 6-amino-4-hydroxy-, and its acetyl derivative, and 6-nitro-4-hydroxy-, 565.

7:9-Dimethyltetrahydroacridine, 5-bromo-, and 5-

2:1'-Dimethylthia-2'-cyanine iodide. See (1-Methyl-2-

quinoline)(2-methyl-1-benzthiazole)methincyanine

2:5-Di-2'-naphthoylterephthalic acid, 2:5-di-1'-hydr-

 $o-(\beta\beta-Dimethyl-a-isopropylvinyl)$ phenyltrimethyl-

Dimethyl saccharolactone, methyl ester, 1489.

Dimethylsilylamine, preparation of, 821. Dimethyltelluretine ethyl bromide, 166.

1:6-Dimethyl-2-thioquinolone, 1861.

Dinaphthoylmethanes, 1-hydroxy-, 1680.

```
derivatives, 158.
1:4-Diphenylanthracene, and its picrate, 397.
3:6-Diphenylanthranilic acid, and its acetyl derivative
  and methyl ester, 395.
1:4-Diphenylanthraquinone, and di- and tetra-bromo-,
  and dinit \mathbf{ro}_{-}, 397.
1:5-Diphenylanthraquinone, 396.
Diphenylbisdiphenylene-ethane, preparation and pro-
  perties of, 30.
1:3-Diphenyl-5-(6'-bromo-3':4'-methylenedioxyphenyl)-
```

pyrazole, 97 Diphenyl-4-carboxylic acid, 3-hydroxy-, and its ethyl ester, 122.

Diphenyl-5-carboxylic acid, 2-nitro-, 1292.

Diphenyl-4:4'-dicarbonamidoxime, and its dihydrochloride, 1256.

1:4-Diphenyl-9:10-dihydroanthracene, 9-hydroxy-, 397. Diphenylene selenide, preparation of, 153. sulphide, and its diacetyl derivative, 152.

telluride, preparation of, 153.

Di-o-phenylenebis(dibutylarsine)palladium dichloride, 1630.

 ${\bf Di-}o\text{-}{\bf phenylene} bis ({\bf dimethylarsine}) {\bf palladium}$ salts.

Diphenylenesulphone-3:6-dicarboxylic acid, 152.

1:3-Diphenyl- Δ^3 -cyclohexene, 1291.

Diphenylmethane-4:4'-dicarbonamidoxime, and its dihydrochloride, 1256.

9:10-Diphenyl-2-methylanthracene, photo-oxide of, 116.

1:4-Diphenylnaphthacene-11:12-quinone, 9:10-dihydroxy-, 401.

1:5-Diphenyl-1:4:5:8:11:12:13:14-octahydroanthraquinone, 396. $a\gamma$ -Diphenyl-a-pentadeuterophenyl- γ -1-naphthylallene,

 $a\gamma$ -Diphenyl-a-pentadeuterophenyl- γ -1-naphthylallyl alcohol, 434.

9:10-Dixenylanthracene, and its photo-oxide, 116. $a\gamma\text{-}\mathbf{Diphenyl}\text{-}\gamma\text{-}\mathbf{pentadeuterophenyl}\text{-}a\text{-}\mathbf{1}\text{-}\mathbf{naphthylallyl}$ 9:10-Dixenyl-9:10-dihydroanthracene, 9:10-dihydralcohol, 434. 2:3-Diphenylcyclopentane, 1-amino-, 1-acetyl derivoxy-, 117. ative, 1415. Dodecahydrophenanthrenes, 849. cis- and trans-3:4-Diphenylcyclopentanes, 1-amino-, Dodecyl sodium sulphate, electrical conductivity of 1-acetyl derivatives, 1414. solutions of, in alcohol-water mixtures, 522. 3:4-Diphenylcyclopentane-1:2-diol, 569. 2-Dodecylaminopyridine, 1857. p-n-Dodecyloxybenzoic acid, polymorphism of, 424. trans-2:3-Diphenylcyclopentanol, 571. cis-3:4-Diphenylcyclopentanol, 570. trans-p-n-Dodecyloxycinnamic acid, polymorphism of, trans-2:3-Diphenylcyclopentanone, 5-chloro-, 573. cis-3:4-Diphenylcyclopentanone, 2-bromo-, 572. 1-Dodecyl-2-pyridone, salts, 1857. cis- and trans-3:4-Diphenylcyclopentanones, and their 1-Dodecyl-2-pyridoneimine sulphate, 1857. Dunnione, and its derivatives, 1522. derivatives, 567. $\gamma \delta$ -Diphenyl- Δ^a -pentenoic acid, and its anilide, 1415. n- and iso-Dunniones, spectra of, absorption, 881. Diphenyleyclopentenone, chloro-, structure of, from anhydroacetonebenzil, 1408. a-Dunnione, and its 2:4-dinitrophenylhydrazone, 1528. α - and β -isoDunniones, 1528. 2:3-Diphenylcyclopentenone, and its derivatives, 570. allo Dunnione, and its 2:4-diphenylhydrazone, 1527. 3:4-Diphenyl- Δ^2 -cyclopentenone, 2-chloro-, and its Durene, nitroamino-, preparation of, 984. derivatives, 1413. Durenol, nitro-, preparation of, 985. Dyes, chromium lakes of, 823. 2-hydroxy-, action of phosphoryl chloride on, 1411. 3:4-Diphenyl- Δ^3 -cyclopentenone, 1413. Dysprosium, purification of, 558. and its 2:4-dinitrophenylhydrazone, 569. trans-3:4-Diphenylcyclopentylamine, and its derivatives, 1414. E. 3:6-Diphenylphthalic acid, anhydride and methyl Earths, rare, dimethyl phosphates of, 554. ester, 394. Elaidic acid, purification of, and its equilibria in 3:6-Diphenylphthalimide, and N-hydroxy-, 395. Diphenylpiperonylcarbinol, 303. mixtures with other higher fatty acids, 974. Diphenylpiperonylmethane, 303. Electrical conductivity of uni-univalent salts in acetone, 1386. Diphenylpiperonylmethyl, 302. Diphenylpiperonylmethyl bromide and chloride, and Electrolytic oxidation, 1109. their derivatives, 303. Elliptic acid, and its methyl ester, 1426. $\beta\beta$ -Diphenylpropiophenone, β -hydroxy-, 434. Elliptolone, and its O-acetyl derivative, 1426. Diphenyl-2-pyridylcarbinol, 811. Elliptone, structure of, 1424. Diphenyl-2-quinolylcarbinol, 811. dl-Elliptone, and its derivatives, 1104. l-Elliptone, and its derivatives, 1103. Diphenylsulphone, 3-amino-, 3:4-diamino-, and chlorofrom Derris elliptica, 1099. nitro- and nitroamino-derivatives, 905. 3-chloro-4-nitro- and 5-chloro-2-nitro-, mobility of Elm, slippery. See Ulmus fulva. groups in, 902. Emulsions, water-in-oil, 619. 2:4-Diphenylsulphonylaniline, 905. Equation, Arrhenius, application of, to racemisation 2:4-Diphenylsulphonylanisole, 906. of co-ordination compounds, 1937. 2:4-Diphenylsulphonyldiphenyl sulphide, 906. relation between constants of, 1378. 2:4-Diphenylthionitrobenzene, 904. Equilibrium in gaseous state and in solution, 367. Eremophilone, and hydroxy-, constitution of, 87. $a\gamma$ -Diphenyl- γ -p-tolyl- α -1-naphthylallene, 435. $a\gamma$ -Diphenyl-a-p-tolyl-p-1-naphthylallyl alcohol, 434. Ergosterol, structure of, 250. Erythrina cristagalli, hypaphorine from, 1841. $a\gamma$ -Diphenyl- γ -p-tolyl-a-1-naphthylallyl alcohol, 435. Diphenyl triketone β -anil oxide and β -p-dimethyl-Esters, acid, metallic salts, electrolysis of, 1109. aminoanil oxide, 1429. hydrolysis of, 838, 840. $\gamma\delta$ -Diphenyl-n-valeric acid, anilide and methyl ester structure of, by monolayer measurements, 177. of, 1415. Ethanolamine oleate, solubility of water in benzene Dipole moments of vapours, 1144. solutions of, 53. Di-(5-n-propoxy-3-carboxy-2-methyl-4-thienyl)phenyl-3-Ethoxybenzaldehyde, 4-hydroxy-, acetyl derivative, methane, 1117. 1166.3-Ethoxybenzoic acid, 5-bromo-4-hydroxy-, and 4m-Di-n-propylaminobenzaldehyde, and its derivatives, 1093. hydroxy-, and their derivatives, 1166. 4-Ethoxybenzoic acid, 3-hydroxy-, and its methyl Di-4-pyridyl sulphides, and their dipicrates, 877. 2:2-Dipyridyltetraethyldibromodigold, 767. ester, 1161. Disabinaketylamine, 1418. Ethoxydurene, nitro-, preparation of, 985. Disilane, pyrolysis of, 1021. β-Ethoxyethanesulphonic acid, chloromercuric salt, Dissociation constants of halogeno- and nitro-benzoic thermal decomposition of, 1066. acids, 640. 10-Ethoxymethyl-1:2-benzanthracene, 804. of m-halogeno-phenols, 263. Ethoxymethyleneacetophenone, 121. of organic acids, 446. 2-Ethoxy-9-methylpurine, 6-amino-, 1786. 1:3-Dithian, preparation of derivatives of, 347. 5-Ethoxy-2-methylthiophen-3-carboxylic acid, and its 1:3-Dithian-5-one-4-carboxylic acid, ethyl ester, and barium salt and ethyl ester, 1117. its derivatives, 348. 6-Ethoxyphenol, 2:4-dibromo-, 1167. Di-2-thionaphthenylmercury, 1007. Ethyl carbonate, dipole moment and structure of, 3:6-Di-p-toluidinophthalhydrazide, 139. 1118. 3:6-Di-p-toluidino-N-p-tolyldithiophthalimide, 139. 3:6-Di-p-toluidino-N-p-tolylphthalimide, 138. Ethyl ether, inflammation of mixtures of, with air, 332, 337. 2:4-Di-p-tolylsulphonyl-4'-methyldiphenyl sulphide, 5-Ethylamino-7-ethoxyacridine, 3-nitro-5- β -chloro-,

5-Ethylamino-7-methoxyacridine, 3-nitro-5-β-chloro-

and $-5-\beta$ -hydroxy-, 477.

2:4-Di-p-tolylsulphonylnitrobenzene, 905.

2:4-Di-p-tolylthionitrobenzene, 905.

1984 O-Ethylbebeerilene, 1160. O-Ethylbebeerine, and its methiodide, 1159. 3-Ethylbenzaldehyde, 2:6-dihydroxy-, 300. 2'-Ethylmesobenzanthrone, 949. (2-Ethyl-3:4-benz-1-benzoxazole)(2-ethyl-1-benzthiazole) methin cyanine iodide, 149. (2-Ethyl-5:6-benz-1-benzoxazole)(2-ethyl-1-benzthiazole) methincy anine iodide, 149. Ethylbenzoins, asymmetric synthesis of, 1201. β -p-Ethylbenzoylpropionic acid, preparation of, 946. (1-Ethyl-5:6-benz-2-quinoline)(2-ethyl-5:6-benz-1benzoxazole) methincyanine iodide, 150 $(\textbf{2-Ethyl-1-benzthiazole}) (\textbf{2-ethyl-5:6-benz-1$ thiazole) methin cyanine iodide, 149. (2-Ethyl-1-benzthiazole)(2-ethyl-1-benzselenazole)methincyanine iodide, 149. Ethyldeuterothiol, Raman spectrum and vapour pressure of, 61. Ethyldideuteramine, preparation and properties of, Ethyldihydrobenzoin, β -form, 108. 7-Ethyl-3:4-dihydronaphthalene-1-dicarboxylic acid. and its anhydride, 947. 7-Ethyl-3:4-dihydro-1-naphthoic acid, 947. Ethyldisilylamine, preparation and properties of, Ethylene derivatives, additive reactivity of, effect of substituents on, 224. Ethylene, tetrachloro-, stabilisation of, for medical purposes, 767. Ethylene- $a\beta$ -bis(arsonic acid), 1633. Ethylene- $\alpha\beta$ -bis(butylchloroarsine), 1633. Ethylene- $\alpha\beta$ -bis(dibutylarsine), 1633. Ethylene- $\alpha\beta$ -bis(dibutylarsine)dichloropalladium, 1633. Ethylene- $\alpha\beta$ -bis(diphenylarsine), 613. Ethylene- $\alpha\beta$ -bis(diphenylarsine)dichloropalladium, Ethylenebis-(n-octylsulphide), 1630. Ethylenebis-(n-octylsulphide)dichloropalladium, 1630. Ethylene- $\alpha\beta$ -bis(phenylarsonic acid, 612. Ethylene- $\alpha\beta$ -bis(phenyl-n-butylarsine), 613 Ethylene- $\alpha\beta$ -bis(phenyl-n-butylarsine sulphides), 614. Ethylene- $a\beta$ -bis(phenylbutylarsine)dichloropalladium, Ethylene- $\alpha\beta$ -bis(phenylchloroarsine), 612. Ethylene- $\alpha\beta$ -bis(phenyliodoarsine), 612. Ethylene- $\alpha\beta$ -bis(phenylmethyl-n-butylarsonium picrates), 613. Ethylenediaminodimethylgold iodide, 765. Ethylenediaminotetramethyldi-iododigold, 766. O-Ethylisoeugenol, preparation of, 1161. 4-Ethylcycloheptanone, and its semicarbazone, 188. dl- β -Ethyl-n-hexyl hydrogen phthalate, 637. ω -Ethylmethanetriacetic acid, and its derivatives, 1298 7-Ethyl-1-naphthoic acid, 947. γ-p-Ethylphenylbutyric acid, and its ethyl ester, 946. β -(p-Ethylphenyl)ethylmalonic acid, 947.

cyanine iodide, 150.

ester, 301.

5-Ethylruban-5-ol, and its picrate, 1244.

1-Ethylthiobenzthiazole, 1-β-hydroxy-, 473.

2-Ethylthiolquinoline, and its derivatives, 147.

exchange in aqueous mixtures of, 61.

O-Ethylvanillic acid, preparation of, 1161.

Eupatorium purpureum, euparin from, 925. Exchange reactions. See under Reactions.

2-Ethylthio-4-methylquinoline, 1323.

Ferruginane, 1035. Ferruginol, and its derivatives, 1031. Films, built-up, of substituted and unsaturated longchain compounds, 777. oxide, stripping and analysis of, 622. Filters, micro-immersion, 1962. Fish, poisons for, from leguminous plants, 812, 1099, 1424.Flames, "cool," in relation to normal flames, 337, 341. green, 332. Flavone, 5:6-dihydroxy-, and its diacetyl derivative, Forces, intermolecular, in liquid systems, 75, 79. Formic acid, chloro-, esters, thermal stability of, 310. Formo-4-bromobenzhydrylamide, 1959 a-Formoxypropionic acid, ethyl ester, 103. 3-Formylacetophenone, 2:4-dihydroxy-, and its derivatives, 133. 2:6-di- and 2:4:6-tri-hydroxy-, and their derivatives, 951. 3-Formyl-5-ethylacetophenone, 2:4-dihydroxy-, and its derivatives, 950. 3-Formyl-5-ethylbenzoic acid, 2:4-dihydroxy-, and its derivatives, 301. 3-Formyl-6-methylacetophenone, 2:4-dihydroxy-, and its 2:4-dinitrophenylhydrazone, 950. Furan, aminohydroxy-, nitrohydroxy-, and nitrosohydroxy-derivatives, 1014. 2-bromo-3-hydroxy- and 2- and 3-hydroxy-, 806. 2- and 3-hydroxy-, nitration and nitrosation of, Furano-compounds, 921, 925, 930, 933. a-Furfurylidenediethyl ketone, and its derivatives, Furfurylidene-p-methoxyacetophenone, 1745. Fufurylidene-2-methyl-6-acetonaphthone, 798. Galactose derivatives, acyl migration in, 1248. phenylosazone, 390. 3-d-Galactosido-l-arabinose, isolation of, 744. 2-d-Galacturonido-l-rhamnose, and its barium salt, Gas, water, synthesis of hydrocarbons from, 1604. Gases, adsorption of, on solids, 139. heat of adsorption of, on chromium sesquioxide, 893. on manganese oxides, 857. association in, 362. Glucosamine, configuration of, 271. methylated derivatives of, 274. synthesis of, 782. d-Glucose, conversion of, into d-idose, 1069. 3-Ethylpiperidine, $3-\beta$ -bromo-, hydrobromide, 678. Glucosides, synthesis of, 1266. (1-Ethyl-4-quinoline)(2-ethyl-1-benzoxazole)methin-7- β -Glucosidoxycoumarin, 6-hydroxy-. See Cichoriin. d-Glucuronic acid, synthesis of, 1529. cis- and trans-Glutaconic acids, exchange reactions of, with deuterium oxide, 1673. Ethylthiol, equilibrium constant for isotopic hydrogen Glycerides, X-ray and thermal examination of, 103, 577, 1141, 1518. 1-Ethylthiolbenzthiazole, and its derivatives, 148. Glycine, synthesis of, 1564. Glycogen, constitution of, from fish liver and muscle, 5-Ethyl-m-toluic acid, 2:6-dihydroxy-, and its methyl derivatives, osmotic pressure of, 664. Glycollaldehyde, dimeric, catalytic depolymerisation of, 1777. Euparin, constitution and derivatives of, 925, 933. Glycosides. See Glucosides. Glyoxal, combustion zones of, 1703. Gold compounds, quadricovalent, 426.

F.

Gold organic compounds, 762. stereochemistry of, 426. Graphite, formation of, 67. 4-Guanido-4'-aminoazobenzene nitrate, 256. Guanidonaphthalenes, 253. 7-Guanido-2-naphthylamine nitrate, 255. Guanine-uridylic acid, 907. Guanyldipiperidyl hydriodides, 257. Guanylnaphthalenes, 253. Gum, damson. See Damson gum. Gum arabic, arabic acid from, 747.

H. Haber Memorial Lecture, 1642. Halogens, identification of, in organic halogen compounds, 1956. radioactive, concentration of, 1273. Halogen organic compounds, detection of the halogen in, 1956. Halogenation in anthraquinone series, 816. Heat of adsorption of gases on chromium sesquioxide, on manganese oxides, 857. Heterocyclic compounds, configuration of, 1050. Heptamethyl 3-d-galactopyranosido-l-arabofuranose, Heptamethyl 3-d-galactopyranosido-l-arabopyranose, 749.Heptamethyl $3-\beta-d$ -galactopyranosido-d-arabopyranose, 752. dl-n-Heptane-γ-carboxylic acid, preparation and resolution of, and its esters, 636. Heptane-1:7-dicarbonamidoxime, 1255. 2-n-Heptylcycloheptanone, and its derivatives, 186. trans-p-n-Heptyloxycinnamic acid, polymorphism of, 425.Hexadeutero-1- $(\alpha$ -hydroxybenzyl)-3-benzylideneindene, Hexahydrocarbazole, 7-bromo- and 7-chloro-10:11dihydroxy-, 9-acetyl derivatives, 239. cis- and trans-Hexahydrocuminic acids, and their esters, 1246. cis-Hexahydrohomophthalic acid, p-phenylphenacyl ester, 174. 9-Hexahydrophenanthrene, cis-7-hydroxy-, 174. trans-Hexahydro-p-toluic acid, p-bromo-, and p-chloro-, phenacyl esters, 1246. 2:4:6:2':4':6'-Hexamethoxybenzoin 2:4-dinitrophenylhydrazone, 90. 2:4:6:2':4':6'-Hexamethoxy-5:5'-diacetyl-3:3'-dimethyldiphenylmethane, 1585. 2:4:6:2':4':6'-Hexamethoxydibenzylamine, 91. 2:4:6:2':4':6'-Hexamethoxydiphenylmethane, 91 5:6:7:5':6':7'-Hexamethoxy-3:3:3':3'-tetramethylbis-1:1'-spirohydrindene, 199. Hexamethylbenzene, crystal structure of, 1324. 3:3:5:3':5'-Hexamethylbis-1:1'-spirohydrindene, 7:7'dibromo-6:6'-dihydroxy-, and 6:6'-dihydroxy-, and its derivatives, 1423. cycloHexan-1:4-dione di-o-carboxyanil, 787. Hexane, inflammation of, in air and in oxygen, 343. cycloHexane series, 84. alcohols of, 518, 1245. β -(5 or 6)-cycloHexane-1-spirohydrindoylpropionic acid, and its derivatives, 173.

 γ -(5 or 6)-cycloHexane-1-spirohydrindylbutyric acid,

1:4:5:8:9:10-Hexaphenyl-9:10-dihydroanthracene, 9:10-

cycloHexanone δ-phenylthiosemicarbazone, 1049.

 $\Delta^{1'}$ -cycloHexenyl-1-acetonaphthone, 797. (-)- β -n-Hexyl alcohol, and its tartranilate, 639.

Ì73.

dihydroxy, 397.

trans-p-n-Hexyloxycinnamic acid, polymorphism of, 425.Hofmann reaction, 916. Holmium, purification of, 558. p-Homosalicylideneaniline, polarities of, in benzene, 1392.Horehound, bitter principle of, 587. Horse-chestnut starch, See under Starch. (+)Hydratropamide, Hofmann rearrangement of, 916. Hydrazones, metallic complexes of, 257. Hydrindene-1-spirocyclohexane, 5-hydroxy-, and its 3:5-dinitrobenzoate, 177. β -Hydrindone β -naphthylhydrazone, 1536. Hydrobenzoins, substituted, α - and β -forms of, 108. Hydrocarbon, C₁₅H₂₂, from cholesteryl chloride, 1021. C₁₉H₃₀, and its derivatives, from cholesteryl chloride, 1020. Hydrocarbons, aromatic, complex formation by, with polynitro-compounds, 98, 972. identification of, 1442. polycyclic, 266, 268. inflammation of mixtures of air with, 332. paraffin, higher, inflammation of, in air, 341. synthesis of, from water gas, 1604. Hydrocellulose, 1901, 1904. Hydrocyanic acid. See under Cyanogen. Hydrogen, adsorption of, by hydrogenation catalysts, effect of poisons on, 1750. atoms, associating effect of, 484. heat of adsorption of, on manganese oxide, 860. heavy. See Deuterium. symmetrically placed with deuterium, molecular dissymmetry due to, 1960. Hydro- β -naphthoin, 200. Hypaphorine, and its flavianate, 1841.

 β -cycloHexylethylcyclohexane, β -3'-hydroxy-, and its

3:5-dinitrobenzoate, 176.

d-Idose, formation of, from d-glucose, 1069. Indeno(2':3':2:3)indole, 1534. Indeno(2':3':2:3)indole, 5-nitro-, 1535. Indeno(2':3':2:1)- β -naphthindole, and its 3-acetyl derivative, 1536. Indole derivatives, polycyclic, action of nitric acid on, 1534. Indoles, halogeno-, structure of, 237. Indole group, structure in, 237. o-Indophenol, mm'-difluoro-, 1405. ψ-Indoxylspirocyclopentane, 8-bromo-, 6-acetyl derivative, and 8-bromo-7:9-dinitro-, 239. Inulin derivatives, osmotic pressure of, 664. Iodine chloride, addition of, to olefinic compounds, 1509. Iodides, reaction of, with persulphates, 463. Iodic acid, reaction of, with sulphurous acid, using constant sulphite solution, 675. Ionisation in non-aqueous solvents, 1337. ψ -Ionylideneacetaldehyde semicarbazones, 1553. ψ -cycloIonylideneacetaldehyde semicarbazone, 1560. Iron, oxide films on, thickness of, in air, 621. Iron organic compounds :-Iron enneacarbonyl, crystal structure of, 286. Iron determination :-

determination in, of oxygen, by vacuum-fusion method, 631.

Irone, synthesis of, 435.
Isomerism, cis-trans-, in octahedral groups, 1106.
optical, due to symmetrical deuterium and hydrogen

atoms, 431. Isomorphism in hydrated salts, 646, 653.

Isomorphism in hydrated saits, 646, 653. Isotopes in biology, 1213.

sotopes in biology, 1213. use of, in chemical reactions, 1188. K.

3'-Keto-4-acetoxy-7-methyl-1:2-cyclopentenophenanthrene, 798.

5-Keto-4-benzylidene-2-methyl-4:5-dihydrothiophen-3carboxylic acid, 1117.

Ketocholanic acids, substituted, 540.

5-Keto-4-cinnamylidene-2-methyl-4:5-dihydrothiophen-3-carboxylic acid, 1117.

3'-Keto-3:4-dihydro-1:2-cyclopentenophenanthrene, preparation of, 1740.

a-Keto- β -2-diphenylylsuccinic acid, ethyl ester, 1841. 9-Ketododecahydrophenanthrenes, and their derivatives, 846.

 β -Keto-esters, condensation of, with phenols in presence of aluminium chloride, 1250.

5-Keto-4-ethylidene-2-methyl-4:5-dihydrothiophen-3carboxylic acid, 1117.

3-Keto-1:2:3:4:5:6-hexahydrochrysene, and its 2:4-dinitrophenylhydrazone, 1741.

N-2'-Ketocyclohexylideneanthranilic acid, 787.

3'-Keto-4-hydroxy-7-methyl-1:2-cyclepentenophenanthrene, 798.

1'-Ketoindeno(2':3':1:2)fluorenone, and its bisphenylhydrazone, 396.

5-Keto-4-2-methoxybenzylidene-2-methyl-4:5-dihydrothiophen-3-carboxylic acid, 1117.

7-Keto-4-methoxy-7:8-dihydrohomophenalene, 790. 3-Keto-10-methoxy-1:2:3:4:5:6-hexahydrochrysene, and its 2:4-dinitrophenylhydrazone, 1742.

3'-Keto-4-methoxy-7-methyl-1:2-cyclopentenophenanthrene, 799.

5-Keto-8-m-methoxyphenyloctoic acid, methyl ester, preparation of, 1741.

1-Keto-5-methoxy-1:2:3:4-tetrahydronaphthalene, 789.

1-Keto-8-methoxy-1:2:3:4-tetrahydrophenanthrene, preparation of, 791.

4-Keto-7-α-naphthylheptoic acid, and its semicarbazone, 1740.

5-Keto-8-a-naphthyloctoic acid, and its semicarbazone,

Ketone, C₁₃H₁₆O₂, and its derivatives, from reduction of picrotoxinone, 941.

Ketones, aromatic, photochemical decomposition of,

condensation products of, with phenols, 195, 1421. cyclic, $\alpha\beta$ -unsaturated, reactions of, 264, 1531. long-chain, synthesis of, 201.

prototropy of, 1353.

5-Keto-4-o-nitrobenzylidene-2-methyl-4:5-dihydrothiophen-3-carboxylic acid, 1117.

9-Keto-1:2:3:4:9:10:11:12-octahydrophenanthrene, cis-7-amino-, -hydroxy-, and -nitro-, 173. 3'-Keto-1:2-cyclopentenophenanthrene, 4:7-dihydroxy-,

and its diacetyl derivative, 1404. 9-Ketoperhydrophenanthrenes, and their oximes, 847.

5-Ketoruban, and its derivatives, 1243.

5-Keto-6:9-rubanene, and its derivatives, 1243.

5-Keto-5:6:7:10-tetrahydroacrindoline, 787.

1'-(or 4')Keto-1':2':3':4'-tetrahydro-5:6-benzhydrindene-1-spirocyclohexane, 173.

L.

γ-Lactones, hydrolysis of, by alkalis, 508.

Lapachol acetate and methyl ether, 883.

and its derivatives, spectra of, absorption, 878. a- and β-Lapachone 2:4-dinitrophenylhydrazones, 1528.

Lariciresinol, stereochemistry of, and of pinoresinol, 1054.

a-Laurodidecoin, 578.

 β -Laurodidecoin, 105.

β-Laurodimyristin, preparation of, 104.

Lead suboxide, $163\overline{7}$.

Lectures delivered before the Chemical Society, 1203, 1642.

Leucadendron species, leaves, constituents of, 1085. Leucodrin, degradation of, 1085.

methyl ether, acetyl derivative, and dibromo-, 1087. tetramethyl ether, and mono- and di-bromo-, and nitro-, and their derivatives, 1087.

Leuconostoc dextranicum, dextran synthesised by, 581. Lichenin, derivatives, osmotic pressure of, 664.

Lignan diols, synthesis of, 1237.

Linalool xenylurethane, 1500.

Linkings, double, addition to, 362, 367, 371, 381, 870. unsaturated, and absorption spectra, 1177.

Liquids, chemically related, viscosity of, 1341.

intermolecular forces in, 75, 79. Lithium triphenylmethoxide, 315.

Lithocholic acid, preparation of, 541.

Liversidge Lecture, 1203.

n- and iso-Lomatiols, spectra of, absorption, 878.

Lumisterol, structure of, 250.

Lupeol, addition of hydrogen chloride to, 322. Lupenyl esters, oxidation products of, 322.

n- and iso-Lupenyl acetates, 324.

Luteolin, synthesis of, 91.

dl-Lysine dipicrate, 1566.

M

Magnesium iodide, addition of, to camphor and terpene derivatives, 1961.

Malachite green leuco-cyanide, phototropy of, in solution, 1457.

Maleic anhydride, additive compound of, with caryophyllene, 1853.

reaction of, with thiosemicarbazones, 1048.

Malonic acid, ethyl hydrogen ester, potassium salt, electrolysis of, in ethylene glycol, 1109.

Manganese oxide, active, heat of adsorption of gases on, 857.

oxides, magnetic susceptibilities of, 1433.

Marrubic acid, and its acetyl derivative, 588.

Marrubiin, and its derivatives, 587.

Marrubium vulgare. See Horehound.

dl-, d-, and l-Matairesinol dimethyl ethers, synthesis of, 154

Memorial Lecture, Haber, 1642.

 $\Delta^{1:4}(8)$ -p-Menthadien-3-one, and its derivatives, 1502. dl-p-Menthan-3-one, 1:8-dibromo-, and its derivatives, and 1:8-dichloro-, 1501.

l-trans-4-Menthen-3-ol, and its 3:5-dinitrobenzoate, 1037.

dl- Δ^4 -Menthen-3-one, and its 3:5-dinitrobenzoate,

—)-Menthol, and its tartranilate, 639.

Menthone series, 1037, 1306.

Mercury

Mercuric bromide, effect of, on hydrolysis of alkyl bromides in acetone, 1872.

Mesidine, preparation of, 984.

Metallic oxides, magnetic susceptibility of, 1433.

salts, complex, constitution of, 1622.

5-Methoxyacenaphthene, 792. 5-Methoxy-1-(2'-acetamido-4'-methoxyphenyl)-2-

methylbenziminazole, 160.

6-Methoxyacetophenone, 2-mono- and 2:5-di-hydroxy-, and dibenzoyl derivative of the latter, 959.

Methoxyacetophenones, mono- and di-hydroxy-, 1926.

4-Methoxy-5-acetylbenzaldehyde, 2-hydroxy-, 929. 4-Methoxy-5-acetylbenzoic acid, 2-hydroxy-, 929.

5-Methoxy-8-acetyl-2:2-dimethylchroman, 7-hydroxy 1259.

- 3-Methoxy-6-acetyl-2-methylphenoxyacetic acid, and its 2:4-dinitrophenylhydrazone, 1599.
- 6-Methoxy-2-acetylnaphthalene, and its oxime, 1399.
- 5-Methoxy-1-(2'-amino-4'-methoxyphenyl)-2-methylbenziminazole, 160.
- 3-Methoxybenzaldehyde, 2:5-dihydroxy-, 1927.
- 5-Methoxybenzene, 1:2:4-trihydroxy-, 1453.
- 2'-Methoxy-6:7-benzoflavone, 1683.
- 3-Methoxybenzoquinone, 2:5-dihydroxy-, bismethylamine salt, 1454. 2:5-diacetyl derivative, 1452.
- 5-Methoxybenzoquinone, 2-hydroxy-, and its 2-acetyl derivative, 1453.
- 2-p-Methoxybenzoyl-3:6-diphenylbenzoic acid, and its methyl ester, 394.
- ${\bf 2-Methoxy-4-benzyloxyacetophenone,}~929.$
- 6-Methoxy-8-cholesterylcarbamidoquinoline, 4.
- 4-Methoxycoumaran, 6-hydroxy-, and its derivatives, 932.
- 4-Methoxycoumarone-2-carboxylic acid, 6-hydroxy-, ethyl ester, 931.
- 5-Methoxy-m-cresol, 2:6-dichloro-, 282.
- 2-Methoxy-NN-diacetyl-1:4-phenylenediamine, and 5-nitro-, 1286.
- 6-Methoxy-3:7-dimethylcoumarone, and its picrate, 1600.
- 6-Methoxy-3:7-dimethylcoumarone-2-acetic acid, and its amide, 1600.
- 6-Methoxy-3:7-dimethylcoumarone-2-carboxylic acid, and its ethyl ester, 1599.
- 6-Methoxy-3:7-dimethylcoumarone-2-pyruvic acid, and its oxime, 1600.
- 6'-Methoxy-3':3-dimethyl-2':3'-dihydrobenzofurano-(2':3':5:4)- $\Delta^{2:5}$ -cyclohexadienone-2-carboxylic acid and its methyl ester, 1598.
- 4-Methoxy-3':7-dimethyl-1:2 cyclopentadienophenanthrene, 799.
- 4-Methoxy-3':7-dimethyl-1:2-cyclopentenophenanthrene, 799.
- 3-Methoxydi-2-naphthoylmethane, 1682.
- 3'-Methoxy-2:2'-dinaphthoylmethane, 1-hydroxy-, 1681.
- 4-Methoxydiphenyl, 4'-nitrosoamino-, acetyl derivative, 1285.
- 4'-Methoxydiphenyl ethers, 2-amino-, and 2-nitro-,
- **4-Methoxydiphenylamine**, 2:2'-diamino-, and its diacetyl derivative, and 2:2'-diamino-4-hydroxy-, diacetyl derivative, 161.
- 4-Methoxydiphenylsulphone, 3-chloro-, 906.
- 3-Methoxy-4-ethoxybenzoic acid, 5-bromo-, and its ethyl ester, 1166.
- 4-Methoxy-3-ethoxybenzoic acid, and 5-bromo-, and its methyl ester, 1167.
- 2-Methoxy-2'-ethoxydiphenyl ether, 1165.
- 2-Methoxy-3-ethoxydiphenyl ether, 1168.
- 3-Methoxy-2-ethoxydiphenyl ether, 1166.
- 7-Methoxy-4-ethoxy-3'-keto-1:2-cyclopentenophenanthrene, 1403.
- 7-Methoxy-4-ethoxyphenanthrene-1-β-propionic-2-carboxylic acid, and its methyl ester, 1403.
 5-Methoxy-4-ethoxyphthalic acid, and its etl
- 1164.
 7-Methoxy-4-ethoxy-1:2:3:4-tetrahydronhenanthrene-
- 7-Methoxy-4-ethoxy-1:2:3:4-tetrahydrophenanthrene-1- β -propionic-2-carboxylic acid, 1404.
- 6-Methoxyflavone, 5-hydroxy-, 961.
- 7-Methoxyflavone, 8-hydroxy-, and its acetyl derivative, 961.
- 8-Methoxyflavone, 5-hydroxy-, synthesis of, 1922.
- **4-Methoxy-7-formylcoumarone**, 6-hydroxy-, and its 2:4-dinitrophenylhydrazone, 932.
- 4-Methoxy-7-formylcoumarone-2-carboxylic acid, 6-hydroxy-, and its ethyl ester, and its 2:4-dinitrophenylhydrazone, 931.

- 6-Methoxy-2-formyl-3:7-dimethylcoumarone, and its 2:4-dinitrophenylhydrazone, 1600.
- 6-Methoxy-2-formyl-2-methylcoumarone, and its 2:4-dinitrophenylhydrazone, 1597.
- 7-Methoxy-5:6:4':5'-furocoumarin-2'-carboxylic acid, ethyl ester, 932.
- 7-Methoxy-5:6:4':5'-furocoumarin-3-carboxylic acid 932.
- 4-Methoxycycloheptanone, and its derivatives, 188.
- 4-Methoxycyclohexanone, derivatives of, 188.
- 5-Methoxyhydrindene-1-spirocyclohexane, 177.
- 5-Methoxy(or hydroxy)-1-[2'-amino-4'-hydroxy(or methoxy)phenyl]-2-methylbenziminazole, and its diacetyl derivative, and chloro-, 162.
- 2-Methoxy-2'-methyl- α -azonaphthalene, 1315.
- 6-Methoxy-3-methylcoumarone-2-acetic acid, and its amide, 1598.
- 6-Methoxy-3-methylcoumarone-2-pyruvic acid, and its oxime, 1598.
- **4-Methoxy-4'-methyldiphenylamine**, 2:2'-diamino-, diacetyl derivative, and 2:2'-dinitro-, 160.
- Methoxymethyleneacetophenone, 121.
- **4-Methoxy-5:6-methylenedioxybenzene**, 1:2:3-tri-bromo-, 442.
- 2-Methoxy-3:4-methylenedioxyphenylacetaldehyde, derivatives, 441.
- 2-Methoxy-3:4-methylenedioxyphenylacetic acid, 441.
- **4-Methoxy-2:3-methylenedioxypropenylbenzene**, and 5:6:α:β-tetra bromo-, 442.
- 2-Methoxymethylethyl-a-tetralones, and their semi-carbazones, 942.
- 4-Methoxy-7-methylhomophenalene, 790.
- **4-Methoxy-6-methylnaphthalene**, 1-bromo-, and dibromo-, 797.
- β -4-Methoxy-6-methyl-1-naphthylethyl alcohol, 797.
- 8-Methoxy-1-methylphenanthrene, and its derivatives, 787, 791.
- 2-Methoxy-7-methylphenazine, 161.
- 1-4'-Methoxy(or methyl)phenyl-5-methyl(or methoxy)-2-methylbenziminazole, 1-2'-amino-, acetyl derivative, 161.
- 5-Methoxy-2-methylthiophen-3-carboxylic acid, and its ethyl ester, 1117.
- 2-Methoxynaphthalene, 6-amino-, 6-acetyl derivative, 1399.
- 5-Methoxynaphthalene, 1-iodo-, 789.
- 4-Methoxynaphthalic anhydride, 792.
- 2-(1'-Methoxy-2-naphthoy1)-3:6-diphenylbenzoic acid methyl ester, 400.
- 2-(5-Methoxy-2'-naphthoyl)-3:6-diphenylbenzoic acid, 2-1'-hydroxy-, 400.
- 2-(6'-Methoxy- β -naphthoyl)-3:6-diphenylbenzoic acid, 394.
- 1-3'-Methoxy-2'-naphthoyloxy-2-acetonaphthone, 1680.
- 5-Methoxy-1-naphthylamine, 788.
- 2-(3'-Methoxy-2'-naphthyl)-7:8-benzochromone, 1681.
- Methoxy-2'-naphthylbenzochromones, 1683.
- 1-Methoxy-2-naphthyl aβ-dibromo-β-(6-bromo-3:4-methylenedioxyphenyl)ethyl ketone, 4-bromo-, 97.
- 1-Methoxy-2-naphthyl α-bromo-β-ethoxy-β-(6-bromo-3:4-methylenedioxyphenyl)ethyl ketone, 4-bromo-, 97.
- 1-Methoxy-2-naphthyl a-bromo-β-methoxy-β-(6-bromo-3:4-methylenedioxyphenyl)ethyl ketone, 4-bromo-, 97.
- 2-Methoxy-2-naphthyl 6-bromo-3:4-methylenedioxystyryl ketone, 96.
- 1-Methoxy-2-naphthyl a:6-dibromo-3:4-methylenedioxystyryl ketone, 4-bromo-, 97.
- γ -5-Methoxy-1-naphthylbutyric acid, cyclisation of, 790.
- β -(6'-Methoxy-1'-naphthyl)ethylcyclohexane-2:6-dione, preparation of, 1741.

Methoxynorpicrotic acid, and its methyl ester, 942.

7-Methoxy-1:2:3:4:9:10:11:12-octahydrophenanthrene-1- β -propionic-2-carboxylic acid, 1402.

7-Methoxy-1:2-cyclopentenophenanthrene, 4:3'-dihydroxy-, and its 4-acetyl derivative, 1400.

2-Methoxyphenazine, 161.

2-Methoxyphenoxarsine, 10-chloro-, 1723.

3-Methoxyphenoxyacetone 2:4-dinitrophenylhydrazone, 1597.

 β -m-Methoxyphenylethylcyclohexane, 176.

β-m-Methoxyphenylethylcyclohexanol, and its 3:5-dinitrobenzoate, 176.

 β -m-Methoxyphenylethyl- Δ^1 -cyclohexene, 176.

 β -2-(5-p-Methoxyphenylfuryl)ethylamine hydrochloride, 1746.

 β -2-(5-p-Methoxyphenylfuryl)ethylcarbamic acid, methyl ester, 1746.

 β -2-(5-p-Methoxyphenylfuryl)propionic acid, and its derivatives, 1746.

5- and 7-Methoxy-8-β-phenylpropionyl-2:2-dimethyl-chromans, hydroxy-, and their derivatives, 1260.

2- $(\gamma$ -m-Methoxyphenylpropyl)cyclopentanone, and its derivatives, 1405.

2-(γ-m-Methoxyphenylpropyl)cyclopentanone-2-carboxylic acid, ethyl ester, and its semicarbazone, 1404. p-Methoxyphenyl-2-pyridylcarbinol, and its phenylurethane, 812.

β-2-(5-p-Methoxyphenylpyrryl)propionic acid, and its derivatives, 1746.

N-4'-Methoxyphenylquinoneimine, 3: N-2'-diamino-, diacetyl derivative, 161.

 β -2-(5-p-Methoxyphenylthienyl)ethylamine, derivatives of, 1747.

 β -2-(5-p-Methoxyphenylthienyl)ethylcarbamic acid, methyl estar 1746

methyl ester, 1746. β-2-(5-p-Methoxyphenylthienyl)propionic acid, and its derivatives, 1746.

4-Methoxyphthalic acid, preparation of, and 5-amino-, 5-iodo-, and 3-nitro-, methyl esters, 1162.

5-Methoxyphthalic acid, 3-bromo-4-hydroxy-, and its methyl ester, 1163.

Methoxy-p-terphenyls, 1285.

γ-(5-Methoxy-1:2:3:4-tetrahydro-1-naphthyl)butyric acid. 789.

 β -(5-Methoxy-1:2:3:4-tetrahydro-1-naphthyl)ethyl alcohol, and its 3:5-dinitrobenzoate, 789.

β-(5-Methoxy-1:2:3:4-tetrahydro-1-naphthyl)ethylmalonic acid, 790.

 7-Methoxy-1:2:3:4-tetrahydro-1:2-cyclopentenophenanthrene, 4-hydroxy-, and its p-nitrobenzoate, 1401.
 7-Methoxy-1:2:3:4-tetrahydrophenanthrene, and its

picrate, 175. **3-Methoxytoluene**, 2:5:6-trihydroxy-, and its 2:5:6-triacetyl derivative, 1455.

5-Methoxy-p-toluic acid, 2:6-dichloro-3-hydroxy-, and its methyl ester, 283.

3-Methoxytoluquinone, 6-hydroxy-, and its acetyl derivative, 1456.

5'-Methoxy-2:2':2'-trimethylchromano-8':7':5:6-γpyrone, 1259.

6-Methoxy-2:3:7-trimethylcoumaran, 1600.

6-Methoxy-2:3:7-trimethylcoumarone, 1600.

6'-Methoxy-3':7':3-trimethyl-2':3'-dihydrobenzo-furano-(2':3':5:4)-(2':3':5:4)- $\Delta^{2:5}$ -cyclohexadienone-2-carboxylic acid, 1601.

Methyl carbonate, dipole moment and structure of, 1118.

groups, bond length of, with aromatic carbon, 1324. isonitrile, co-ordination by, 1105.

2-Methyl-6- and -8-acetonaphthones, and their derivatives, 793.

2-Methyl 3:4-acetone β -1:6-anhydrogalactopyranose, 389.

3-Methylacridone-6-carboxylic acid, 139.

Methylamine, alcoholic, action of, on benzoquinone and toluquinone derivatives, 1446.

thermal decomposition of, 501.

Methylamines, thermal decomposition of, 495, 1360. 2-Methylamino-5-hydroxy-3-methoxy-1:4-benzoquinone, and its methylamine salt, 1454.

3-Methylamino-6-hydroxy-4-methoxy-2:5-toluquinone, 1456.

6-Methylamino-3-hydroxy-4-methoxy-2:5-toluquinone, 1455.

3-Methylamino-6-hydroxy-2:5-toluquinone, 1455.

2-Methyl β -1:6-anhydrogalactopyranose, 389.

4-Methyl anhydrogalactose phenylosazone, 1737.

3-Methyl l-arabinose phenylosazone, 754.

3-Methyl d-arabo-ascorbic acid, 247.

O-Methylartabotrine, and its derivatives, 995. N-Methylartabotrinine, 997.

cis-m-Methylazobenzene, 1313.

8-Methyl-1:2-benzanthracene, 270.

10-Methyl-1:2-benzanthracene, 10-chloro-, and 10-hydroxy-, 804.

 $\begin{array}{ll} \textbf{(2-Methyl-3:4-benz-1-benzoxazole)(2-methyl-1-benz-thiazole)} \\ \textbf{methincyanine} \ p\text{-toluenesulphonate}, \ 150. \end{array}$

1'(or 4')Methyl-5:6-benzhydrindone-1-spirocyclohexane, 173.

4-Methylbenzhydrylamine d-bromocamphorsulphonate, 1959.

N-4-Methylbenzhydrylaminoacetic acid, 1959.

2-Methylbenzthiazolone, 4-chloro-, 472. (+)- β -Methyl-n-butyl alcohol, and its tartranilates. 639.

Methyl-n-butylamine hydrochloride, 1789.

4-Methyl-tert.-butylaminoazobenzene, 4'-nitro-, 1385.

4-Methyl-6-butylcoumarin, 5-hydroxy-, 1253.

Methylcarbostyrils, 1861.

N-Methyl-N-cetylaniline hydrochloride, 5. Methylcholestanol, dehydrogenation of, 794.

4-Methylcoumarin, 5-hydroxy-, butyryl and propionyl derivatives, 1252.

5-Methylcoumarone, condensation product of, 279. Methyldibromogold, 766.

e-Methyl- $\alpha\beta$ -dihydrogeranic acid, β -hydroxy-, and its ethyl ester and oxide, 438.

7-Methyl-3:4-dihydronaphthalene-1:2-carboxylic acid, 947.

7-Methyl-3:4-dihydro-1-naphthoic acid, 947.

N-Methyldihydroniquidine, 245.

5:4'(1'-Methyl-1':4'-dihydroquinolylidene)-3-ethyl-rhodanine, 1013.

1:4'-(1'-Methyl-1':4'-dihydroquinolylidene)-2-keto-1:2-dihydrothionaphthen, 1013.

1-Methyl-3:5-dimethylcyclohexanol, 1-hydroxy-, 188. 5-Methyldiphenyl, 2-nitro-, 1292.

4'-Methyldiphenyl sulphide, 5-chloro-2-nitro-, 905.

5-Methyldiphenyl ethers, 2-amino-, and 2-nitro-, 1723.

4'-Methyldiphenylamine, 2:2'-diamino-4-hydroxy-, diacetyl derivative, 162.

2-Methyldiphenyl-4'-carboxylic acid, 1287.

4'-Methyldiphenylsulphone, 5-chloro-2-nitro-, 905.

Methyldisilylamine, preparation and properties of, 819.

9-Methyldodecahydrophenanthrene, 850.

Methylene groups, reactive, and nitroso-compounds, 1428.

Methyleneacetophenone, hydroxy-, alkyl ethers of, 120.

Methylenebismethyl-n-propylamine, 1788.

Methylenebisthioacetic acid, ethyl ester, self-condensation of, 347.

3':4'-Methylenedioxy-7:8-benzoflavone, 6'-mono- and 6:6'-di-bromo-, 98.

3':4'-Methylenedioxy-1-benzylidene-5:6-benzocoumaran-2-one, 6'-bromo-, 98.

3:4-Methylenedioxydibenzoylmethane, 6-bromo-, 98.

- 6:7-Methylenedioxy-1-(3':4'-methylenedioxyphenyl)-2:3-dihydroxymethyl-1:2:3:4-tetrahydronaphthalene, and its anhydride, 1240.
- 6:7-Methylenedioxy-1-(3':4'-methylenedioxyphenyl)-1:2:3:4-tetrahydronaphthalene-2:3-dicarboxylic acid,

Methyleneimines, cyclic, 1787.

p-Methylethylaminophenetole picrate, 1170. β -Methylethylanisoylpropionic acids, and their semicarbazones, 942.

γ-Methylethylanisylbutyric acids, 942.

- 1-Methyl-1'-ethyl-2:2'-azacyanine iodide. See Methyl-2-quinoline)(1-ethyl-2-quinoline)azamethincyanine iodide.
- 2-Methyl-4-ethylcycloheptanone, and its derivatives,
- 2-Methyl-6-ethylnaphthalene, and its derivatives, 793.

2-Methyl-4-ethylresorcinol, preparation of, 134.

- 4-Methyl-2-ethylresorcinol, di-p-nitrobenzoyl derivative, 951.
- 1'-Methyl-2-ethylselena-4'-cyanine iodide, 1012.
- 2-1-Methyl-4-ethyl-5:6:7:8-tetrahydronaphthalene, hydroxy-, and its p-nitrobenzoate, 941.
- 4-Methyl-1-ethyl-5:6:7:8-tetrahydronaphthalene, 2hydroxy-, 942.
- 1'-Methyl-2-ethylthia-4'-cyanine iodide, and 5-chloro-,
- $o-(\beta-Methyl-a-ethylvinyl)$ phenyltrimethylammonium iodide, 463.
- O-Methyleuparin, 928.

4'-Methylflavone, 6-bromo-, 96.

 β -2-(5-Methylfuryl)propionic acid, and its esters, 1747.

2-Methyl galactose, anilide, 390.

- 4-Methyl galactose phenylosazone, 1737.
- β -Methylgalactoside di- and tetra-nitrates, 1870.
- a-Methylglucosaminide hydrochloride, 125.

- β -Methylglucosaminide, derivatives of, 276. Methylglucosaminides, preparation and configuration of, 122.
- Methyl glucoses from methylated cellulose, 249.

 β -Methylglycerol $\alpha\gamma$ -diethyl ether, 949.

9-Methylisoguanine, 1786.

- (+)- γ -Methyl-n-heptane, rotation of, 633.
- 2-Methylcycloheptanone, derivatives of, 186.
- Methylcycloheptanones, and their derivatives, 187.

Methylcyclohexane, structure of, and physical properties, 1862.

Methylcyclohexane-1-a-cyanosuccinic acids, 1-cyano-, ethyl esters, 85, 86.

3-Methylcyclohexanone, molecular refractivity and refractive index of, 886.

δ-phenylthiosemicarbazone, 1050.

Methylcyclohexanones, derivatives of, 186.

- cis- and trans-4-Methylcyclohexyl-1-carbinols, and their derivatives, 1245.
- 2-Methylnaphthalene, condensation of, with acetyl chloride, 792.
- 2-Methylnaphthalene, 1-iodo-, 948.
- α and β -Methylnaphthalenes, spectra of, absorption, infra-red, 318.
- o-2'-Methyl-1'-naphthylbenzoic acid, 948.
- $3-(6'-Methyl-2'-naphthyl)-\Delta^{\circ}-cyclopenten-1-one-2$ acetic acid, 798.
- a- and β -5-Methylnorcholestadienes, 3:6-dihydroxy-, diacetyl derivatives, 1003.
- a- and β -5-Methylnorcholestadiene-3:6-diols, 1002.
- 5-Methylnorcholestane-3:6-diol-11-one-8:9-oxide, 1002. 5-Methylnorcholestane-3:6-dione-8:9-oxide,
- ando-tolylsemicarbazone, 1001. 5-Methylnorcholestane-8:9-oxide, 3:6-dihydroxy-, di-
- acetyl derivative, 1001. 5-Methylnorcholestane-3:6:11-trione-8:9-oxide, 1002.
- 5-Methylnorcholestan-11-one-8:9-oxide, 3:6-dihvdroxy-, diacetyl derivative, 1002.

- 5-Methyl- $\Delta^{8:9}$ -norcholestene-3:6-diol, constitution of,
- 5-Methyl- Δ ^{8:9}-norcholestene-3:6:11-triol, 1001.
- 5-Methyl- $\Delta^{8:9}$ -norcholesten-11-ol, 3:6-dihydroxy-, diacetyl derivative, 1002.

O-Methylnor-m-hemipinic acid, 1163.

- 1-Methyloctahydrophenanthrene-1-carboxylic acid. and its methyl ester, 1301.
- 1-Methyl-2-sec.-isooctyl- Δ^1 -cyclopentene, 1548.
 - 7-Methyl-1:2-cyclopentenophenanthrene, and its derivatives, 798.
 - 2-Methyl- Δ^1 -cyclopentenylacetic acid, 797.
 - a-Methyl-a-cyclopentylacetone, and its semicarbazone,

Methylphenoxarsines, 10-chloro-, 1723.

Methyl β -phenyl- β -anthronylethyl ketone, 948.

- 1:9-(4'-Methylphenylene)carbazole, and its derivatives, 1951.
- 4'-Methylphenylquinoneimine, 3:N-2'-diamino-, diacetyl derivative, 162
- 5-Methylphthalaz-1:4-dione, 837.
- 2-Methyl-2'-isopropenylfuro(4':5':6:7)chromone, 936.
- 2-Methyl-6-propionaphthone semicarbazone, 794.
- 4-Methyl-6-propylcoumarin, 5-hydroxy-, 1252.
- 2-Methyl-2'-isopropyl-2':3'-dihydrofuro(4':5':6:7)chromone, 936.
- 9-Methylpurine, 2-chloro-6-amino-, 1786.
- Methylquinoline oxides, salts of, 1861.
- 2-Methylquinoline. See Quinaldine. 4-Methylquinoline, 2-thiol-, preparation of, 1323.
- 7-Methylquinoline, 2-chloro-, and its picrate, 1861.
- 1-Methylisoquinoline, synthesis of, and its derivatives,
- (1-Methyl-2-quinoline)(1-ethyl-2-quinoline)azamethincyanine iodide, 148.
- (1-Methyl-2-quinoline)(2-methyl-1-benzthiazole)methincyanine iodide, 150, 1013.
- 2-O-Methylresacetophenone 2:4-dinitrophenylhydr-
- azone, 929. Methylsarsasapogenin, dehydrogenation of, 794.

4-Methylsulphonylpyridine, 875.

- Methyl-p-terphenyls, 1283.
- O-Methyltetrahydroeuparin, and its derivatives, 928. 4-Methylthiazole, 5-cyano-, and its hydrochloride, 445.
- 4-Methylthiazole-5-aldehyde, and its derivatives, 445.
- 4-Methylthiazole-5-carboxylic acid, amide and ethyl ester of, 444.
- β -(4-Methylthiazole-5)-ethylamine dihydrochloride, 446.
- β -(4-Methylthiazole-5)-propionic acid, a-amino-, 443.
- 1-Methylthiobenzthiazole, absorption spectrum and structure of, 1321.
 - quaternary salts, reactivity of methylthiol group in,
- 1-Methylthiolbenzoxazole, 149.
- 1-Methylthiolbenzthiazole, and its derivatives, 148. Methylthiolnaphthoxazoles, 149. 2-Methylthiolquinoline, and its derivatives, 147.
- 1-Methylthio-4-methylbenzthiazole, 472.
- 2-Methylthio-4-methylquinoline, 1323.
- 2-Methylthio-6-methylquinoline picrate, 1861.
- 2-Methylthio-1-methylquinolinium picrate, 1861.
- 2-Methylthiophen-3-carboxylic acid, 5-hydroxy-, and its ethyl ester, ethers of, 1117
- 4-Methylthiopyridine, and its salts, 875.
- 1-Methyl γ -p-tolylpentyl ketone and its semicarbazone,

Methyluric acids, 1371.

- N-Methyl-p-xylidene, 3:5-dinitro-, 1444.
- Micro-organisms, formation of organo-metalloidal compounds by, 163.
- Miro tree. See Podocarpus ferrugineus.
- Mitragyne speciosa, alkaloids of, 986. Mitragynine, and its derivatives, 986.

Molecular dissymmetry in benzene series due to restricted rotation, 460.

Molecules, flexible, polarisation of, 347. Myristicinaldehyde 2:4-dinitrophenylhydrazone, 443. Myristicin glycol, 443.

a-Myristodidecoin, 1520.

 β -Myristodidecoin, 1142.

N.

Naphthacene-11:12-quinone, 1:2:3:4-tetrachloro-9:10dihydroxy-, and 1:2:9:10-tetrahydroxy-, 401.

 $\alpha\beta$ -Naphthalaz-1:4-dione, 837.

 $\beta\beta$ -Naphthalaz-1:4-dione, and 6-amino-, and 6-nitro-, and their sodium salts, 837.

 β -Naphthaldehyde, preparation and derivatives of,

Naphthalene, spectrum of, absorption infra-red, 318. Naphthalene, 1:2-dichloro-4-nitro-, 346.

cyano-derivatives, group migration in, 253.

halogenonitro-derivatives, reactions of, with aromatic thiols, 1094.

1:2-disubstituted derivatives, 3-substitution in, 345.

Naphthalene-1'-azosalicylic acid, chromic salt, 834. Naphthalene-7-sulphonic acid, 2-cyano-, potassium salt, 254.

Naphthalene-1:5:6-tricarboxylic acid, preparation of, 1037.

Naphthaquinones, naturally-occurring, spectra of, absorption, and their derivatives, 878. β -Naphthil, 200.

 β -Naphthoin, and its derivatives, 200.

α-Naphthol, 5-amino-, acetyl derivative, 788.

1-Naphthonitrile-7-amidine hydrochloride, 256. α - and β -Naphthoxazoles, 1- and 2-thiol, 149.

2-a-Naphthoyl-3:6-diphenylbenzoic acid, 394.

2-2'-Naphthoyl-3:6-diphenylbenzoic acid, 2-1'-hydroxy-, and its acetyl derivative, 400.

2-2'-Naphthoylnaphthalene-3-carboxylic hydroxy-, 400.

Naphthoyloxy-2-acetonaphthones, 1680.

Naphthyl alkyl sulphides, amino-, and nitro-, 126. anthraquinonyl sulphides, nitro-, 1096.

ethyl and methyl sulphides, amino-, and nitro-, 126. nitronaphthyl sulphides, 1095.

 β -Naphthylacetic acid, 201.

 β -2-Naphthylacrylic acid, a-amino-, benzoyl derivative, and its ethyl ester, 200.

Naphthyl p-alkoxystyryl ketones, reactivity of, and their dihalides, 96.

a-Naphthylamine, 3-iodo-2-amino-, acetyl derivative, stannichloride, 346.

 β -Naphthylamine, 3-iodo-1-nitro-, and 1-nitro-, 3-mercuriacetate, 346.

 α - and β -Naphthylamines, nitration of, in presence of urea, 348.

3- β -Naphthylamino-N- β -naphthylphthalimide, 137. 3- β -Naphthylamino-N-phenylphthalimide, 137.

 $3-\beta$ -Naphthylaminophthalhydrazide, 139.

N-1'-Naphthyl-2-aminopyridine, N-2':4'-dinitro-, 1064. Naphthyl-7:8-benzochromones, 1680.

2-2'-Naphthyl-6:7-benzochromone, 1683.

2-2'-Naphthyl-7:8-benzochromone, 2-3'-hydroxy-, and its acetyl derivative, 1681.

2'-Naphthylbenzochromones, hydroxy-, and their acetyl derivatives, 1683.

2-Naphthyl $a\beta$ -dibromo- β -(6-bromo-3:4-methylenedioxyphenyl)ethyl ketone, 4-bromo-1-hydroxy-, and 1-hydroxy-, 1-acetyl derivative, 97.

4-2'-Naphthyl-6-(6"-bromo-3":4"-methylenedioxyphenyl)-\(\Delta^3 - cyclohexen-2-one-1-carboxylic acid, \(4-1'-\) hydroxy-, ethyl ester, 97.

2-Naphthyl 6-bromo-3:4-methylenedioxystyryl ketone, 4-bromo-1-hydroxy-, and 1-hydroxy-, and its acetyl derivative, 96.

7- β -Naphthyl-4:7-diketoheptoic acid, 7- β -6'-hydroxy-,

2:6- and 2:7-Naphthylenediamidine dihydrochlorides, 255, 256.

 β -1'-Naphthylethylcyclohexane-2:6-dione, 1741.

 β -Naphthylideneacrylic acid, α -cyano-, ethyl ester, 200. β -Naphthylidenemalonic acid, 200.

 β -Naphthylmethylmalonic acid, 200.

3-(β -Naphthylmethyl)quinoxaline, 2-hydroxy-, 201. 3-p-Naphthyl- Δ^2 -cyclopentenone-2-acetic acid, 3-6'hydroxy-, 1404.

N- β -Naphthylphthalimide, 3-chloro-, 136.

 β -Naphthylpyruvic acid, 201.

Nickel chloride, equilibrium of, with cadmium chloride and water, 646.

with cadmium and sodium chlorides and water,

l-Nicotine, effect of, on rotation of ethyl tartrates, 962. Niquidine, 240.

constitution of, and its derivatives, 1294.

isoNiquidine, 244.

Nitogenin, and its derivatives, 800.

diNitro-compounds, detection in, of m-orientation, 920.

polyNitro-compounds, complex formation by, 1858. with aromatic hydrocarbons and bases, 98, 972.

Nitrogen compounds, tervalent, optically active, preparation of, 1945.

Nitrogen dioxide (nitric oxide), reaction of, with oxygen, 5.

Nitric acid, reaction of, with sulphur monoxide, 600. Nitrous acid, reaction of, with sulphur monoxide,

Nitrogen organic compounds, photolysis of, 12, 17. Nitro-groups, determination of, in organic compounds, 403.

Nitroso-compounds and reactive methylene groups, 1428.

aromatic, identification of, 1442.

Nonane-1:9-dicarbonamidoxime, 1255.

p-n-Nonyloxybenzoic acid, polymorphism of, 424. trans-p-n-Nonyloxycinnamic acid, polymorphism of, 425.

x-Noræstrone, and its acetate and methyl ether, 1402. synthesis of, 1394.

Norpicrotic acid, and its esters, and hydroxy-, and its ethyl ester, 941.

Nudicaulin, and its chloride, 1465.

0.

Obituary Notices :-

James Aloysius Audley, 203.

George Barger, 715.

Edward Richards Bolton, 722.

Sir William Waters Butler, Bart., 1224.

Matthew James Cannon, 203. Charles Claude Carpenter, 204. William Alfred Davis, 1225.

John Thomas Dunn, 723. Edward Charles Edgar, 205.

Arthur Josiah Hoffmeister Gauge, 207.

Herbert John George, 1640. William Selten Gilles, 725.

Alfred John Greenaway, 207.

Francis Wood Hardy, 725.

Alan Haythornthwaite, 209. David Lloyd Howard, 1226.

Henry Francis Everard Hulton, 1227. George Nevill Huntly, 209.

Obituary Notices:-Arthur Hutchinson, 210. Léon Antonin Jaloustre, 1228. Moses William Jones, 1641. William Edward Kay, 726. Albert Theodore King, 1228 Patrick Henry Kirkaldy, 213. Arthur William Knapp, 726. Cyril Alec Lawrence, 727. Thomas Edward Lescher, 1230. Alfred Courtenay Luck, 728. Stevenson John Charles George Macadam, 728. Kendall Morgan Madigan, 729. William Henry Merrett, 214. Emile Mond, 729. Sir Robert Mond, 215. Charles Edward Munroe, 731. Alexander Macgillivray Nelson, 1230. John Paterson, 1641. Ardeshir Naservanji Peston-Jamas, 219. George Arthur Pingstone, 1231. Bertram Prentice, 219. Eloi Ricard, 1232. Hubert Naylor Bardsley Richardson, 732. Latimer Alexander Rumble, 1232. Alexander Scott Russell, 1233. Harcourt Henry Benjamin Shepherd, 732. Kotaro Shimomura, 221. Arthur Smithells, 1234. Thomas Stevenson, 733. U Tin, 223. Frederick Woodland Toms, 221. Alfred Edwin Howard Tutton, 734. Dennis Tyrrell, 737. Hermann Theodore Vulté, 223. Sidney Williamson, 1236. 4-Octylaminoazobenzene-4'-arsonic acid, 4. Octadeuteronaphthalene, 430. Octahydrochrysene, and its trinitrobenzene complex, 1:2:3:4:5:6:7:8-Octahydrophenanthrene, detection of, and its derivatives, 1364. 1:2:3:4:9:10:11:12-Octahydrophenanthrene, cis-7-hydr-

oxy-, and its derivatives, 175. as-Octahydrophenanthrene, stereochemistry of, 168. Octahydrorottlerone, 1584.

Octahydroallorottlerone, 1593.

Octamethyl di-idose, 1072.

β-Octanols, optically active and racemic, physical data for, 1789.

(-)- β -n-Octyl alcohol, and its tartranilate, 639.

a-sec.-isoOctyladipic acid, 1548.

N-n-Octylaminodiazoaminobenzene, 4'-nitro-, 1385.

 γ -sec.-isoOctyl- γ -butyrolactone, 1547.

trans-p-n-Octyloxycinnamic acid, polymorphism of,

sec.-isoOctylcyclopentane, derivatives of, 1544.

2-sec.-isoOctylcyclopentanone, and its 2:4-dinitrophenylhydrazone, 1548.

2-sec.-isoOctylcyclopentanone-2-carboxylic acid, ethyl ester, 1548.

n-Octylurethane, 186.

Oils, essential, Indian, constituents of, 1504.

Olefins, addition of bromine to, 224.

Olefinic compounds, addition of bromine 1515.

addition of bromine chloride, chlorine, and iodine chloride to, 1509.

Oleic acid, calcium and magnesium salts, effect of, on interfacial and surface tensions, 619.

ethanolamine salt, solubility of water in benzene solutions of, 53.

purification of, and its equilibria in mixtures with other higher fatty acids, 974.

Optical activity, due to difference between deuterium and hydrogen, 431.

in relation to valency of palladous atoms, 1754.

Optically active compounds, rotation of, influence of solvents on, 962.

Orcinol dimethyl ether, 2:6-dichloro-, 282.

Organic compounds, long-chain, substituted and unsaturated, films of, built-up, 777.

spectra of, absorption, and unsaturated linkings,

Organo-metalloidal compounds, formation of, by micro-organisms, 163.

m-Orientation, detection of, 920.

p-Orsellinic acid, methyl ethers, halogen derivatives, 280.

Ortho-effect, 1348, 1364.

Osmometer, 660.

Osmotic pressure in biochemical and chemical science,

of polysaccharide solutions, 660, 664.

Oxidation, electrolytic. See Electrolytic oxidation. mechanism of, 1805.

Oxides, non-stoicheiometric, 55.

N-Oximino-ethers, 769, 773.

Oxycellulose, 1908.

Oxygen, determination of, in iron and steel by vacuumfusion method, 631.

energy of chlorine bond to, 1332.

heat of adsorption of, on manganese oxide, 861. heavy, use of, as isotopic indicator in ester hydro-

lysis, 838. reaction of, with nitric oxide, 5.

P.

Palladium films, single-crystal, and their heat treatment in gases and in vacuo, 406.

Palladous atoms, 4-covalent, valency configuration of, 1754.

chloride, dehydrogenation by, 873.

8-Palmitamido-6-methoxyquinoline, 4.

Palmitic acid, amide, anilide, and methyl ester, binary systems of, with amide, anilide, and methyl ester of stearic acid, 615.

equilibrium of, with elaidic and oleic acids, 974. purification of, 615.

a-Palmitodidecoin, 1520.

 β -Palmitodidecoin, 1142.

a-Palmitodistearin, preparation of, 578.

N-Palmitoylarsanilic acid, 3.

Papaver nudicale, yellow pigment of, 1465. Parachor in binary mixed liquids, 79.

Paraffins, dihalogeno-derivatives, formation of quaternary ammonium salts from, in acetone, 412.

polyhalogeno-, reaction of, with tertiary amines, 644.

Parasantonide, circular dichroism and rotatory dispersion of, in ultra-violet, 889.

Pea-nuts, araban from, and its acetate, 452.

Pectic substances, 452, 454, 1865.

Penicillium, formation of organo-metalloidal compounds by, 163.

Pentacene-11:12-quinone, 13:14-dihydroxy-, 401.

Pentadeuterobenzophenone, 1961.

a-Pentadeuterophenylbenzylamine, resolution of, 1960. cycloPentadiene, association of, 870.

in carbon tetrachloride and in pure liquid state,

explosive decomposition of, 1770.

polymerisation of, 1761.

solubility of, in paraffin, 371.

cycloPentadiene compounds, identification of, 1442. cycloPentadienebenzoquinone, decomposition of, 375,

chloride and peroxide, 306.

1-Phenylanthracene, 396.

cycloPentadiene-a-naphthaquinone, decomposition of, Phenylazo-5:7-isohydroxy-\beta-phenylpropionyl-2:2-dimethylchromans, 1592 Phenyl p-benzyloxystyryl ketone, o-hydroxy-, and its O-Pentamethyldihydroallorottlerin, 1592. acetyl derivative, 1004. O-Pentamethylallorottlerin, 1591. Phenyl p-benzyloxystyryl ketones, reactivity of, 1004. O-Pentamethyltetrahydroallorottlerin, 1591. Pentane-1:5-dicarbonamidoxime, and its Phenyl 6-bromo- β -amino-3:4-methylenedioxystyryl ketone, 97. chloride, 1255. cycloPentylmethylacetoacetic acid, ethyl ester, 1549. Phenyl $\alpha\beta$ -dibromo- β -m-anisylethyl ketone, 95. Perchloroethylene. See Ethylene, tetrachloro-. Phenyl $\alpha\beta$ -dibromo- β -p-benzyloxyphenylethyl ketone, o-hydroxy-, and its acetyl derivative, 1004. Perhydrodiphenic acid, methyl ester, 855. Perhydrodiphenic acids, stereoisomerism of, and their Phenyl $\alpha \beta - di$ bromo- β -5-bromo- ϕ -anisylethyl ketone, anhydrides, 850, 856. Perhydrofluorenone semicarbazone, 857. Phenyl 5-bromo- β :2-dimethoxystyryl ketone, 95. Perhydrophenanthrene, 2-hydroxy-, and its deriv-Phenyl 6-bromo- β :3-dimethoxystyryl ketone, 95. α -bromo- β -ethoxy- β -p-benzyloxyphenylethyl atives, and 2:10-dihydroxy-, 175. Phenyl 9-hydroxy-, 848, 854. ketone, o-hydroxy-, 1005. 6-bromo- β -ethoxy-3:4-methylenedioxystyryl Perhydrophenanthrenes, 850. Phenyl stereoisomerism of, 842. ketone, 98 Phenyl a-bromo- β -methoxy- β -p-benzyloxylphenylethyl Perhydrorottlerin, 1587. Perimidine, amino-, hydrochloride, 256. ketone, o-hydroxy-, 1004. Phenyl 5-bromo-2-methoxy- β -ethoxystyryl ketone, 95. Persulphates. See under Sulphur. Phenyl 6-bromo-3-methoxy- β -ethoxystyryl ketone, 95. Phellandrene nitrosites, 466, 1418. Phenyl 6-bromo- β -methoxy-3:4-methylenedioxystyryl d- α -Phellandrene nitrosites, 1418. ketone, 98. Phenacyldimethyltelluronium bromide, 166. Phenanthraquinone, photochemical reaction of, with Phenyl α -bromo-o-methoxystyryl ketone, 95. aromatic aldehydes, 1430. Phenyl a-bromo-m-methoxystyryl ketone, 95. Phenanthrene, derivatives, synthesis of, 1838. Phenyl 5-bromo-2-methoxystyryl ketone, 94. phenylhydroxy-Phenanthrene, 9:10-dihydroxy-, Phenyl a:5-dibromo-o-methoxystyryl ketone, 95. methylene ether, and its derivatives, 1431. 4-Phenyl-6-(6'-bromo-3':4'-methylenedioxyphenyl)- Δ^3 -Phenanthrene series, syntheses in, 787. cyclohexen-2-one-1-carboxylic acid, ethyl ester, 97. Phenyl a:6-dibromo-3:4-methylenedioxystyryl ketone, Phenanthrene-9:10-dicarboxylic anhydride, 1841. Phenanthridine, dipole moment of, 1392 o-9-Phenanthrylmethylbenzoic acid, 493. Phenyl $\alpha\beta$ -dichloro- β -(6-bromo-3:4-methylenedioxy-Phenol, m-fluoro-, action of nitrous acid on, 1405. phenyl)ethyl ketone, 97. Phenols, alkylation of, 1168. 9-Phenylcarbazole, preparation of, and its derivatives, condensation of, with β -ketonic esters in presence of aluminium chloride, 1250. 9-Phenylcarbazole, 9-2-amino-, 2':4'-diamino-, and its acetyl derivatives, 2'-amino-4'-cyano-, 4'-chloro-, 4'-chloro-2'-nitro-, 4'-chloro-2'-nitro-, 2'-nitro-4'condensation products of, with ketones, 195, 1421. nitrosation of, 1405. amino-, and its acetyl derivative, and 2'-nitro-4-Phenols, halogeno-, and nitro-, dissociation constants cyano-, 1950, 1952. of, 1137. m-halogeno-, and their mononitro-derivatives, 9-Phenylcarbazole-4'-carboxylic acid, and its ethyl dissociation constants of, 263. ester, and 9-2'-amino-, and 9-2'-nitro-, ethyl esters, 1953. nitrosation of, and conversion into benzoquinoneoximes, 1808. 9-Phenylcarbazole-3:6-dicarboxylic acid, and 9-2'amino-, and 9-2'-nitro-, ethyl esters, 1955. nitro-, dissociation constants of, in deuterium oxide, 1366. Phenyl a-chloro-6-bromo-3:4-methylenedioxystyryl ket-Phenol ethers, alkyl higher, sulphonates of, 1828. one, 97. Phenoxarsine, 10-chloro-2-bromo-, 1723. a-Phenyl-a-chloromethylethylene oxide, 185. Phenoxyl groups, effect of, on merisation and radical 6-Phenylcoumalin-3-carboxylic acid, ethyl ester, 121. stability, 26. 9-Phenyl-1:2:3:4-dibenzanthracene, 494. 5-Phenoxy-4-methoxy-3-ethoxybenzoic acid, 1167. Phenyldi-n-butylarsine, 1631. 2-Phenoxyphenylarsonic acid, 2-p-bromo-, 1723. 1-Phenyl-2:3-di(hydroxymethyl)-1:2:3:4-tetrahydro-2-Phenoxyphenyldichloroarsine, 2-p-bromo-, 1723. naphthalene, 1240. 1-Phenyl-2:5-dimethylbenziminazole, 1-2'-amino-4 hydroxy-, and chloro-1-2'-amino-4'-hydroxy-, 162. Phenyl, formation of, in photolysis of aceto- and 1-2'-amino-4'benzo-phenones, 589. **Phenyl** β -ethoxyethyl sulphide, 2:4-dinitro-, 1067. 3'-Phenyl-4:2'-dimethylchromono-7':8':6:5-a-pyrone, methyl telluride, preparation of, and its halides, 593. Phenyl $\beta\beta$ -diphenylvinyl ketone, 434. nitronaphthyl sulphides, 1095. Phenylacetonitrile, condensations of, 771. o-Phenylenebis(di-n-butylarsine), 612. Phenylacetonitrile, oximino-, N-aryl ethers of, 773. $o ext{-}Phenylenebis(di-n-butylarsine)}dichloropalladium,$ 6-Phenylacetyl-4-methylcoumarin, 5-hydroxy-, and its derivatives, 1253. o-Phenylenebis(dimethylarsine), 612. Phenyl alkyl ketones, depolarisation potentials of, 546. o-Phenylenebis(dimethylarsine)dichloropalladium, d- and l- α -Phenylallyl alcohols, and their derivatives, 1697. dl-p-Phenylenebisiminocamphor, resolution of, 1568. Phenylamino-. See Anilino-. 1:9-Phenylenecarbazole, syntheses of, and its deriv-N-Phenyl-2-aminoquinoline, N-2':4'-dinitro-, 1061. atives, 1945. N-Phenyl-1-aminoisoquinoline, N-2':4'-dinitro-, 1062. 1:9-Phenylenecarbazole, mono- and di-bromo- and Phenyl-p-anisyldiphenylylcarbinol, 305. iodotrinitro-, 1955. Phenyl-p-anisyldiphenylylmethane, 306. 1:9-Phenylenecarbazole-3-carboxylic acid, 1954. Phenyl-p-anisyldiphenylylmethyl, 302. 1:9-Phenylenecarbazole-4'-carboxylic acid, 1953.

1:9-Phenylenecarbazole-3:6-dicarboxylic acid, and its

ethyl ester, 1955.

hvdro-

1-Phenylisoquinoline, synthesis of, and its 2:4-dinitroo-Phenylenediarsine tetrachloride, 612. Phenyl- β -ethoxyethylsulphone, 2:4-dinitro-, 1067. phenylhydrazone, 361. β -2-(5-Phenyltetrahydrofuryl)ethylamine -)- α -Phenylethylamine, 919. $1-\beta$ -Phenylethyl-2:6-dimethyl- Δ 6-cyclohexene-2-carbchloride, 1747. oxylic acid, and its ethyl ester, 1301. 1-Phenyl-1:2:3:4-tetrahydronaphthalene-2:3-dicarb-1- β -Phenylethyl-2-methyl- Δ ⁶-cyclohexene-2-carboxylic oxylic acid, and its esters, 1239. acid, and its ethyl ester, 1301. 5-Phenyl-5:8:9:10-tetrahydro- α -naphthaguinone, 396. Phenyl 7-ethyl-1-naphthyl ketone 2:4-dinitrophenyl- β -2-(5-Phenylthienyl)ethylamine, and its derivatives, 1745. hydrazone, 948. 4-Phenylflavylium chloride, 7:2':4'-trihydroxy-4-3":4"- β -2-(5-Phenylthienyl)ethylcarbamic acid, methyl ester, dihydroxy-, 1018. 1745 2-Phenylfluorenone, and its phenylhydrazone, 395. β -2-(5-Phenylthienyl)propionic acid, and its deriv-2-Phenylfluorenone-1-carboxylic acid, and its derivatives, 1745. 3-Phenylthiodiphenylsulphone, 4-nitro-, 906. atives, 395. β -Phenylfurylethylamine, 1743. β -Phenyl- β -p-tolylpropiophenone, β -hydroxy-, 435. β -2-(5-Phenylfuryl)ethylamine, derivatives of, 1744. Phenyl p-tolyl triketone β -anil oxide, 1430. β-2-(5-Phenylfuryl)ethylcarbamic acid, methyl ester, Phenyltrimethylammonium iodides, o-substituted. formation of, in methyl-alcoholic solution, 1348. 1744. Phloroglucinol trimethyl ether, derivatives of, 89. β -2-(5-Phenylfuryl) propionic acid, and its derivatives, Phloroglucinolcarboxylic acid, methyl ethers, halogen 2-Phenylcyclohexylideneacetic acid, 175. derivatives, 280. 1-Phenyl-2-methylbenziminazole, 1-2'-amino-, Phloroisovalerophenone hydrazone, 1603. acetyl derivative, 160. Photochemical reactions, 1430. Phenylmethyl-n-butylamine, 2:4-dinitro-, 1789. Photolysis of organic nitrogen compounds, 12, 17. Phenylmethylcarbinol, resolution of, 1156. Phthalaz-1:4-dione, 5- and 6-bromo-, and 6-iodo-, 837. Phenyl 7-methyl-1-naphthyl ketone 2:4-dinitrophenyl-Phthalaz-1:4-diones, substituted, luminescence of, 836. hydrazone, 947. Phthalic acid, esters, alkylation by means of, 1168. 1-Phenyl-3-methyl-4-cyclopentyl-5-pyrazolone, 1548. Phthalic acids, phenylated, 391. Phthalide, and 5-amino-, hydrolysis of, by sodium Phenylmethyl-n-propylamine, 2:4-dinitro-, 1788. hydroxide, 508. 1-Phenylnaphthacene-11:12-quinone, 9:10-dihydroxy-, Phthalimide, 3-bromo-, 836. Phenyl 1-naphthyl ketone 2:4-dinitrophenylhydrazone, Phthalocyanines, 1809, 1820. halogenation of, 1820. 9-Phenylpentacene-11:12-quinone, 13:14-dihydroxy-, Phthalo-4'-ethoxyphenylimide, 1170. Phthalo-4'-methoxyphenylimide, 1170. β -Phenyl- β -pentadeuterophenylpropiophenone, β- α -Picoline, ω -di- and -tri-chloro-, 781. a-Picolinic acid, decarboxylation of, 809. hydroxy-, 434 10-Phenylphenoxarsine-10-oxide-2-carboxylic Picrotoxin, 937, 1261. acid. resolution of, and its salts, 1050. Picrotoxinin, hydrogenation of, 1263. Phenyl β -phenyl- β -pentadeuterophenylvinyl ketone, Picrotoxinone, reduction products of, 940. 434. Pinoresinol, stereochemistry of, and of lariciresinol, Phenyl β -phenyl- β -p-tolylvinyl ketone, 435. Phenylphosphoamide, barium salt, 914. 7-Piperidino-2:4-dibenzenesulphonylbenzene, 906. Phenylphosphoanilide, 915. Piperidinodiphenylsulphones, nitro-, 904. Phenylphosphorylbenzamidine, sodium salt, 915. 1-Piperidino-2:4-di-p-tolylsulphonylbenzene, 906. Phenylphosphorylguanine, 915. 5-β-Piperidinoethylamino-7-ethoxyacridine, 3-amino-, 3-Phenylphthalic anhydride, 396. and 3-nitro-, 478. N-Phenylphthalimide, 3-chloro-N-p-nitro-, 137. 5- β -Piperidinoethylamino-7-methoxyacridine, Phenyl-2-piperidylcarbinol, and its derivatives, 811. amino-, and 3-nitro-, 477, 478. β -Phenylpropionamide-p-arsonic acid, and its sodium 5-Piperidino-4'-methyldiphenylsulphone, 2-nitro-, 905. 4-Piperidinoquinaldine, 6-nitro-, 566. salt, 157. β -Phenylpropionanilide-p-arsonic acid, and its sodium Pipettes, drainage of, 325. salt, 158. Plants, Argentine, studies on, 1841. leguminous, fish poisons from, 812, 1099, 1424. β -Phenylpropionic acid, β -o-bromo-, 796. Podocarpus ferrugineus, resin from, 1031. $a\beta$ -dibromo- β -o-eyano-, 358 Poisons, fish, from leguminous plants, 812, 1099, 1424. β -Phenylpropionodimethylamide-p-arsonic acid, and its sodium salt, 157. Polarisation, electric, of flexible molecules, 347. β -Phenylpropionoethylamide-p-arsonic acid, and its Polycyclic compounds, growth-inhibitory, synthesis of, sodium salt, 158. 802. β -Phenylpropionomethylamide-p-arsonic acid, and its related to sterols, 790. sodium salt, 157. Polyene series, 1549, 1554, 1556, 1560. β -Phenylpropionopiperidide-p-arsonic acid, and its sodium salt, 158. β -Phenylpropiono-n-propylamide-p-arsonic acid, and

its sodium salt, 158.

5:7-dihydroxy-, 1260.

oxy-, 1259.

1743.

8- β -Phenylpropionyl-2:2-dimethylchroman, 5:7-dihydr-

6- and 8-β-Phenylpropionyl-2:2-dimethylchromans,

Phenyl-2-pyridylmethylcarbinol, and its derivatives,

β-2-(5-Phenylpyrryl)ethylamine hydrochloride, 1744.

β-2-(5-Phenylpyrryl) propionic acid, and its derivatives,

m- and p-Polyphenols, absorption spectra of, 1173. Polysaccharides, 581, 585, 951, 1471, 1885, 1899, 1901, 1904, 1908, 1914. derivatives, osmotic pressure of, 660, 664. Polyterpenoid compounds, 1267. Potassium organic compounds :-Potassium 2:2'-dipyridylaurocyanide, 427. 4:5(o)-phenanthrolineaurocyanide, 428. Potential, depolarisation, of phenyl alkyl ketones at dropping-mercury cathodes, 546. electrostatic, and reaction velocities, 1780. Pressure, high, liquid-phase reactions at, 1761, 1770. Primetin, structure of, 956.

1994 Primetin methyl ether. See 8-Methoxyflavone, 5-Propaldehyde, combustion zones of, 1703. Propane, inflammation of, in air, 344. **Propane**, halogeno-derivatives, viscosity of, 1343. 5-isoPropenyl-1:2-benzanthracene, and its derivatives, 6-Propionyl-4-methylcoumarin, 5-hydroxy-, and its derivatives, 1252 5-n-Propoxy-2-methylthiophen-3-carboxylic acid, and its ethyl ester, 1117. n- and iso-Propyl bromides, exchange reactions of, with bromine, 1836. 5-isoPropyl-1:2-benzanthracene, and its derivatives, 5-isoPropyl-1:2-benzanthraquinone, 270. 2-isoPropylcoumaran, 6-hydroxy-, 935. 2-n-Propyl-3-coumaranone, 6-hydroxy-, 936. 2-n-Propylcoumarone, 6-hydroxy-, p-nitrobenzoate, 2-isoPropylcoumarone, 6-hydroxy-, 935. β -Propylglutaric acid, derivatives of, 1297. cis- and trans-4-isoPropylcyclohexyl-1-carbinols, and their derivatives, 1245. isoPropylidene groups, determination of, in sugar derivatives, 350. isoPropylidenedibromoleucodrin, and its derivatives, isoPropylideneleucodrin dimethyl ether, 1088. 3:4-isoPropylidene β -methylgalactoside 2:6-dinitrate, 1870. β -3-isoPropylphenylethyl alcohol, 1302. β -3-isoPropylphenylethyl bromide, 1302. $1-\beta-3-iso$ Propylphenylethyl-2:6-dimethyl- Δ^6 -cyclohexene-2-carboxylic acid, ethyl ester, 1302. 2-isoPropylthio-4-methylquinoline, 1323. Prototropy in cyclic systems, 567, 1408. (d-neo)-isoPulegol, and its derivatives, 1306. Pulegone, molecular refractivity and refractive index of, 886. Purine nucleosides, constitution of, 1369, 1784. Pyridine, 2-amino-, long-chain alkyl derivatives of, 1855. 4-chloro-, picrate, 877. Pyridine-2-aldehyde 2:4-dinitrophenylhydrazone, 782. Pyridine-4-sulphonic acid, ammonium and sodium salts, 876. Pyridine-4-thioacetic acid, and its sodium salt, 876. 1:2-Pyrido-7-amino-4:5-benz-1:3-diazaline, 1060. 1:2-Pyrido-7-amino-8:9-benzo-4:5-benz-1:3-diazaline,

Pyrido(1':2':1:2)benziminazoles, 1067. 1:2-Pyrido-8:9-benzo-4:5-benz-1:3-diazaline, 1064. 4-Pyridone, preparation of, and its picrate, 875. 1:2-Pyrido-7-nitro-4:5-benz-1:3-diazaline, 1060. 1:2-Pyrido-7-nitro-8:9-benzo-4:5-benz-1:3-diazaline,

p-(2-Pyridylamino)benzenesulphonamide, 1202. 1-4'-Pyridylpyridine-4-imine, and its salts, 876. 1-4'-Pyridyl-4-pyridone, and its salts, 877. Pyrocalciferol "pinacol" diacetate, 253. n- and iso-Pyrocalciferols, structure of, 250. Pyrogallol, condensation of, with acetone, 195.

Quillaic acid, and its derivatives, 1130. Quinaldine, 6-amino- and 6-bromo-4-hydroxy-, 4-chloro-6-amino-, -6-bromo-, and -6-nitro-, 6-chloro-4-hydroxy-, and 6-nitro-4-hydroxy-, and their derivatives, 564. n- and iso-Quinaldinic acids, decarboxylation of, 809. Quininic acid amine oxide, 1297.

Quinol, hydroxy-, condensation of, with acetone,

Quinoline derivatives, 4-substituted, preparation and therapeutic properties of, 489.

Quinoline, 4-chloro-, 2- and 4-cyano-, and 4-iodo-, and their ethiodides and methiodides, 1010.

1-isoQuinoline derivatives, synthesis of, 360.

n- and iso-Quinolines, spectra of, absorption, infra-red,

Quinoline-4-aldehyde, and its picrate, 1242. 1:2-Quinolo-7-amino-4:5-benz-1:3-diazaline, 1061. 1:2(2':1')-isoQuinolo-7-amino-4:5-benz-1:3-diazaline, 1063.

1:2(2':1')-isoQuinoloamino-4:5-benz-1:3-diazaline, 1062.

1:2-Quinolo-7-amino-8:9-benzo-4:5-benz-1:3-diazaline, 1065.

1:2(2':1')-iscQuinolo-7-amino-8:9-benzo-4:5-benz-1:3diazaline, 1066.

1:2-Quinolo-4:5-benz-1:3-diazaline, 1061.

1:2(2':1')-isoQuinolo-4:5-benz-1:3-diazaline, 1063.

1:2-Quinolo-8:9-benzo-4:5-benz-1:3-diazaline, 1065.

1:2(2':1')-isoQuinolo-8:9-benzo-4:5-benz-1:3-diazaline, 1066.

4-Quinolones, bromination of, 784.

1:2(2':1') isoQuinolo-7-nitro-9-amino-4:5-benz-1:3-diazaline, 1063.

1:2(2':1')-isoQuinolonitroamino-4:5-benz-1:3-diazaline, 1061.

1:2-Quinolo-7-nitro-4:5-benz-1:3-diazaline, 1061. 1:2(2':1')-isoQuinolonitro-4:5-benz-1:3-diazaline, 1062. 1:2(2':1')-isoQuinolo-7-nitro-4:5-benz-1:3-diazaline,

1063. 1:2-Quinolo-7-nitro-8:9-benzo-4:5-benz-1:3-diazaline,

1:2(2':1')-isoQuinolo-7-nitro-8:9-benzo-4:5-benz-1:3-diazaline, 1065.

 β -4-Quinolylacrylic acid, 1242.

p-(2-Quinolylamino)benzenesulphonamide, and its hydrochloride, 1202.

a-(4-Quinolyl)propane, γ -trichloro- β -hydroxy-, 1242. Quinovic acid, and its derivatives, 1760.

R.

Racemic compounds, resolution of, 1568. Radicals, free, 26, 33, 302, 307, 310, 314. Reactions, addition, to conjugated systems, 1853. exchange, kinetics of, 1279, 1836. liquid-phase, at high pressures, 1761, 1770. retardation of, 767 use of isotopes in, 1188. Report of the Council, 682. Resacetophenone, Gattermann reaction with, 132. 2:4-dinitrophenylhydrazone, 1018. Resins, natural phenolic, constituents of, 154, 1054, 1237. Resinols, 1303. triterpene, 1045, 1075. Resonance, steric influences on, 981. Resorcinol nucleus, y-substitution in, 132, 300, 949. Resorcinol ethers, sulphonic acids of, alcoholysis or hydrolysis of, 1834. Rice starch. See under Starch.

Rotation of optically active compounds, influence of solvents on, 962. Rottlerin, 1257, 1579, 1587.

Ruban, 5-substituted derivatives, 1241. Ruban-5-ol, and its picrate, 1244.

Rubber, natural, chemistry of, 676.

Rubidium hydrogen fluorides, 111. Rubidium organic compounds :-Rubidium triphenylmethoxide, 316.

S. Sabina ketone, and its derivatives, 1415. Sabinaketylamine, p-nitrobenzoyl derivative, 1418. d-Sabinol, catalytic hydrogenation of, 1040. Salicylanilide, association of, 484. Salicylethylanilide, 488. Salicylidene-p-aminobenzoic acid, ethyl ester, polarities of, in benzene, 1392. Salicylidene-m-toluidine, absorption spectrum of, 1461. Salicylmethylanilide, 488. Salts, hydrated, isomorphous replacement in, 646, 653. uni-univalent electrical conductivity of, in acetone, Salvadora oleoides and persica, seed fats of, 1015. Santonide, circular dichroism and rotatory dispersion of, in ultra-violet, 889. Santonin, addition of magnesium iodide to, 1961. Sapogenins, 794, 800, 1124, 1130. Sarcostemma Australe, saponin of, 737. Sarcostin, and its derivatives, 740. Sarsasapogenin o-bromobenzoate, 1201. Silane, derivatives of, 819. Silane, chloro-, reactions of, with aliphatic amines, 819. Silanes, chloro-, photochemical and thermal oxidation of, 1928. Silicon hydrides. See Silanes. Smilagenin o-bromobenzoate, 1201. Smilagenone, m.p. of, 1201. Sodium chloride, equilibrium of, with n- and isobutyric acids and water, 742. with cadmium, cobalt, and nickel chlorides and water, 653. heat of solution of, in methanol-water mixtures, 118. Sodium organic compounds :-Sodium dodecyl sulphate, electrical conductivity of solutions of, in alcohol-water mixtures, 522. triphenylmethoxide, 316. Solids, adsorption of gases and vapours on, 139. Solutions, model illustrating collisions in, 595. thermochemistry of, 118. Solvents, non-aqueous, acid catalysis in, 1096, 1774. ionisation in, 1337. Spectra, absorption, and structure of compounds containing chains of benzene nuclei, 1170. and unsaturated linkings, 1177. of sulphur organic compounds, 1321. Spinulosin, bismethylamine salt, 1456. Starch derivatives, osmotic pressure of, 664. horse-chestnut and wheat, constitution of, 951. rice, constitution of, 1471. Stearic acid, amide, anilide, and methyl ester, binary systems of, with amide, anilide, and methyl ester of palmitic acid, 615. equilibrium of, with elaidic and oleic acids, 974. purification of, 615. a-Stearodidecoin, 1520. β -Stearodidecoin, 1142. a-Stearodimyristin, 1520. β -Stearodimyristin, 1142. N-Stearoylarsanilic acid, 3. Stearoylquinine hydrochloride, 3. Stereochemistry, 108. Steroids, 998, 1078. Sterols, polycyclic compounds related to, 790. synthesis of substances related to, 1394. Sterol group, 250. Stilbene, 4:4'-dicyano-, 1256. Stilbenediamines, 1758. Stilbene-4:4'-dicarbonamidoxime, and its dihydro-

Structure, determination of, by monolayer measurements, 177. Strychnine, 603. Styrene, ω -bromo-o- and -p-cyano-derivatives, 357. Styrene-o-carboxylic acid, w-bromo-, and its amide, 5-Styrylacridine methiodide, 5-m-nitro-, 4. Suaveoline, 997. Substance, $C_{30}H_{44}OS$, and its derivatives, from β amyrin benzoate and sulphur, 755. Substitution, intramolecular, as means of comparing activating and de-activating effects, 1720. Succinic acid, methyl hydrogen ester, hydrolysis of, in heavy oxygen water, 839. Sugars, derivatives, determination in, of isopropylidene groups, 350. 5'-Sulphobenzeneazo-β-naphthol, 2'-hydroxy-, chromic and ferric compounds of, 832. 4'-Sulphonaphthalene-1':4-azo-1-phenyl-3-methylpyrazol-5-one, 2'-hydroxy-, chromic salt, 833. 5-Sulphonylanilino-7-methoxyacridine, 3-nitro-5-pamino-, 477. Sulphur, radioactive, for biochemistry, 1292. sols, ionic interchange in, 296. Sulphur monoxide, preparation and determination of, and its reaction with nitric and nitrous acids, 600. trioxide, sulphonation of nitrobenzene by. 1372. Sulphurous acid, reaction of, with iodic acid, using constant sulphite solution, 675. Sulphites, preparation of solutions of, of constant value, 506. Persulphates, reaction of, with iodides, 463. Sulphur organic compounds, 1074. Sulphurous acid, esters, 99. Sumatrol, 1601. Surface tension, in binary mixed liquids, 79. Synthesis, asymmetric, route of, in relation to configuration of enantiomorph resulting, 1201. Systems, conjugated, addition reactions to, 1853. cyclic, anionotropy and prototropy in, 1408. (+)-Tartranil, preparation of, 638. +)-Tartranilic acid, β -n-butyl esters, 640. Tartaric acid, esters, effect of, on rotation of l-nicotine, i-Tartaric acid, isobutyl ester, 967. Temperature, equation for, and vapour pressure, 292. low, velocity of reaction at, 1573. Terbium, purification of, 558. m-Terphenyl, preparation of, and its nitration, 1288. m-Terphenyl, 4'-amino-, acetyl derivative, and 4'-nitro-, 1291. Terphenyls, mono- and di-hydroxy-, 1283. Terphenyl series, 1283, 1288. 7-O-Tetra-acetyl- β -glucosidoxy-6-benzoyloxycoumarin, 1267. 1:2:3:4-Tetra-acetyl 6-trityl β -d-glucose, 1530. 2:2:5:5-Tetra-anisyl-2:5-dihydro-1:3:4-oxadiazole, 1075. Tetra-arylethylene sulphides, preparation of, 1074. Tetrabenztriazoporphin, and its metallic derivatives, and chloro-, copper derivative, 1809. Tetradecanecarbonamidine hydrochloride, 1257. 2-Tetradecylaminopyridine, 1857. 1-Tetradecyl-2-pyridoneimine sulphate, 1857. Tetrahydroacridine, 5-chloro-7-bromo-, and 5-chloro-7:9-dibromo-, 785. Tetrahydroacridone, 7-mono- and 7:9-di-bromo-, 785. Tetrahydrocarbazole, 5- and 7-bromo-, and 5-bromo-7nitro-, and their 9-acetyl derivatives, 238.

Tetrahydrocarbazole-8-carboxylic acid, 5-chloro-, 238.

Tetrahydrocitrylideneacetic acid, 1544.

Streptocarpus Dunnii, orange pigment from, 1522.

chloride, 1256.

a-Stilbenediol diacetate, 1432.

Thionaphthen, mercuration of, 1005.

```
dl-Tetrahydroelliptone, 1104.
                                                           2-Thionaphthenyl ethyl ketone, and its semicarbazone,
l-Tetrahydroelliptone, and its diacetate, 1103.
Tetrahydroeuparin, and its derivatives, 928.
                                                           1-Thio-2-n-propyl-1:2-dihydrobenzthiazole, 475.
                                                           4-Thiopyridone, and its picrate, 873.
  synthesis of, 933.
Tetrahydromarrubiin, 588.
                                                           Thiosemicarbazones, reaction of, with maleic an-
1:2:3:4-Tetrahydrophenanthrene, 9-hydroxy-, 3:5-di-
                                                             hydride, 1048.
                                                           Thujone series, 1040, 1415.
  nitrobenzoate, 175.
3:6-endoxo-△4-Tetrahydrophthalic anhydride, 4-hydr-
                                                           l-neoThujyl alcohol, and its nitrobenzoates, 1042.
  oxy-, 808.
                                                           Tocopherols, lower, synthesis of, 542.
1:2-Tetrahydropyrido-7-amino-8:9-benzo-4:5-benz-1:3-
                                                           Tolueneazo-\beta-naphthols, dipole moments of, 534.
  diazaline, 1064.
                                                           m-Tolueneazo-β-naphthol-6-sulphonic acid, 4'-hydr-
1:2-Tetrahydropyrido-8:9-benzo-4:5-benz-1:3-diazaline,
                                                             oxy-, chromic salt, 833.
  1065.
                                                           o-Toluenediazocyanides, 4- and 5-chloro-, 1802.
Tetrahydrorottlerin, and its trimethyl ether, 1583.
                                                           p-Toluenesulphonamidodiphenylsulphones, and their
Tetrahydroallorottlerin, 1591.
                                                             nitro-derivatives, 905.
                                                           N-p-Toluenesulphonyl-o-benzoicsulphinide, 761.
Tetrahydrosumatrolic acid, 1603.
s-4:4':6:6'-Tetramethoxydiphenylethane, s-2:2'-dihydr-
                                                           1-p-Toluenesulphonylbenzisothiazolone, and 4-chloro-,
  oxy-, 924.
5:7:3':4'-Tetramethoxyflavone, 6-bromo-, 94.
                                                           2-p-Toluenesulphonyl \beta-methylgalactoside, 1250.
2:5:2":5"-Tetramethoxy-p-terphenyl, 1286.
                                                           2-p-Toluenesulphonyloxybenzisothiazole, 761.
6:7:6':7'-Tetramethoxy-4:4:4':4'-tetramethylbis-2:2'-
                                                           2-p-Toluenesulphonyl 3:4-isopropylidene 6-trityl \beta-methylgalactoside, 1249.
  spirochroman, 198.
Tetramethyl ferrocyanide, isomerism of, 1107.
                                                           4-p-Toluenesulphonyl 2:3:6-tribenzoyl \beta-methylgalact-
\beta-Tetramethyl ferrocyanide, structure of, 1105.
                                                             oside, 1249.
4:4:4':4'-Tetramethylbis-2:2'-spirochroman, dibromo-
                                                           2-p-Toluenesulphonyl 3:4:6-trimethyl \beta-methylglucos-
  6:7:6':7'-tetrahydroxy-, tetra-acetyl derivative, and
                                                             ide. action of methyl-alcoholic ammonia on, 783.
  6:7:6':7'-tetrahydroxy-, and its tetra-acetyl deriv-
                                                           o-Toluidine-3:5-disulphonic acid, optical activity of,
  ative, 198.
{\bf 3:3:3':3'-Tetra\,methylbis-1:1'-} spiro{\bf hydrindene},
                                                           3-p-Toluidinophthalhydrazide, 139.
  5:6:7:5':6':7'-hexahydroxy-, 199.
                                                           3-p-Toluidino-N-p-tolylphthalimide, and 4- and 6-
O-Tetramethyldihydroisorottlerin, 1592.
                                                             chloro-, 137.
2:5:6:6-Tetramethyl-2-ethinyltetrahydropyran, 438.
                                                           Toluquinone derivatives, action of alcoholic methyl-
Tetramethyl d-idonolactone, 1073.
                                                             amine on, 1446.
Tetramethyl d-idose, 1073.
                                                           p-Tolyl p-benzyloxystyryl ketone, 1004.
Tetramethyl \beta-methyl-d-idopyranoside, 1072.
                                                           p-Tolyl a\beta-dibromo-\beta-p-benzyloxyphenylethyl ketone,
2:3:6:8-Tetramethyl-4-quinolone, and 4-chloro-, 786.
                                                             1004.
2:5:2'':5''-Tetramethyl-p-terphenyl, 1287.
                                                           p-Tolyl a-bromo-p-benzyloxystyryl ketone, 1005.
1:4:9:10-Tetraphenylanthracene, 397, 494.
                                                           p-Tolyl a\beta-dibromo-\beta-5-bromo-o-anisylethyl ketone,
1:4:5:8-Tetraphenylanthraquinone, 396.
1:4:9:10-Tetraphenyl-9:10-dihydroanthracene, 494.
                                                           p-Tolyl 5-bromo-\beta:2-dimethoxystyryl ketone, 95.
1:4:9:10-Tetraphenyl-9:10-dihydroanthracene, 9:10-di-
                                                           p-Tolyl \alpha-bromo-\beta-ethoxy-\beta-p-benzyloxyphenylethyl
  hydroxy-, 397.
                                                             ketone, 1004.
Tetraphenyldiphenoxyethane, preparation and pro-
                                                           p-Tolyl \alpha-bromo-\beta-hydroxy-\beta-p-benzyloxyphenylethyl
                                                             ketone, 1005.
  perties of, 30.
Tetraphenylethylene sulphide, preparation of, 1074.
                                                           p-Tolyl \alpha-bromo-\beta-methoxy-\beta-p-benzyloxyphenylethyl
2:2:5:5-Tetra-p-tolyl-2:5-dihydro-1:3:4-oxadiazole,
                                                             ketone, 1004.
  1075.
                                                           p-Tolyl 5-bromo-2-methoxy-\beta-ethoxystyryl ketone, 95.
Tetra-p-tolylethylene sulphide, 1074.
                                                           p-Tolyl a:5-dibromo-o-methoxystyryl ketone, 95.
                                                           9-p-Tolylcarbazole, 9-2'-amino-, and 9-2'-nitro-, 1950.
Thermochemistry of solutions, 118.
Thermostat, low-temperature, 1573.
                                                           p-Tolyl a\beta-dichloro-\beta-p-benzyloxyphenylethyl ketone,
Thesium virgatum, volatile oil glycosides from, 1084.
1-Thio-2-alkyl-1:2-dihydrobenzthiazoles, formation of,
                                                           p-Tolyl a-chloro-p-benzyloxystyryl ketone, 1005.
  from 1 alkylthiobenzthiazoles, 473.
                                                           p-Tolyl a-chloro-\beta-ethoxy-\beta-p-benzyloxyphenylethyl
1-Thio-2-isoamyl-1:2-dihydrobenzthiazole, 475.
                                                             ketone, 1004.
1-Thio-2-benzyl-1:2-dihydrobenzthiazole,
                                                      4-
                                                           p-Tolyl a-chloro-\beta-methoxy-\beta-p-benzyloxyphenylethyl
                                                             ketone, 1004.
  chloro-, 475.
Thiocoumarins, complex compounds of, with poly-
                                                           1-4'-Tolyl-2:5-dimethylbenziminazole, 1-2'-amino-, 2'-
  nitro-compounds, 1862.
                                                             acetyl derivative, 160.
                                                           4'-p-Tolyl-4-methylcoumarino-7':8':6:5-\alpha-pyrone, 1253.
1-Thio-2:4-dimethyl-1:2-dihydrobenzthiazole, 473.
1-Thio-2-ethyl-1:2-dihydro-α-naphthoxazole, 150.
                                                           2-Tolyloxyphenylarsonic acids, 1723.
Thiols, aromatic, sodium derivatives, reactions of,
                                                           2-Tolyloxyphenyldichloroarsines, 1723.
  with halogenonitro-benzenes and -naphthalenes,
                                                           N-p-Tolylphthalimide, 3-mono- and 3:6-di-chloro-, 136.
  1094.
                                                           3-p-Tolylthio-4'-methyldiphenylsulphone, 4-nitro-, 906.
                                                           γ-p-Tolylvaleraldehyde
1-Thio-5-methoxy-2-methyl-1:2-dihydrobenzthiazole,
                                                                                     2:4-dinitrophenylhydrazone,
                                                             1507.
1-Thio-2-a-methylallyl-1:2-dihydrobenzthiazole, 475.
                                                           1-\gamma-p-Tolyl-n-valeric acid, and its p-phenylphenacyl
1-Thio-2-methyl-1:2-dihydrobenzoxazole, 150.
                                                             ester, 1507.
1-Thio-2-methyl-1:2-dihydrobenzthiazole, 475.
                                                           l-a-Toxicarol, properties of, from Derris malaccensis,
  absorption spectrum and structure of, 1321.
1-Thio-2-methyl-1:2-dihydrobenzthiazole,
                                              4-chloro--
                                                           Triacetylbassic acid, 1128.
    472.
                                                            Triacetyl 6-tosyl \beta-methyl-d-galactoside, 1848.
  5-chloro-, 475.
                                                           Triazo-group, structure of, by monolayer measure-
Thiomethyl-1:2-dihydronaphthoxazoles, 150.
                                                             ments, 177
```

2:3:6-Tribenzoyl β -methylgalactoside, 1248.

3:4:6-Tribenzoyl 2-p-toluenesulphonyl β -methylgalactoside, 1250. Tridecane-1-carbonamide-13-carbonamidine hydrochloride, 1257. Tridecane-1-carbonitrile-13-carbonamide, 1257. Tridecane-1-carbonitrile-13-carbonamidoxime, and its hydrochloride, 1256. Tridecane-1:13-dicarbonamide, 1257. Tridecane-1:13-dicarbonamidoxime, and its dihydrochloride, 1256. 2-Tridecylaminopyridine, 1857. 1-Tridecyl-2-pyridoneimine sulphate, 1857. Triglycerides, mixed symmetrical, 103. mixed unsymmetrical, 1518. 1:2:3-Triketones, action of acids on, 1428. 2:3:6-Trimethoxyacetophenone, 959. 2:3:5-Trimethoxybenzoic acid, methyl ester, 1927. 2:4:6-Trimethoxybenzoic acid, 3-chloro-, methyl ester, 2:4:6-Trimethoxybenzylamine, and its hydrochloride and acetyl derivative, 90. 2:3:5-Trimethoxydibenzoylmethane, 1927. 5:7:4'-Trimethoxyflavin, 6-bromo-, 93. 3:4:6-Trimethoxytoluene, 2:5-dihydroxy-, 1453. 3:4:6-Trimethoxytoluquinone, 1452. Trimethyl cobalticyanide, isomerism of, 1108. 2:4:6-Trimethyl 3-acetamido- β -methylaltroside, 273. Trimethylamine, reactivity of, with organic halides, thermal decomposition of, 496. 2:3:4-Trimethyl $\hat{\beta}$ -1:6-anhydrogalactopyranose, 389. Trimethyl a- and β -benzylglucosaminides, N-benzoyl derivatives, 277. 2':3':4-Trimethylchromono-7':8'-6:5- α -pyrone, 1252. Trimethyl dimethylaminomethylglucoside, 279. 2:3:4-Trimethyl galactonamide, 1735. 2:3:4-Trimethyl δ -galactonolactone, 390. 2:3:4-Trimethyl galactopyranose, 389. 2:4:6-Trimethyl d-galactose anilide, 1486. 2:3:4-Trimethylglucose, anilide and lactone of, 584. 2:3:5-Trimethylcycloheptanone, and its 2:4-dinitrophenylhydrazone, 188. 2:4:6-Trimethyl d-idonamide, 1072. Trimethyl d-idono- δ -lactone, 1072. 2:3:4-Trimethyl d-mannonic acid, amide and lactone, 1880. 2:3:4-Trimethyl d-mannosaccharodiamide, 1880. 2:3:4-Trimethyl mannose, 1878. Trimethyl α - and β -methylglucosaminides, derivatives of, 277. Trimethyl a- and β -methylglucosidyl-2-trimethyl-ammonium iodides, 279. 2:3:4-Trimethyl methylglucuronoside, structure of, and its derivatives, 1732. 2:4:6-Trimethyl β -methyl-d-idopyranoside, 1072. 2:3:4-Trimethyl a-methyl-d-mannoside, 1880. 2:3:4-Trimethyl mucic acid, derivatives of, 1735. methyl ester, 390. 2:4:5-Trimethyl mucic acid, derivatives of, 1738. 2:6:8-Trimethylquinoline, 4-chlorobromo-, 787. 2:6:8-Trimethyl-4-quinolone, bromo-, 786. 2:3:4-Trimethyl saccharolactone, methyl ester, 1733. Trimethylsilylammonium chloride, preparation and properties of, 821. NN'N''-Trimethyltrimethylenetriamine, of, 1788. derivatives Triphenylarsine phenoxyhydroxide, 869. 1:9:10-Triphenyl-9:10-dihydroanthracene, 9:10-dihydr-Triphenylmethoxides, reactions of, 314. Triphenylmethyl chloride, hydrolysis of, in dioxan, **478**. preparation of, 312. Triphenyl-1-naphthylallene, 433.

1997 $aa\gamma$ -Triphenyl- γ -1-naphthylallyl alcohol, 433. $\alpha\gamma\gamma$ -Triphenyl- α -1-naphthylallyl alcohol, 434. 1:2:4-Triphenylsulphonylbenzene, 906. Trisilane, pyrolysis of, 1021. s-Tris-5-methyl-2:3-coumaronobenzene, 280. Triterpenes, 755 1:2:4-Tri-p-tolylsulphonylbenzene, 906. 5-Trityl 2:3-dimethyl methyl-l-arabofuranoside, 754. 5-Trityl methyl-l-arabofuranoside, 754. 6-Trityl a-methylgalactopyranoside, 1735. 6-Trityl α -methyl-d-mannoside, 1879. 6-Trityl 2:3:4-trimethyl a-methylgalactoside, 1736. 6-Trityl 2:3:4-trimethyl a-methyl-d-mannoside, 1879. Tubocurarine, constitution of, 1157. Ulmus fulva, mucilage from bark of, 1469. Undecane-1-carbonamide-11-carbonamidoxime, its dihydrochloride, 1255. Undecane-1-carbonitrile-11-carbonamide, 1256. Undecane-1-carbonitrile-11-carbonamidoxime, and its hydrochloride, 1255. Undecane-1:11-dicarbonamidoxime, and its dihydrochloride, 1255. 2-Undecylaminopyridine, 1856. 1-Undecyl-2-pyridoneimine sulphate, 1857. Uric acid riboside, 1369. Uronic acids, synthesis of, 1529. Usnic acid, 1594.

Usnolic acid, analogues of, 1594.

Valerolactone, hydrolysis of, by sodium hydroxide, 508. isoVanillic acid, methyl ester, preparation of, 1161. Vapours, adsorption of, on solids, 139. dipole moments of, 1144. Vapour density, balance for determination of, 43. Vapour pressure, equation for, and temperature, 292. Velocity of esterification of fatty acids, 593. Velocity of reaction and electrostatic potential, 1780. at low temperatures, 1573. exchange, 1279. Viscometers, drainage of, 325. Viscosity in binary mixed liquids, 79. of liquids, and its relation to mol. vol. and mol. wt., 1341. Vitamin-A, oxidation of, aldehyde from, and its derivatives, 131. by Oppenauer reagent, 128. Vitamin- \overline{E} , 542. Vitexin, 1635.

Wagner-Meerwein rearrangement, 1188. Water gas. See under Gas. Wheat starch. See under Starch.

X.

o-Xylene, condensation of, with benzylidene chloride, m-5-Xylidine, 2-nitro-, preparation of, 985.

o- and p-Xyloquinol acetates, benzoates, and benzyl ethers, 543.

Yeast ribonucleic acid, constitution of, 907, 1842.

 \mathbf{z} .

Zieria Smithii, oil from, constituents of, 1496. Zygophyllum coccineum, quinovic acid from, 1760.